

e-Permitting

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FIRE DEPARTMENT REVISE PERMIT AND INSPECTION RECORD 10/21/2024
 MUNICIPAL NO.2024-031100 FOLIO: 3220130010058
 JOB SITE ADDRESS 5790 NW 165 TER
 PROPOSED USE WAREHOUSE/STORAGE
 LEGAL 13 52 40 1.423 AC M/L FL FRUIT LANDS CO SUB 1
 APPLICATION TYPE NEW 0 SQFT 0 UNITS 0 FLOORS
 OWNER NAME 16401 NW 58TH SP LLC
 CONTRACTOR SOUTHERN FIRE CONTROL INC
 QUALIFIER
 PERMIT TYPE FIRE
 CATEGORIES 0032 FIRE SPRINKLERS

DATE: 10/21/2024 PROCESS NUMBER: M2024004534 NEW
 FIRE 276500 ALTERATIONS 757.20 FIRE 1 STANDPIPE TES 232.81
 FIRE 1 SPRINKLER UPF 187.00 FIRE 501 ROUGH INSP-FI 566.69
 FIRE 501 FIRE SUPP TES 566.69 FIRE 1 UNDERGROUND T 280.67
 FRWK 1594 1ST FIRE MAJO 678.00 FRWK 1596 2ND FIRE MAJO 678.00
 UBS1 1 BLDG 7.5% UPF 1.88 UPMU 25 UPFRONT FEE F 25.00

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REQUIRED INSPECTIONS INIT DATE
 FIRE

0032 FIRE SPRINKLERS		
200 FIRE HYDRANTS	_____	_____
201 FIRE UNDERGROUND	_____	_____
202 FIRE PRESSURE TEST	_____	_____
206 FIRE ROUGH	_____	_____
207 FIRE PUMP PERFORMANCE TEST	_____	_____
210 FIRE STANDPIPE	_____	_____
215 FIRE FLUSH	_____	_____
209 FIRE FINAL	_____	_____

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DATE: 9/23/2024 PROCESS NUMBER: M2024026378 REVISED *AMT. PAID 346.90
FIRE 370 MAJOR PLAN REVISION 185.00
FIRE 1 FIRE REVISION UPFRONT FEE 23.10
FRWK 370 1ST FIRE MAJOR REWORK 185.00
UPMU 25 UPFRONT FEE FOR MUNICIPALITY 25.00

DATE: 10/14/2024 PROCESS NUMBER: M2025000755 REVISED
FIRE 1 3RD FIRE SAFETY REINSP FEE 92.89

DATE: 7/29/2024 PROCESS NUMBER: M2024021921 REVISED
FIRE 37100 FIRE FEE 371.00
FIRE 1 FIRE REVISION UPFRONT FEE 23.10
FRWK 1596 1ST FIRE MAJOR REWORK 678.00
FRWK 742 2ND FIRE MAJOR REWORK 371.00
UPMU 25 UPFRONT FEE FOR MUNICIPALITY 25.00

DATE: 8/15/2024 PROCESS NUMBER: M2024023244 REVISED
FIRE 1 2ND FIRE SAFETY REINSP FEE 92.89
FIRE 2 3RD FIRE SAFETY REINSP FEE 185.78

DATE: 7/12/2024 PROCESS NUMBER: M2024020633 REVISED
FIRE 1 1ST FIRE SAFETY REINSP FEE 92.89

10/21/2024 14:57 BNZWEB1 182410215879 WEBIPAS 346.90

FIRE DEPARTMENT REVISE PERMIT AND INSPECTION RECORD 10/21/2024
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PROPOSED USE WAREHOUSE/STORAGE

INSP INSP INSPECTION DISP RESULT INSP
TYPE DATE !----- COMMENTS -----! CODE DATE INIT

202 7/ 2/2024 002 7/ 2/2024 E88884
202 7/15/2024 ROUGH/PRESSURE FOR 2ND FLOOR 002 7/15/2024 ALCARBO
215 7/16/2024 FLUSH UNDERGROUND 001 7/16/2024 ALCARBO
202 7/26/2024 002 7/26/2024 E164643
202 8/14/2024 ROUGH AND PRESSURE FOR 3RD FLOOR 002 8/14/2024 ALCARBO
210 8/15/2024 ROUGH AND PRESSURE FOR STANDPIPES 002 8/15/2024 E164643
210 10/ 8/2024 STANDPIPE FLOW TEST 001 10/ 8/2024 E33268
219 10/11/2024 090 10/11/2024 E33268
202 10/16/2024 068 10/16/2024 ALCARBO
202 0/ 0/ 0 000 0/ 0/ 0

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TO SCHEDULE A FIRE INSPECTION, PLEASE VISIT THE WEB AT WWW.MIAMIDADE.GOV/BUILDING OR WWW.MIAMIDADE.GOV/FIRE. YOU WILL NEED TO PROVIDE YOUR TEN DIGIT MUNICIPAL INSPECTION NUMBER AND INSPECTION TYPE. THE INSPECTION TYPE CAN BE FOUND ON YOUR INSPECTION REQUIREMENTS AND RECORDS CARD.

IF YOU HAVE ANY QUESTIONS OR CONCERNS REGARDING AN INSPECTION, SCHEDULING A PRELIMINARY INSPECTION, OR LOAD BANK TEST INSPECTION, PLEASE CALL FIRE PREVENTION AT 786-331-4800.

IF YOU HAVE ANY QUESTIONS OR CONCERNS REGARDING A PLAN REVIEW, PLEASE CALL FIRE ENGINEERING AT (786) 315-2771.

**BE ADVISED THIS IS NOT A PERMIT. PERMIT IS TO BE ISSUED BY YOUR CORRESPONDING MUNICIPAL BUILDING DEPARTMENT.

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Hydraulic Calculations by HydraCALC

Hydraulic Calculations

Job Name : Miami Lakes Store Quest Storage
Drawing :
Location : 16401 NW 58 AVE
Remote Area : 1
Contract :
Data File : Miami Lakes Store Quest Storage.WXF

HYDRAULIC CALCULATIONS
for

JOB NAME Miami Lakes Store Quest Storage
Location 16401 NW 58 AVE
Drawing #
Contract #
Date 10/11/23

DESIGN

Remote area # 1
Remote area location 3RD FLOOR
Occupancy classification ORDINARY HAZARD GROUP II
Density .20 - Gpm/SqFt
Area of application 1500 - SqFt
Coverage/sprinkler 256 - SqFt
Type of sprinkler calculated VICTAULIC V3425
Sprinklers calculated 6
In-rack demand - GPM
Hose streams 250 - GPM
Total water required (including hose streams) 558.199 - GPM @ 42.9127 - Psi
Type of system WET
Volume of system (dry or pre-action) - Gal

WATER SUPPLY INFORMATION

Test date 09/21/2023
Location NW 58 AVE + NW 165 TER
Source of info MIAMI DADE

CONTRACTOR INFO SOUTHERN FIRE CONTROL

Address PEMBROKE PINES FL
Phone #
Name of designer FDG
Authority having jurisdiction MIAMI DADE COUNTY
NOTES:

text1(35) - invisible

Water Supply Curve

Hydraulic Calculations
Miami Lakes Store Quest Storage

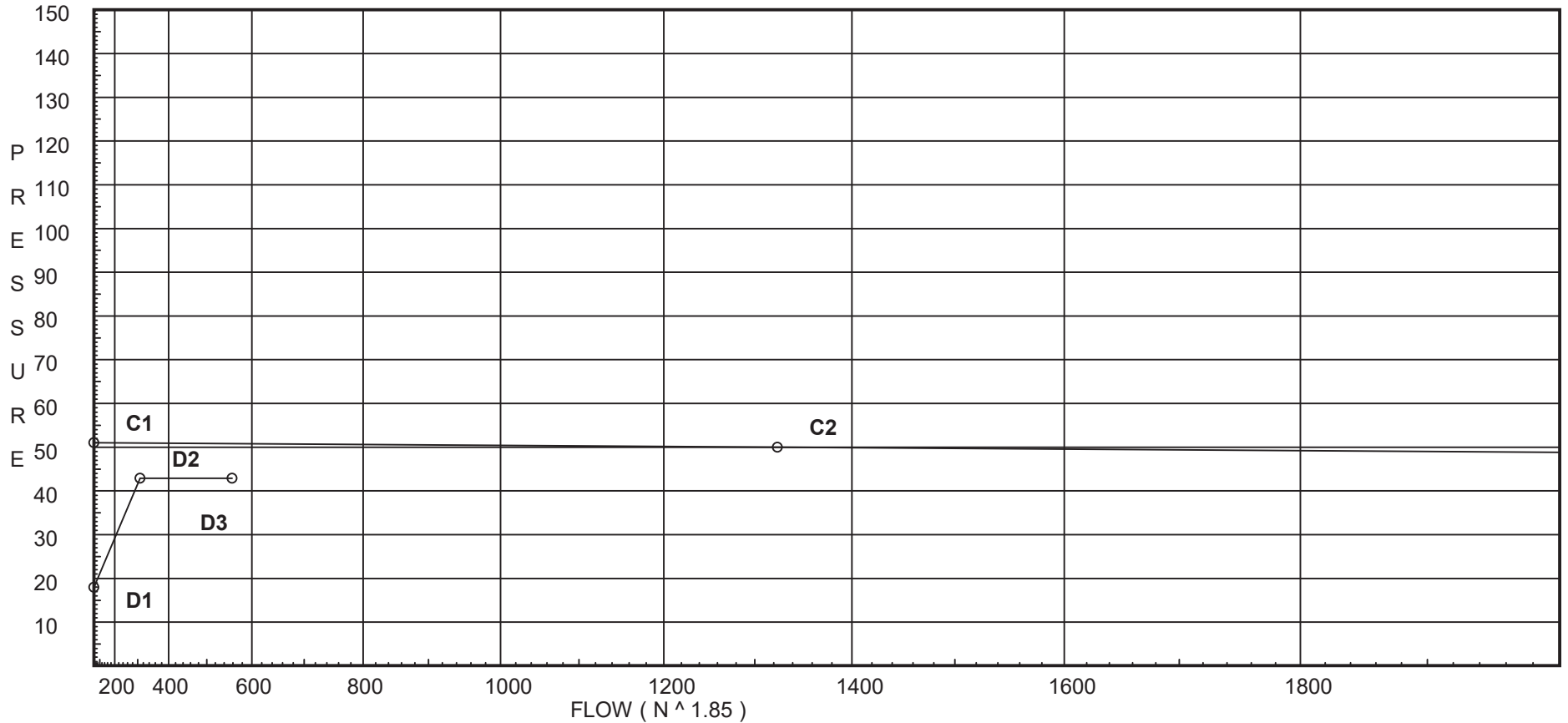
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Date 10/11/23

City Water Supply:

C1 - Static Pressure : 51
C2 - Residual Pressure: 50
C2 - Residual Flow : 1324

Demand:

D1 - Elevation : 17.974
D2 - System Flow : 308.199
D2 - System Pressure : 42.913
Hose (Demand) : 250
D3 - System Demand : 558.199
Safety Margin : 7.885



Fittings Used Summary

Hydraulic Calculations
Miami Lakes Store Quest Storage

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	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
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
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
Zaf	Ames 3000SS	Fitting generates a Fixed Loss Based on Flow																			

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.

Flow Summary - NFPA

Hydraulic Calculations
Miami Lakes Store Quest Storage

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SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	51.0	50	1324.0	50.798	558.2	42.913

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
1	42.5	14	13.37	51.2	0.2 256
2	42.5	14	13.54	51.52	0.2 256
3	42.5		16.28		
4	42.5		16.33		
5	42.5		16.65		
6	42.5		16.84		
7	42.5		16.98		
8	42.5		17.04		
9	42.5		17.08		
10	42.5		17.8		
11	42.5		17.98		
12	42.5		18.1		
13	42.5		18.17		
14	42.5		18.24		
15	42.5		18.24		
3FV	14.25		31.95		
1ST	14.25		32.01		
SP1	14.25		32.04		
BLK	14.25		33.28		
BASE	3.0		38.24		
F	3.0		38.36		
16	-3.0		40.98		
D	-3.0		41.43		
C	3.0		38.85		
B	3.0		41.76		
A	-3.0		44.38		
FL	-3.0		44.48		
TEST	1.0		42.91	250.0	
19	42.5	14	13.42	51.29	0.2 256
20	42.5		18.06		
21	42.5		18.07		
22	42.5		18.08		
23	42.5		18.1		
24	42.5		18.13		
25	42.5		18.16		
26	42.5		18.2		
27	42.5		18.23		
28	42.5		16.29		
29	42.5		18.06		
30	42.5	14	13.57	51.58	0.2 256
31	42.5	14	13.41	51.26	0.2 256
32	42.5	14	13.45	51.35	0.2 256

Flow Summary - NFPA

Hydraulic Calculations
Miami Lakes Store Quest Storage

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NODE ANALYSIS (cont.)

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
33	42.5		18.16		

Final Calculations : Hazen-Williams

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date 10/11/23

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	*****
1 to 2	42.500 42.500	14.00	33.91	2			16.000	120	13.375 0.0			
										Vel =	2.98	
2 to 3	42.500 42.500	14.00	51.52	2	T	12.307	35.670 12.307	120	13.540 0.0			
										Vel =	7.50	
3 to 4	42.500 42.500		-28.47	3			16.000	120	16.277 0.0			
										Vel =	2.19	
4 to 5	42.500 42.500		85.81	3			16.000	120	16.335 0.0			
										Vel =	5.49	
5 to 6	42.500 42.500		142.77	3			16.000	0.0198	0.316			
										Vel =	4.42	
6 to 7	42.500 42.500		-27.67	3			14.500	120	16.651 0.0			
										Vel =	3.43	
7 to 8	42.500 42.500		115.1	3			16.000	120	16.843 0.0			
										Vel =	2.58	
8 to 9	42.500 42.500		-24.16	3			16.000	120	17.044 0.0			
										Vel =	1.65	
9 to 10	42.500 42.500		42.87	3			16.000	0.0021	0.034			
										Vel =	3.76	
10 to 11	42.500 42.500		0.0	2	T	12.307	32.880 12.307	120	17.078 0.0			
										Vel =	2.37	
11 to 12	42.500 42.500		42.87	2	T	12.307	14.000 12.307	120	17.798 0.0			
										Vel =	1.31	
12 to 13	42.500 42.500		-15.90	2	E	6.153	47.260 6.153	120	17.975 0.0			
										Vel =	0.57	
13 to 14	42.500 42.500		14.89	2	2E 2T	12.307 24.613	107.210 36.920	120	18.096 0.0			
										Vel =	1.31	
14 to 15	42.500 42.500		6.53	2	T	12.307	144.130	0.0005	0.070			
										Vel =	0.15	
15 to 3FV	42.500 14.250		8.36	2		12.307	22.120 12.307	120	18.166 0.0			
										Vel =	3.12	
14 to 15	42.500 42.500		14.89	6			12.580	120	18.244 0.0			
										Vel =	0.15	
15 to 3FV	42.500 14.250		14.89	6	T 2E	37.72 35.205	22.510 125.733	120	18.244 13.235		** Fixed Loss = 1	
										Vel =	3.12	
3FV to 1ST	14.250 14.250		0.0	6	B S Fsp	12.573 40.235 0.0	148.243	0.0032	0.470			
										Vel =	3.12	
3FV to 1ST	14.250 14.250		0.0	6	E	17.603	2.230 17.603	120	31.949 0.0			
										Vel =	3.12	

Final Calculations : Hazen-Williams

Hydraulic Calculations
Miami Lakes Store Quest Storage

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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	*****
1ST to SP1	14.250 14.250		0.0 308.2	6 6.357			7.710 7.710	120 0.0031	32.012 0.0 0.024			Vel = 3.12
SP1 to BLK	14.250 14.250		0.0 308.2	6 6.357	T 3E	37.72 52.808	301.080 90.528 391.608	120 0.0032	32.036 0.0 1.242			Vel = 3.12
BLK to BASE	14.250 3		0.0 308.2	6 6.357	E	17.603	11.250 17.603 28.853	120 0.0032	33.278 4.872 0.092			Vel = 3.12
BASE to F	3 3		0.0 308.2	6 6.357	2E	35.205	2.600 35.205 37.805	120 0.0032	38.242 0.0 0.120			Vel = 3.12
F to 16	3 -3		0.0 308.2	6 6.357			6.000 6.000	120 0.0030	38.362 2.599 0.018			Vel = 3.12
16 to D	-3 -3		0.0 308.2	6 5.86	5E	89.466	54.860 89.466 144.326	150 0.0031	40.979 0.0 0.451			Vel = 3.67
D to C	-3 3		0.0 308.2	6 6.357			6.000 6.000	120 0.0032	41.430 -2.599 0.019			Vel = 3.12
C to B	3 3		0.0 308.2	6 6.357	2E Zaf	35.205 0.0	4.090 35.205 39.295	120 0.0032	38.850 2.784 0.124		** Fixed Loss = 2.784	Vel = 3.12
B to A	3 -3		0.0 308.2	6 6.357			6.000 6.000	120 0.0032	41.758 2.599 0.019			Vel = 3.12
A to FL	-3 -3		0.0 308.2	6 5.86	E	17.893	14.260 17.893 32.153	150 0.0031	44.376 0.0 0.100			Vel = 3.67
FL to TEST	-3 1		0.0 308.2	6 5.86			54.167 54.167	150 0.0031	44.476 -1.732 0.169			Vel = 3.67
TEST			250.00 558.20						42.913			Qa = 250.00 K Factor = 85.21
1 to 19	42.500 42.500		17.29 17.29	2 2.157			16.000 16.000	120 0.0029	13.375 0.0 0.047			Vel = 1.52
19 to 20	42.500 42.500	14.00	51.29 68.58	2 2.157	T	12.307	109.800 12.307 122.107	120 0.0380	13.422 0.0 4.640			Vel = 6.02
20 to 21	42.500 42.500		28.47 97.05	6 6.357			16.000 16.000	120 0.0004	18.062 0.0 0.006			Vel = 0.98
21 to 22	42.500 42.500		68.38 165.43	6 6.357			16.000 16.000	120 0.0010	18.068 0.0 0.016			Vel = 1.67
22 to 23	42.500 42.500		27.67 193.1	6 6.357			14.500 14.500	120 0.0013	18.084 0.0 0.019			Vel = 1.95

Final Calculations : Hazen-Williams

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date 10/11/23

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	*****
23 to 24	42.500 42.500		25.82 218.92	6 6.357			16.000 16.000	120 0.0017	18.103 0.0 0.027		Vel = 2.21	
24 to 25	42.500 42.500		22.25 241.17	6 6.357			14.000 14.000	120 0.0020	18.130 0.0 0.028		Vel = 2.44	
25 to 26	42.500 42.500		24.16 265.33	6 6.357			16.000 16.000	120 0.0024	18.158 0.0 0.039		Vel = 2.68	
26 to 27	42.500 42.500		15.90 281.23	6 6.357			14.000 14.000	120 0.0026	18.197 0.0 0.037		Vel = 2.84	
27 to 15	42.500 42.500		12.08 293.31	6 6.357			3.420 3.420	120 0.0029	18.234 0.0 0.010		Vel = 2.96	
15			0.0 293.31						18.244		K Factor = 68.67	
3 to 28	42.500 42.500		28.47 28.47	3 3.26			15.000 15.000	120 0.0010	16.277 0.0 0.015		Vel = 1.09	
28 to 29	42.500 42.500		0.0 28.47	2 2.157	2T 4E	24.613 24.613	187.470 49.226 236.696	120 0.0075	16.292 0.0 1.769		Vel = 2.50	
29 to 20	42.500 42.500		0.0 28.47	6 6.357			15.000 15.000	120 0.0001	18.061 0.0 0.001		Vel = 0.29	
20			0.0 28.47						18.062		K Factor = 6.70	
4 to 30	42.500 42.500		-85.81 -85.81	2 2.157	T	12.307	35.670 12.307 47.977	120 -0.0575	16.335 0.0 -2.760		Vel = 7.53	
30 to 31	42.500 42.500	14.00	51.58 -34.23	2 2.157			16.000 16.000	120 -0.0105	13.575 0.0 -0.168		Vel = 3.01	
31 to 32	42.500 42.500	14.00	51.26 17.03	2 2.157			16.000 16.000	120 0.0029	13.407 0.0 0.046		Vel = 1.50	
32 to 21	42.500 42.500	14.00	51.35 68.38	2 2.157	T	12.307	109.800 12.307 122.107	120 0.0378	13.453 0.0 4.615		Vel = 6.00	
21			0.0 68.38						18.068		K Factor = 16.09	
5 to 22	42.500 42.500		27.68 27.68	2 2.157	2T	24.613	177.470 24.613 202.083	120 0.0071	16.651 0.0 1.433		Vel = 2.43	
22			0.0 27.68						18.084		K Factor = 6.51	

Final Calculations : Hazen-Williams

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date 10/11/23

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	*****
6 to 23	42.500 42.500		25.82 25.82	2 2.157	2T	24.613	177.470 24.613 202.083	120 0.0062	16.843 0.0 1.260		Vel = 2.27	
23			0.0 25.82						18.103		K Factor = 6.07	
7 to 24	42.500 42.500		22.25 22.25	2 2.157	2T 4E	24.613	194.640 24.613 243.866	120 0.0047	16.975 0.0 1.155		Vel = 1.95	
24			0.0 22.25						18.130		K Factor = 5.23	
8 to 25	42.500 42.500		24.16 24.16	2 2.157	2T	24.613	177.470 24.613 202.083	120 0.0055	17.044 0.0 1.114		Vel = 2.12	
25			0.0 24.16						18.158		K Factor = 5.67	
10 to 26	42.500 42.500		15.90 15.9	2 2.157	T	12.307	144.590 12.307 156.897	120 0.0025	17.798 0.0 0.399		Vel = 1.40	
26			0.0 15.90						18.197		K Factor = 3.73	
11 to 27	42.500 42.500		12.08 12.08	2 2.157	2T	24.613	144.590 24.613 169.203	120 0.0015	17.975 0.0 0.259		Vel = 1.06	
27			0.0 12.08						18.234		K Factor = 2.83	
12 to 33	42.500 42.500		8.36 8.36	2 2.157			83.530 83.530	120 0.0008	18.096 0.0 0.064		Vel = 0.73	
33 to 13	42.500 42.500		0.0 8.36	2 2.157			7.680 7.680	120 0.0008	18.160 0.0 0.006		Vel = 0.73	
13			0.0 8.36						18.166		K Factor = 1.96	

AutoPeaking Summary

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date 10/11/23

Auto Peaking Summary - List of Pipes for Area Calculated

Left Side			Right Side		
From	To	Length	From	To	Length
2	3	51.670	19	20	93.800
4	30	51.670	32	21	93.800
2	3	35.670	19	20	109.800
4	30	35.670	32	21	109.800

	Flow Required	Safety Margin	Pressure Differential
Area Calculated	558.199	7.885	-0.139
Right	16.000 558.104	7.746	0.000
Right	32.000 558.086	7.771	-0.025

Typical Distance Between Heads = 16.000

Split Point Used in Worst Area Peaked = 1

Split Point Used in Area Calculated = 1



Hydraulic Calculations by HydraCALC

Hydraulic Calculations

Job Name : Miami Lakes Store Quest Storage
Drawing :
Location : 16401 NW 58 AVE
Remote Area : 1
Contract :
Data File : Miami Lakes Store Quest Storage Area 2.WXF

HYDRAULIC CALCULATIONS
for

JOB NAME Miami Lakes Store Quest Storage
Location 16401 NW 58 AVE
Drawing #
Contract #
Date 10/11/23

DESIGN

Remote area # 1
Remote area location 3RD FLOOR
Occupancy classification ORDINARY HAZARD GROUP II
Density .20 - Gpm/SqFt
Area of application 1500 - SqFt
Coverage/sprinkler 256 - SqFt
Type of sprinkler calculated VICTAULIC V3425
Sprinklers calculated 7
In-rack demand - GPM
Hose streams 250 - GPM
Total water required (including hose streams) 629.678 - GPM @ 49.2505 - Psi
Type of system WET
Volume of system (dry or pre-action) - Gal

WATER SUPPLY INFORMATION

Test date 09/21/2023
Location NW 58 AVE + NW 165 TER
Source of info MIAMI DADE

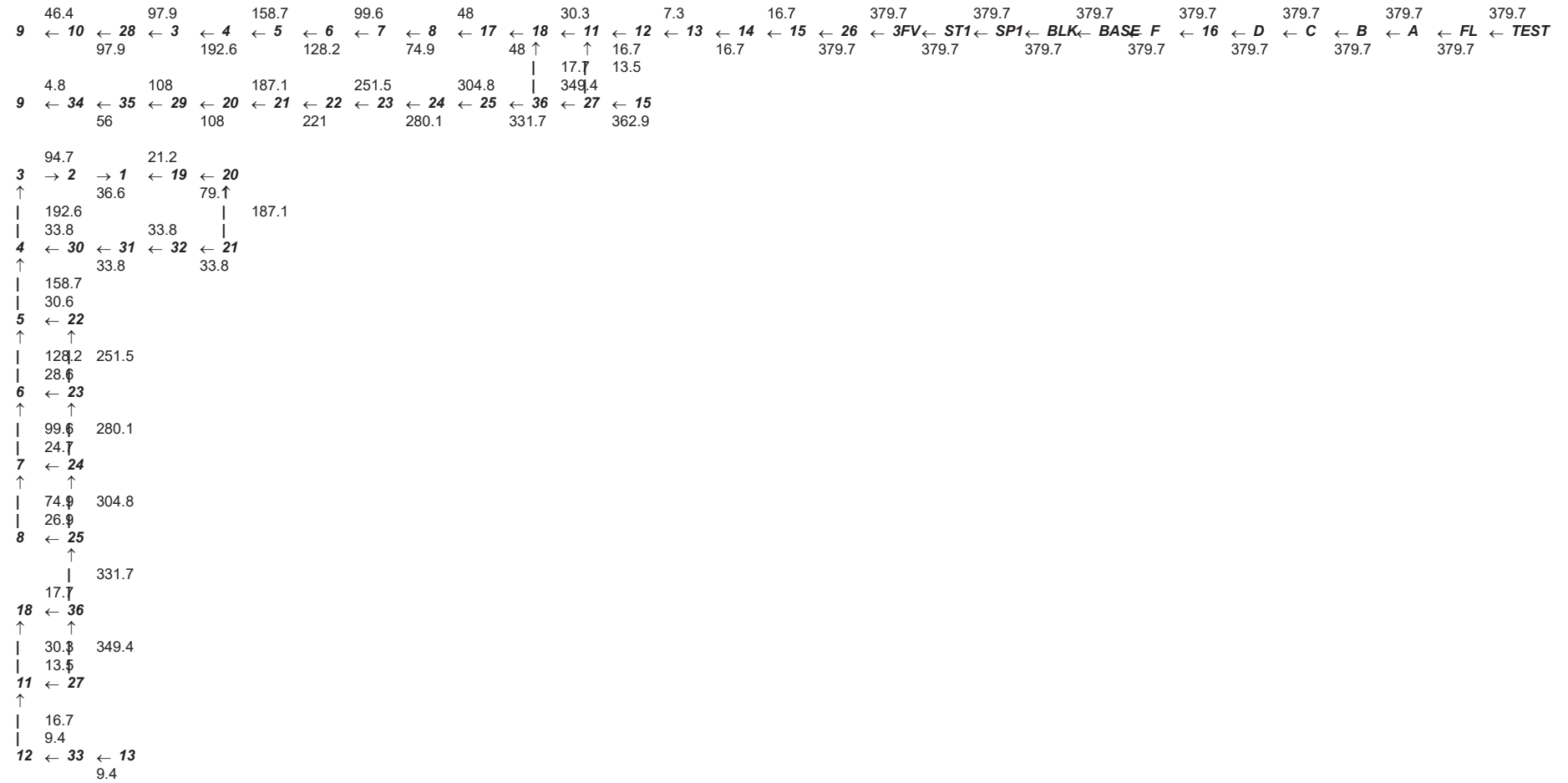
CONTRACTOR INFO SOUTHERN FIRE CONTROL

Address PEMBROKE PINES FL
Phone #
Name of designer FDG
Authority having jurisdiction MIAMI DADE COUNTY
NOTES:

text1(35) - invisible

Flow Diagram

Hydraulic Calculations
Miami Lakes Store Quest Storage



Fittings Used Summary

Hydraulic Calculations
Miami Lakes Store Quest Storage

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	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
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
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
Zaf	Ames 3000SS	Fitting generates a Fixed Loss Based on Flow																			

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.

Flow Summary - NFPA

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	51.0	50	1324.0	50.747	629.68	49.25

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
9	42.5	14	13.37	51.2	0.2 256
10	42.5	14	13.52	51.48	0.2 256
28	42.5		20.39		
3	42.5		20.54		
4	42.5		21.09		
5	42.5		21.47		
6	42.5		21.7		
7	42.5		21.87		
8	42.5		21.95		
17	42.5		21.99		
18	42.5		22.88		
11	42.5		23.11		
12	42.5		23.26		
13	42.5		23.34		
14	42.5		23.44		
15	42.5		23.44		
26	42.5		23.88		
3FV	42.5		25.13		
ST1	14.25		37.38		
SP1	14.25		37.41		
BLK	14.25		39.24		
BASE	3.0		44.24		
F	3.0		44.42		
16	-3.0		47.04		
D	-3.0		47.71		
C	3.0		45.14		
B	3.0		47.96		
A	-3.0		50.59		
FL	-3.0		50.73		
TEST	1.0		49.25	250.0	
34	42.5	14	13.38	51.21	0.2 256
35	42.5	14	13.8	52.0	0.2 256
29	42.5		23.14		
20	42.5		23.15		
21	42.5		23.17		
22	42.5		23.19		
23	42.5		23.22		
24	42.5		23.27		
25	42.5		23.31		
36	42.5		23.36		
27	42.5		23.43		
2	42.5	14	17.23	58.11	0.2 256

Flow Summary - NFPA

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date

NODE ANALYSIS (cont.)

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>		<i>Notes</i>
1	42.5	14	17.04	57.78	0.2	256
19	42.5	14	17.1	57.9	0.2	256
30	42.5		21.58			
31	42.5		21.74			
32	42.5		21.91			
33	42.5		23.34			

Final Calculations : Hazen-Williams

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date

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 to 10	42.5 42.500	14.00	46.40 46.4	2 2.157			8.000 8.000	120 0.0184	13.375 0.0 0.147			Vel = 4.07
10 to 28	42.500 42.5	14.00	51.48 97.88	2 2.157	4E T	24.613 12.307	56.670 36.920 93.590	120 0.0734	13.522 0.0 6.868			Vel = 8.59
28 to 3	42.5 42.5		0.0 97.88	3 3.26			15.000 15.000	120 0.0098	20.390 0.0 0.147			Vel = 3.76
3 to 4	42.5 42.5		94.69 192.57	3 3.26			16.000 16.000	120 0.0343	20.537 0.0 0.549			Vel = 7.40
4 to 5	42.5 42.5		-33.85 158.72	3 3.26			16.000 16.000	120 0.0241	21.086 0.0 0.385			Vel = 6.10
5 to 6	42.5 42.5		-30.57 128.15	3 3.26			14.500 14.500	120 0.0161	21.471 0.0 0.234			Vel = 4.93
6 to 7	42.5 42.5		-28.57 99.58	3 3.26			16.000 16.000	120 0.0101	21.705 0.0 0.162			Vel = 3.83
7 to 8	42.5 42.5		-24.69 74.89	3 3.26			14.000 14.000	120 0.0060	21.867 0.0 0.084			Vel = 2.88
8 to 17	42.5 42.5		-26.91 47.98	3 3.26			14.830 14.830	120 0.0026	21.951 0.0 0.039			Vel = 1.84
17 to 18	42.5 42.5		0.0 47.98	2 2.157	T	12.307	32.880 12.307 45.187	120 0.0196	21.990 0.0 0.887			Vel = 4.21
18 to 11	42.5 42.5		-17.72 30.26	2 2.157	T	12.307	15.170 12.307 27.477	120 0.0084	22.877 0.0 0.230			Vel = 2.66
11 to 12	42.5 42.5		-13.52 16.74	2 2.157	E	6.153	47.260 6.153 53.413	120 0.0028	23.107 0.0 0.149			Vel = 1.47
12 to 13	42.5 42.5		-9.40 7.34	2 2.157	2E 2T	12.307 24.613	107.210 36.920 144.130	120 0.0006	23.256 0.0 0.088			Vel = 0.64
13 to 14	42.5 42.5		9.40 16.74	2 2.157	T	12.307	22.120 12.307 34.427	120 0.0028	23.344 0.0 0.096			Vel = 1.47
14 to 15	42.5 42.5		0.0 16.74	6 6.357			12.580 12.580	120 0	23.440 0.0 0.0			Vel = 0.17
15 to 26	42.5 42.5		362.94 379.68	6 6.357	T 2E	37.72 35.205	20.780 72.925 93.705	120 0.0047	23.440 0.0 0.437			Vel = 3.84

Final Calculations : Hazen-Williams

Hydraulic Calculations
Miami Lakes Store Quest Storage

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Date

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	*****
29 to 20	42.5 42.5		0.0 108.01	6 6.357			15.000 15.000	120 0.0005	23.139 0.0 0.007		Vel = 1.09	
20 to 21	42.5 42.5		79.10 187.11	6 6.357			16.000 16.000	120 0.0012	23.146 0.0 0.020		Vel = 1.89	
21 to 22	42.5 42.5		33.84 220.95	6 6.357			16.000 16.000	120 0.0017	23.166 0.0 0.027		Vel = 2.23	
22 to 23	42.5 42.5		30.58 251.53	6 6.357			14.500 14.500	120 0.0022	23.193 0.0 0.032		Vel = 2.54	
23 to 24	42.5 42.5		28.57 280.1	6 6.357			16.000 16.000	120 0.0026	23.225 0.0 0.042		Vel = 2.83	
24 to 25	42.5 42.5		24.69 304.79	6 6.357			14.000 14.000	120 0.0031	23.267 0.0 0.044		Vel = 3.08	
25 to 36	42.5 42.5		26.90 331.69	6 6.357			14.830 14.830	120 0.0036	23.311 0.0 0.054		Vel = 3.35	
36 to 27	42.5 42.5		17.73 349.42	6 6.357			15.170 15.170	120 0.0040	23.365 0.0 0.060		Vel = 3.53	
27 to 15	42.5 42.5		13.52 362.94	6 6.357			3.420 3.420	120 0.0044	23.425 0.0 0.015		Vel = 3.67	
15			0.0 362.94						23.440		K Factor = 74.96	
3 to 2	42.5 42.5		-94.69 -94.69	2 2.157	T	12.307	35.670 12.307 47.977	120 -0.0690	20.537 0.0 -3.311		Vel = 8.31	
2 to 1	42.5 42.5	14.00	58.10 -36.59	2 2.157			16.000 16.000	120 -0.0119	17.226 0.0 -0.191		Vel = 3.21	
1 to 19	42.5 42.5	14.00	57.78 21.19	2 2.157			16.000 16.000	120 0.0044	17.035 0.0 0.070		Vel = 1.86	
19 to 20	42.5 42.5	14.00	57.91 79.1	2 2.157	T	12.307	109.800 12.307 122.107	120 0.0495	17.105 0.0 6.041		Vel = 6.94	
20			0.0 79.10						23.146		K Factor = 16.44	
4 to 30	42.5 42.5		33.85 33.85	2 2.157	T	12.307	35.670 12.307 47.977	120 0.0103	21.086 0.0 0.494		Vel = 2.97	
30 to 31	42.5 42.5		0.0 33.85	2 2.157			16.000 16.000	120 0.0103	21.580 0.0 0.165		Vel = 2.97	

AutoPeaking Summary

Auto Peaking Summary - List of Pipes for Area Calculated

Left Side			Right Side		
From	To	Length	From	To	Length
10	28	40.670	35	29	109.800
3	2	19.670	19	20	125.800
10	28	56.670	35	29	93.800
3	2	35.670	19	20	109.800

	Flow Required	Safety Margin	Pressure Differential	
Left	24.000	632.107	1.444	-0.035
Left	16.000	631.231	1.409	0.000
Left	8.000	630.431	1.426	-0.017
Area Calculated		629.678	1.497	-0.087
Right	8.000	628.949	1.623	-0.214

Typical Distance Between Heads = 8.000

Split Point Used in Worst Area Peaked = 9

Split Point Used in Area Calculated = 9

MIAMI-DADE COUNTY

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

<http://www.miamidade.gov/building/home.asp>

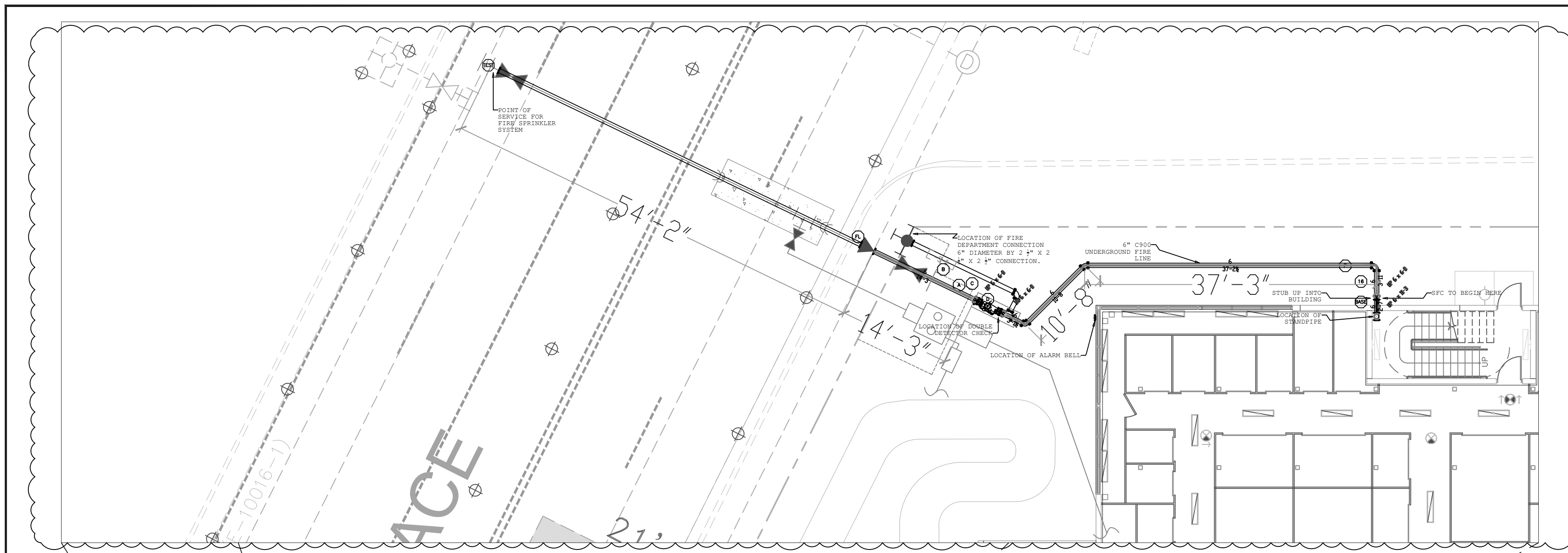
10/4/2024 3:31:52 PM

Contact Name: Christopher Johnson

Contact Email: OFFICE@SOUTHERNFIRECONTROL.COM

Tracking Number: 3224026378

Reviews to rework: FIRE



ENHANCED SITE PLAN
SCALE: 3/32" = 1'-0"

MAXIMUM HANGER SPACING (FT.)										
PIPE SIZE (IN.)	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8
THREADED LIGHTWALL STEEL PIPE	N/A	12	12	12	12	12	12	N/A	N/A	N/A
STEEL PIPE EXCEPT THREADED LIGHTWALL	N/A	12	12	15	15	15	15	15	15	15
CPVC	5'-6"	6	6'-6"	7	8	9	10	N/A	N/A	N/A

- NOTES:**
- MAXIMUM DISTANCE BETWEEN END UPRIGHT SPRINKLER AND LAST HANGER ON BRANCH LINES SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" OR LARGER PIPE SIZE. EXTEND BRANCH LINE AND PROVIDE ADDITIONAL HANGER WHERE REQUIRED. (12" MAXIMUM LENGTH FOR CEILING MOUNTED PENDENT SPRINKLERS)
 - MAXIMUM HORIZONTAL LENGTH OF AN UNSUPPORTED ARMORER TO A SPRINKLER, SPRINKLER DROP OR SPRIG-UP SHALL NOT EXCEED 24" (12" FOR CEILING MOUNTED SPRINKLERS)
 - MINIMUM DISTANCE BETWEEN A HANGER AND CENTERLINE OF AN UPRIGHT SPRINKLER TO BE 3".
 - WALL MOUNTED SIDEWALL SPRINKLERS SHALL BE RESTRAINED TO PREVENT MOVEMENT.
 - HANGERS FOR MAINS SHALL BE IN ACCORDANCE WITH SPACING TABLE ABOVE OR BETWEEN EACH BRANCHLINE, WHICHEVER IS THE LESSER DIMENSION.
 - HANGERS AT CEILING PENDENT END OF LINE SPRINKLERS SHALL PREVENT UPWARD MOVEMENT OF THE PIPE HANGERS AT ARMORERS TO CEILING PENDENT SPRINKLERS SHALL PREVENT UPWARD MOVEMENT OF THE PIPE. SPRINKLERS SHALL PREVENT UPWARD MOVEMENT OF PIPE.

- PROJECT NOTES**
- PROJECT NAME: STORQUEST SELF STORAGE - MIAMI LAKES
 - SPRINKLER SYSTEM SHALL BE IN FULL COMPLIANCE WITH APPLICABLE CODES INCLUDING BUT NOT LIMITED TO:
 - N.F.P.A. 13 2016 EDITION
 - FLORIDA FIRE PREVENTION CODE 7TH EDITION
 - ALL PIPING 1 1/4" AND LARGER CALCULATED AS SCHEDULE 10 THIN WALL WITH GROOVED FITTINGS.
 - ALL GRADE PIPING 1" AND SMALLER SHALL BE SCHEDULE 40 PIPE TYPE.
 - BUILDING IS BAR JOIST CONSTRUCTION (I BEAM METAL DECK)
 - HANGER TYPE AND SPACING SHALL BE IN ACCORDANCE WITH NFPA 13 2016.
 - STANDARD SPRAY SPRINKLERS USED 225 SQ. FT. LIGHT HAZARD AREAS AND 130 SQ. FT. ORDINARY HAZARD AREAS - EXTENDED COVERAGE SPRINKLERS AT 16' X 16' MAX
 - SQUARE FOOTAGE IS APPROXIMATELY 33,783 SQ. FT. PER LEVEL

FLOW TEST INFO

MIAMI DADE COUNTY - FIRE PREVENTION DEPARTMENT

DATE: 9/21/2023
 ADDRESS: NW 58 AVE + NW 165 TER
 HYDRANT #1 STATIC: 51 PSI
 RESIDUAL: 50 PSI

HYDRANT #2 GPM: 1324

DESIGN AREA REDUCTION USED PER NFPA 13 2016 SECTION 11.2.3.2.3.1

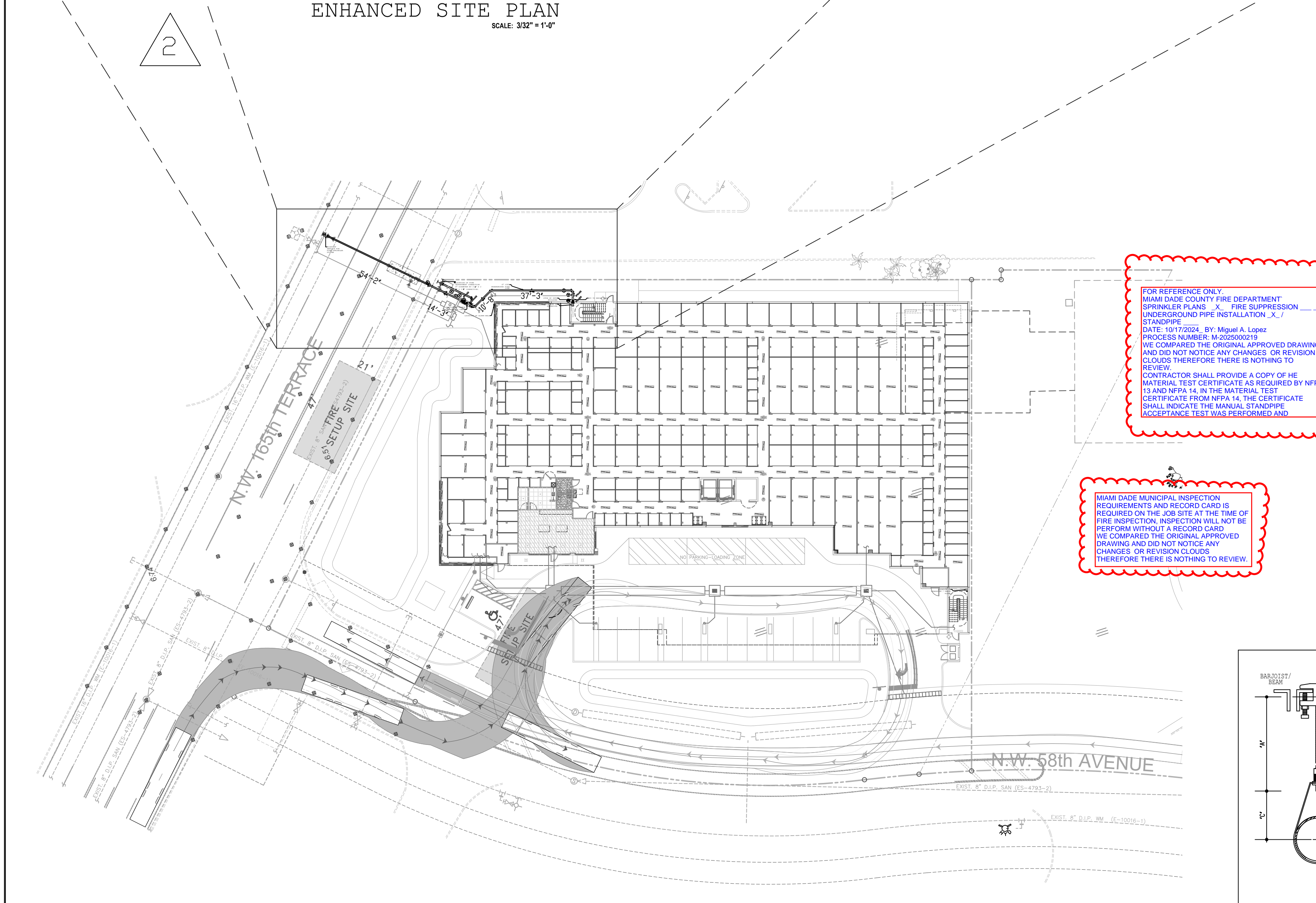
SCOPE OF WORK

INSTALL NEW WET FIRE SPRINKLER SYSTEMS ABOVE GROUND PER NFPA 13 2016 EDITION. SPRINKLER SYSTEM WILL BE UTILIZING EXTENDED COVERAGE AND STANDARD COVERAGE SPRINKLERS. SOUTHERN FIRE CONTROL TO START 1'-0" ABOVE GRADE AT UNDERGROUND STUB UP PIECE. 501 NEW SPRINKLERS.

SYSTEM RISERS TO BE INSIDE STAIRWELL WITH MANUAL WET STANDPIPE SYSTEM. REMOVE STANDPIPE WILL HAVE 2 (2") HOSE VALVES

AHJ NOTE:
CONTAINER STORAGE PROHIBITED PER DESIGN CRITERIA

RELOCATE/REROUTE LINE AND CONTROL VALVE FOR HEADS AT TOP OF ELEVATOR TO HALLWAY FOR ACCESSIBLE, ADDITION OF PENDANTS IN DISPLAY AREA'S HEADS (HIGH TEMP)



FIRE PROTECTION SITE PLAN
SCALE: 1/32" = 1'-0"

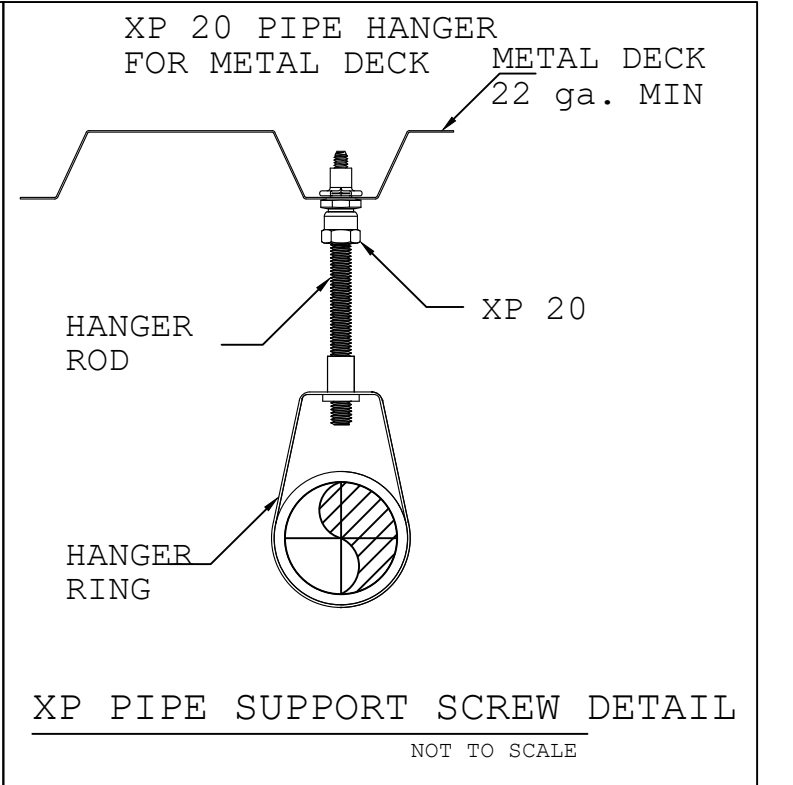
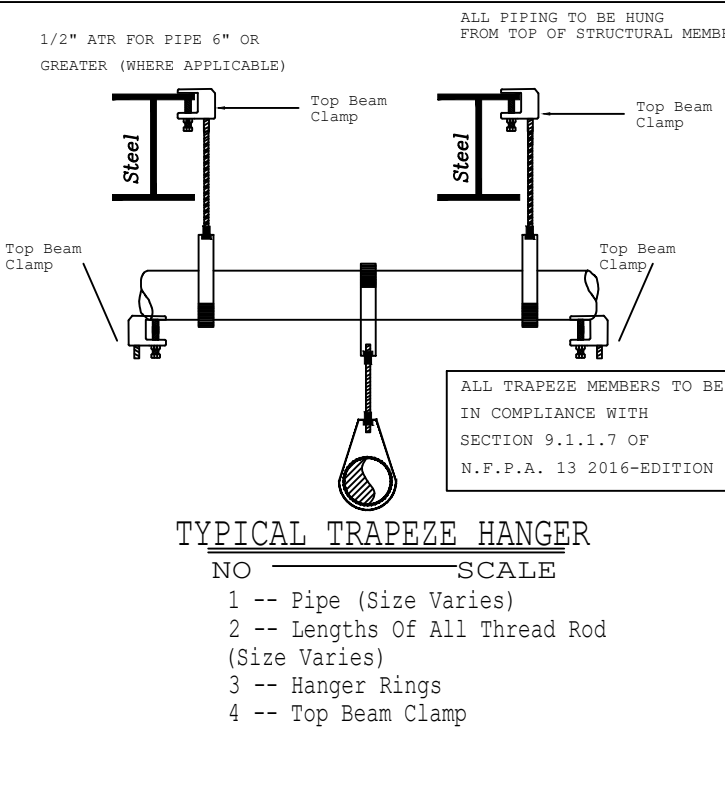
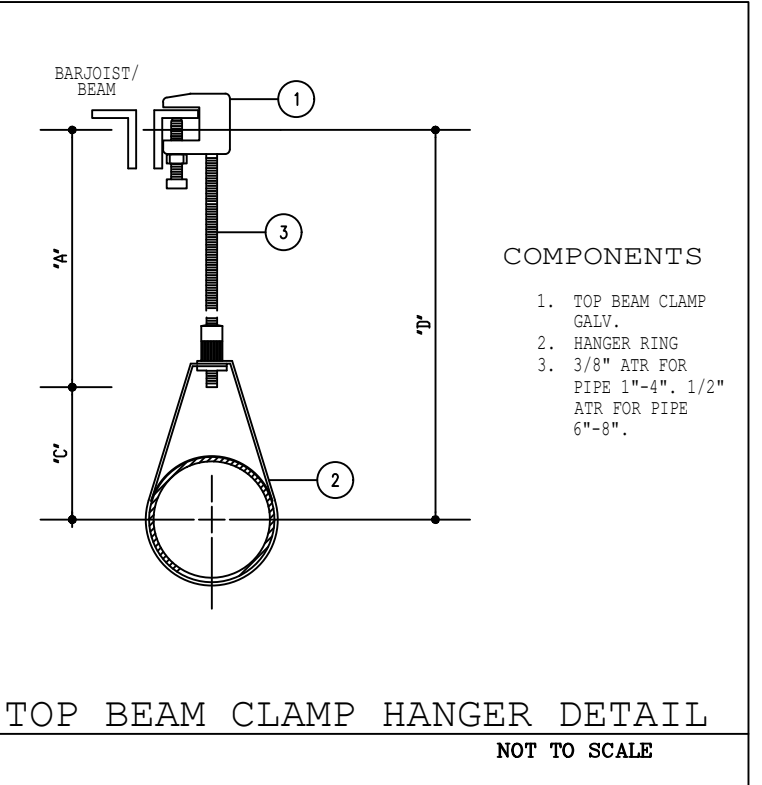
FOR REFERENCE ONLY.
MIAMI DADE COUNTY FIRE DEPARTMENT SPRINKLER PLANS X - FIRE SUPPRESSION UNDERGROUND PIPE INSTALLATION X - STANDPIPE
DATE: 10/17/2024. BY: Miguel A Lopez
PROCESS NUMBER: M-2025000219
WE COMPARED THE ORIGINAL APPROVED DRAWING AND DID NOT NOTICE ANY CHANGES OR REVISION CLOUDS THEREFORE THERE IS NOTHING TO REVIEW.
CONTRACTOR SHALL PROVIDE A COPY OF THE MATERIAL TEST CERTIFICATE AS REQUIRED BY NFPA 13 AND NFPA 14. IN THE MATERIAL TEST CERTIFICATE FROM NFPA 14, THE CERTIFICATE SHALL INDICATE THE MANUAL STANDPIPE ACCEPTANCE TEST WAS PERFORMED AND

MIAMI DADE MUNICIPAL INSPECTION REQUIREMENTS AND RECORD CARD IS REQUIRED ON THE JOB SITE AT THE TIME OF FIRE INSPECTION. INSPECTION WILL NOT BE PERFORMED WITHOUT A RECORD CARD WE COMPARED THE ORIGINAL APPROVED DRAWING AND DID NOT NOTICE ANY CHANGES OR REVISION CLOUDS THEREFORE THERE IS NOTHING TO REVIEW.

FIRE DEPARTMENT CONNECTIONS (EXISTING):
THE FIRE DEPARTMENT CONNECTION(S) SHALL USE AN NH INTERNAL THREADED SWIVEL FITTING(S) WITH AN NH STANDARD THREAD(S), WHERE AT LEAST ONE OF THE CONNECTIONS SHALL BE THE 2.5 NH STANDARD THREAD HOSE CONNECTIONS. WHERE LOCAL FIRE DEPARTMENT CONNECTIONS DO NOT CONFORM TO NFPA 1963, STANDARD FOR FIRE HOSE CONNECTIONS, THE AUTHORITY HAVING JURISDICTION SHALL BE PERMITTED TO DESIGNATE THE CONNECTION TO BE USED. THE USE OF THREADLESS COUPLINGS SHALL BE PERMITTED WHERE REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND WHERE LISTED FOR SUCH USE.
FIRE DEPARTMENT CONNECTIONS SHALL BE EQUIPPED WITH LISTED PLUGS OR CAPS, PROPERLY SECURED AND ARRANGED FOR EASY REMOVAL BY FIRE DEPARTMENTS. FIRE DEPARTMENT CONNECTIONS SHALL BE OF AN APPROVED TYPE.

SPRINKLERS:
GENERAL: ONLY NEW SPRINKLERS SHALL BE INSTALLED.
SPRINKLER IDENTIFICATION: ALL SPRINKLERS SHALL BE PERMANENTLY MARKED WITH A ONE- OR TWO-CHARACTER MANUFACTURER SYMBOL, FOLLOWED BY THREE OR FOUR NUMBERS, SO AS TO IDENTIFY A UNIQUE SPRINKLER IDENTIFICATION FOR EVERY CHANGE IN ORIFICE SIZE OR SHAPE, DEFLECTOR CHARACTERISTIC, PRESSURE RATING, AND THERMAL SENSITIVITY.

STOCK OF SPARE SPRINKLERS - LOCATED IN BUILDING:
A SUPPLY OF AT LEAST SIX SPARE SPRINKLERS (NEVER FEWER THAN SIX) SHALL BE MAINTAINED ON THE PREMISES SO THAT ANY SPRINKLERS THAT HAVE OPERATED OR BEEN DAMAGED IN ANY WAY CAN BE PROMPTLY REPLACED. THE SPRINKLERS SHALL CORRESPOND TO THE TYPES AND TEMPERATURE RATINGS OF THE SPRINKLERS IN THE PROPERTY. THE SPRINKLERS SHALL BE KEPT IN A CABINET LOCATED WHERE THE TEMPERATURE TO WHICH THEY ARE SUBJECTED WILL AT NO TIME EXCEED 135°F. WHERE DRY SPRINKLERS OF DIFFERENT LENGTHS ARE INSTALLED, SPARE DRY SPRINKLERS SHALL NOT BE REQUIRED, PROVIDED THAT A MEANS OF RETURNING THE SYSTEM TO SERVICE IS FURNISHED.
THE STOCK OF SPARE SPRINKLERS SHALL INCLUDE ALL TYPES AND RATINGS INSTALLED AND SHALL BE AS FOLLOWS:
(1) FOR PROTECTED FACILITIES HAVING UNDER 300 SPRINKLERS - NO FEWER THAN SIX SPRINKLERS
(2) FOR PROTECTED FACILITIES HAVING 300 TO 1000 SPRINKLERS - NO FEWER THAN 12 SPRINKLERS
(3) FOR PROTECTED FACILITIES HAVING OVER 1000 SPRINKLERS - NO FEWER THAN 24 SPRINKLERS
A SPECIAL SPRINKLER WRENCH SHALL BE PROVIDED AND KEPT IN THE CABINET TO BE USED IN THE REMOVAL AND INSTALLATION OF SPRINKLERS. ONE SPRINKLER WRENCH SHALL BE PROVIDED FOR EACH TYPE OF SPRINKLER INSTALLED. A MINIMUM OF TWO SPRINKLERS OF EACH TYPE AND TEMPERATURE RATING SHOULD BE PROVIDED.



- Valve Not Smaller than 3/4"
 - Nipple
 - Cap or Plug
- (at least one shall be brass)
- Auxiliary Drain

THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF SOUTHERN FIRE CONTROL (SFC). SFC IS NOT RESPONSIBLE FOR ANY MODIFICATIONS MADE TO THE TRANSMITTED INFORMATION CONTAINED HEREIN BY ANY PARTY OTHER THAN SFC. THEREFORE THE RECEIVING PARTIES AGREE TO HOLD HARMLESS AND INDEMNIFY SFC FROM ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, MISINTERPRETATIONS, MISUSE OR REUSE BY OTHERS OF INFORMATION PROVIDED HEREIN. THIS INDEMNIFICATION APPLIES WITHOUT LIMITATION TO ANY USE OF THIS INFORMATION NOT DIRECTLY RELATED TO THE ORIGINAL INTENT OF THE DRAWING. INFORMATION PROVIDED HEREIN SHALL BE IN WRITING AND MUST BE APPROVED BY THE FIRE SPRINKLER ENGINEER OF RECORD.

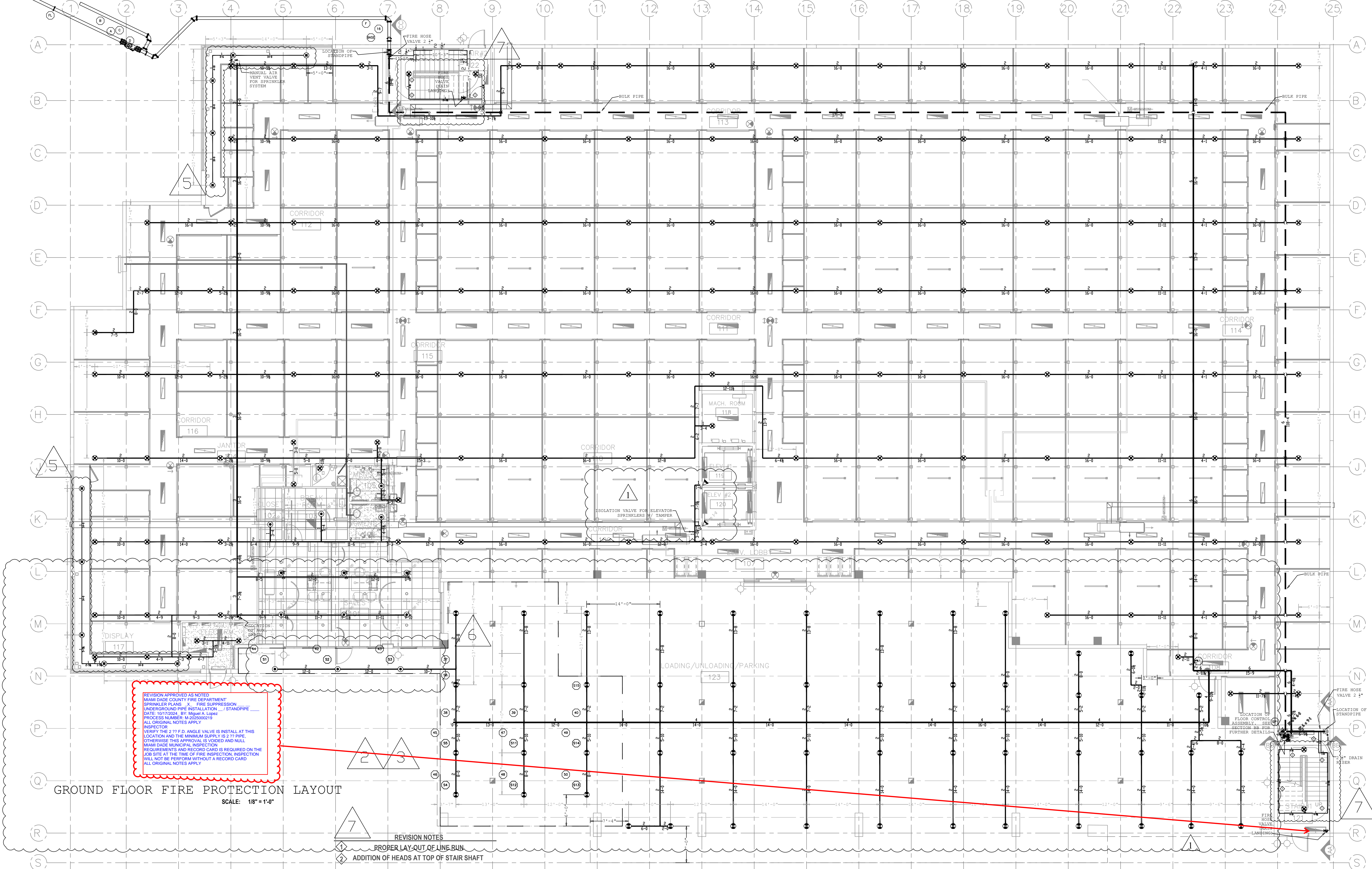
Date Time Stamp
LOPEZ, MIGUEL A. 10/17/2024 3:29:24 PM FIRE Reference Only.

SOUTHERN FIRE CONTROL, INC.
Fire Protection, Service & Inspections.

6861 S.W. 196 AVENUE BAY - 304
 PEMBROKE PINES, FL 33328
 CC # FPIC16-000016
 PHONE (954) 858-1600 FAX (954) 845-2718

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24
4	7/1/24	AS BUILT
5	7/9/24	AS NEW FIELD BUILD-OUT
6	7/23/24	AS PER NEW CEILING
7	9/6/24	AS PER PROPER INSTALL/UPDATES

SYMBOL	ACCIDENT	REVISION	REVISION	REVISION	REVISION	REVISION	REVISION	REVISION	REVISION	REVISION	
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
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FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
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FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
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FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
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FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
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FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
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FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH	NEW THROUGHOUT	FL-VS-FLEX	NEW THROUGHOUT	FL-ORSH	ELEVATOR/STAIRS	FL-ECON	DRIVE THRU/LOADING DOCK	FL-VING	DISPLAY AREA	FL-ORSH	REVISION
FL-ROCH											



GROUND FLOOR FIRE PROTECTION LAYOUT
SCALE: 1/8" = 1'-0"

REVISION APPROVED AS NOTED
MIAMI DADE COUNTY FIRE DEPARTMENT
SPRINKLER PLANS - FIRE SUPPRESSION
UNDERGROUND PIPE INSTALLATION - STANDPIPE
DATE: 10/17/2024 BY: Miguel A. Lopez
PROCESS NUMBER: N202400218
ALL ORIGINAL NOTES APPLY
INSPECTOR:
VERIFY THE 2 1/2" A.N.G.L.E VALVE IS INSTALL AT THIS
LOCATION AND THE MINIMUM SUPPLY IS 2 1/2" PIPE.
OTHERWISE THIS APPROVAL IS VOIDED AND NULL
MIAMI DADE MUNICIPAL INSPECTION
REQUIREMENTS AND RECORD CARD IS REQUIRED ON THE
JOB SITE AT THE TIME OF FIRE INSPECTION. INSPECTION
WILL NOT BE PERFORM WITHOUT A RECORD CARD
ALL ORIGINAL NOTES APPLY

REVISION NOTES
1 PROPER LAY-OUT OF LINE RUN
2 ADDITION OF HEADS AT TOP OF STAIR SHAFT

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Date Time Stamp
LOPEZ, MIGUEL A. 10/17/2024 3:38:44 PM FIRE Approved As Noted

SOUTHERN FIRE CONTROL, INC.
Fire Protection, Service & Inspections.
6861 S.W. 196 AVENUE BAY - 304
BROOKLINE, FL 33325
Phone: (954) 858-1600 FAX: (954) 845-2716
Trade Stamp Name

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24
4	7/1/24	AS BUILT
5	7/9/24	AS NEW FIELD BUILD-OUT
6	7/23/24	AS PER NEW CEILING
7	9/6/24	AS PER PROPER INSTALL/UPDATES

SYMBOL	DESCRIPTION	NOTES
(Symbol)	NEW THROUGHOUT	
(Symbol)	NEW THROUGHOUT	
(Symbol)	ELEVATOR/STAIRS	
(Symbol)	DRIVE THRU/LOADING DOOR	
(Symbol)	DISPLAY AREA	

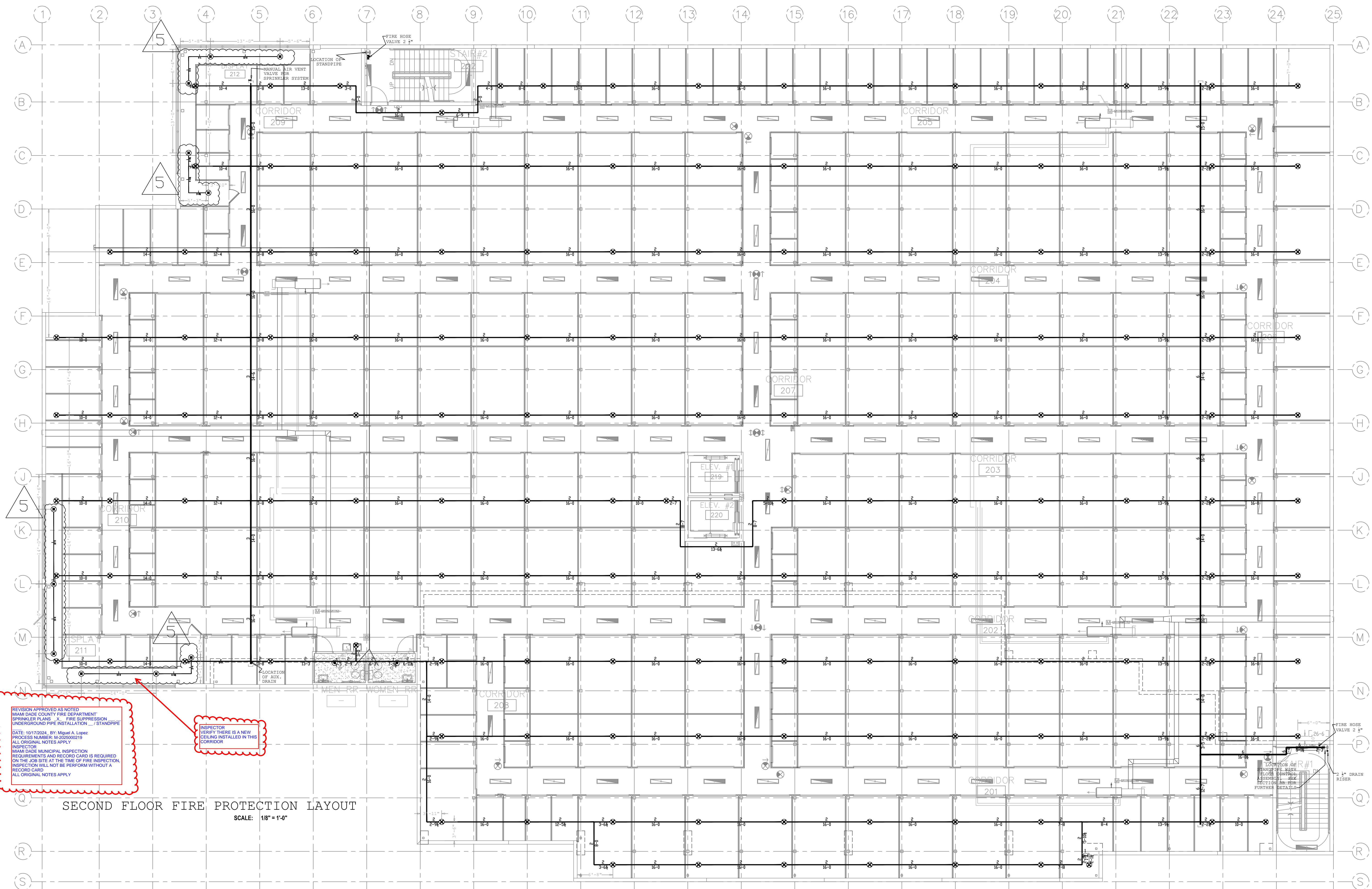
SYMBOL	DESCRIPTION	NOTES
(Symbol)	NEW THROUGHOUT	
(Symbol)	ELEVATOR/STAIRS	
(Symbol)	DRIVE THRU/LOADING DOOR	
(Symbol)	DISPLAY AREA	

SYMBOL	DESCRIPTION	NOTES
(Symbol)	NEW THROUGHOUT	
(Symbol)	ELEVATOR/STAIRS	
(Symbol)	DRIVE THRU/LOADING DOOR	
(Symbol)	DISPLAY AREA	

Digitally signed by
Wayne Markham Bennett
Date: 2024.09.16
Current Date: 11:41:20 -04'00'
Wayne Markham Bennett P.E. #57216
Markham Services, Inc. (CA 33016)
1820 N.E. Jensen Beach Blvd #685
Jensen Beach, Florida 34957
(954) 818-3825
wayne@wmb-pe.com

STOREQUEST MIAMI LAKES
5790 NW 165TH TERRACE,
MIAMI LAKES, FL 33014

PERMIT NO.
JOB NO.
APPROVAL MIAMI DADE COUNTY
DESIGNED BY FDG
SCALE NOTED
DATE 10/3/2023
TOTAL HEAD COUNT THIS AREA 203
FP-2 of 5



SECOND FLOOR FIRE PROTECTION LAYOUT
SCALE: 1/8" = 1'-0"

REVISION APPROVED AS NOTED
MIAMI DADE COUNTY FIRE DEPARTMENT
SPRINKLER PLANS - FIRE SUPPRESSION
UNDERGROUND PIPE INSTALLATION / STANDPIPE
DATE: 10/17/2024 BY: Miguel A. Lopez
PROCESS NUMBER: M-2024000219
ALL ORIGINAL NOTES APPLY
INSPECTOR
MIAMI DADE MUNICIPAL INSPECTION
REQUIREMENTS AND RECORD CARD IS REQUIRED
ON THE JOB SITE AT THE TIME OF FIRE INSPECTION.
INSPECTION WILL NOT BE PERFORM WITHOUT A
RECORD CARD
ALL ORIGINAL NOTES APPLY

INSPECTOR
VERIFY THERE IS A NEW
CEILING INSTALLED IN THIS
CORRIDOR

THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF SOUTHERN FIRE CONTROL, INC. SFC IS NOT RESPONSIBLE FOR ANY MODIFICATIONS MADE TO THE TRANSMITTED INFORMATION CONTAINED HEREIN BY ANY PARTY OTHER THAN SFC. THEREFORE THE RECEIVING PARTIES AGREE TO HOLD HARMLESS AND INDEMNIFY SFC FROM ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, MISINTERPRETATIONS, MISUSE OR REUSE BY OTHERS OF INFORMATION PROVIDED HEREIN. THIS NOTIFICATION APPLIES WITHOUT LIMITATION TO ANY USE OF THIS INFORMATION NOT DIRECTLY SUPERSEDED OR REVISED BY SFC. ANY USE OF THIS INFORMATION WITHOUT THE WRITTEN PERMISSION OF SFC IS PROHIBITED. THIS DOCUMENT IS THE PROPERTY OF SFC AND MUST BE RETURNED TO SFC UPON REQUEST. APPROVED BY THE FIRE SPRINKLER ENGINEER OF RECORD.

SOUTHERN FIRE CONTROL, INC.
Fire Protection, Service & Inspections.
6861 S.W. 196 AVENUE BAY - 304
PEMBROKE PINES, FL 33325
PHONE (954) 858-1600 FAX (954) 845-2718

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24
4	7/1/24	AS BUILT
5	7/9/24	AS NEW FIELD BUILD-OUT
6	7/23/24	AS PER NEW CEILING
7	9/6/24	AS PER PROPER INSTALL/UPDATES

SYMBOL	DESCRIPTION	QUANTITY
⊗ <td>NEW THROUGHOUT</td> <td>153</td>	NEW THROUGHOUT	153
⊙ <td>NEW THROUGHOUT</td> <td>2</td>	NEW THROUGHOUT	2

SYMBOL	DESCRIPTION	QUANTITY
⊗ <td>NEW THROUGHOUT</td> <td>153</td>	NEW THROUGHOUT	153
⊙ <td>NEW THROUGHOUT</td> <td>2</td>	NEW THROUGHOUT	2

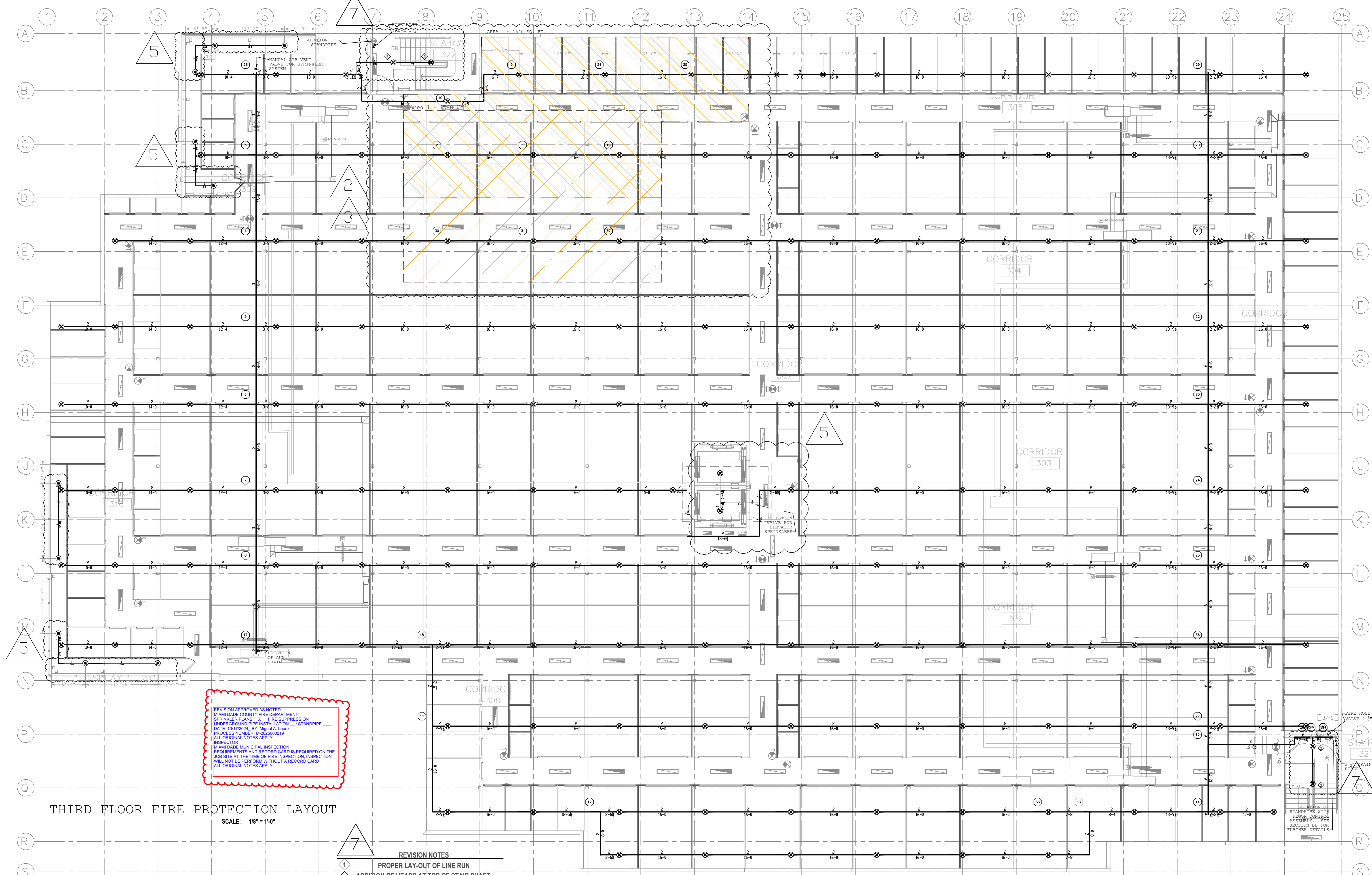
SYMBOL	DESCRIPTION	QUANTITY
⊗ <td>NEW THROUGHOUT</td> <td>153</td>	NEW THROUGHOUT	153
⊙ <td>NEW THROUGHOUT</td> <td>2</td>	NEW THROUGHOUT	2

Digitally signed by
Wayne Markham Bennett
Date: 2024.09.16
11:41:50 -04'00
Current Date

Wayne Markham Bennett P.E.#57216
Markham Services, Inc. (CA 30016)
1020 N.E. Jensen Beach Blvd #605
Jensen Beach, Florida 34857
(954) 816-3825
wayne@wmb-pe.com

STOREQUEST MIAMI LAKES
5790 NW 165TH TERRACE,
MIAMI LAKES, FL 33014

PERMIT NO.	
JOB NO.	
APPROVAL	FDG
DESIGNED BY	
SCALE	NOTED
DATE	10/3/2023
TOTAL HEAD COUNT THIS AREA	166



THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF SOUTHERN FIRE CONTROL, INC. (SFC). SFC IS NOT RESPONSIBLE FOR ANY MODIFICATIONS MADE TO THE TRANSMITTED INFORMATION CONTAINED HEREIN BY ANY PARTY OTHER THAN SFC. THEREFORE THE RECEIVING PARTIES AGREE TO HOLD HARMLESS AND INDEMNIFY SFC FROM ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, MISINTERPRETATIONS, MISUSE OR REUSE BY OTHERS OF INFORMATION PROVIDED HEREIN. THIS INDEMNIFICATION APPLIES WITHOUT LIMITATION TO ANY USE OF THIS INFORMATION NOT DIRECTLY RELATED TO THE PROJECT FOR WHICH IT WAS PROVIDED. THE INFORMATION CONTAINED HEREIN SHALL BE IN MATING AND MUST BE APPROVED BY THE FIRE SPRINKLER ENGINEER OF RECORD.

Examined
LOPEZ, MIGUEL A. 10/17/2024 3:48:28 PM FIRE Approved As Noted

SOUTHERN FIRE CONTROL, INC.
Fire Protection, Service & Inspections.

6861 S.W. 196 AVENUE BAY - 304
PEMBROKE PINES, FL 33325
Phone (954) 858-1600 FAX (954) 845-2718

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24
4	7/1/24	AS BUILT
5	7/9/24	AS NEW FIELD BUILD-OUT
6	7/23/24	AS PER NEW CEILING
7	9/6/24	AS PER PROPER INSTALL/UPDATES

<p>FL-ECH 1 1/2" X 1/4" 155 UNO MAX SPACING OF 256 16X16"</p> <p>BRASS</p> <p>UPRIGHT</p> <p>V3425</p> <p>CONCEALED</p> <p>STANDARD RESPONSE</p> <p>158</p>	<p>FL-VS2-FLEX 1 1/2" X 3/8" 155 UNO MAX SPACING OF 256 16X16"</p> <p>WHITE</p> <p>PENDENT</p> <p>V3204</p> <p>CONCEALED</p> <p>QUICK RESPONSE</p> <p>158</p>	<p>FL-ORISW 1 1/2" X 3/8" 155 UNO MAX SPACING OF 256 16X16"</p> <p>BRASS</p> <p>SIDEWALL</p> <p>V2710</p> <p>CONCEALED</p> <p>QUICK RESPONSE</p> <p>158</p>	<p>FL-ORISW 1 1/2" X 3/8" 155 UNO MAX SPACING OF 256 16X16"</p> <p>BRASS</p> <p>SIDEWALL</p> <p>V2710</p> <p>CONCEALED</p> <p>QUICK RESPONSE</p> <p>158</p>
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Digitally signed by
Wayne Markham Bennett
Date: 2024.09.16
11:42:18 -0400

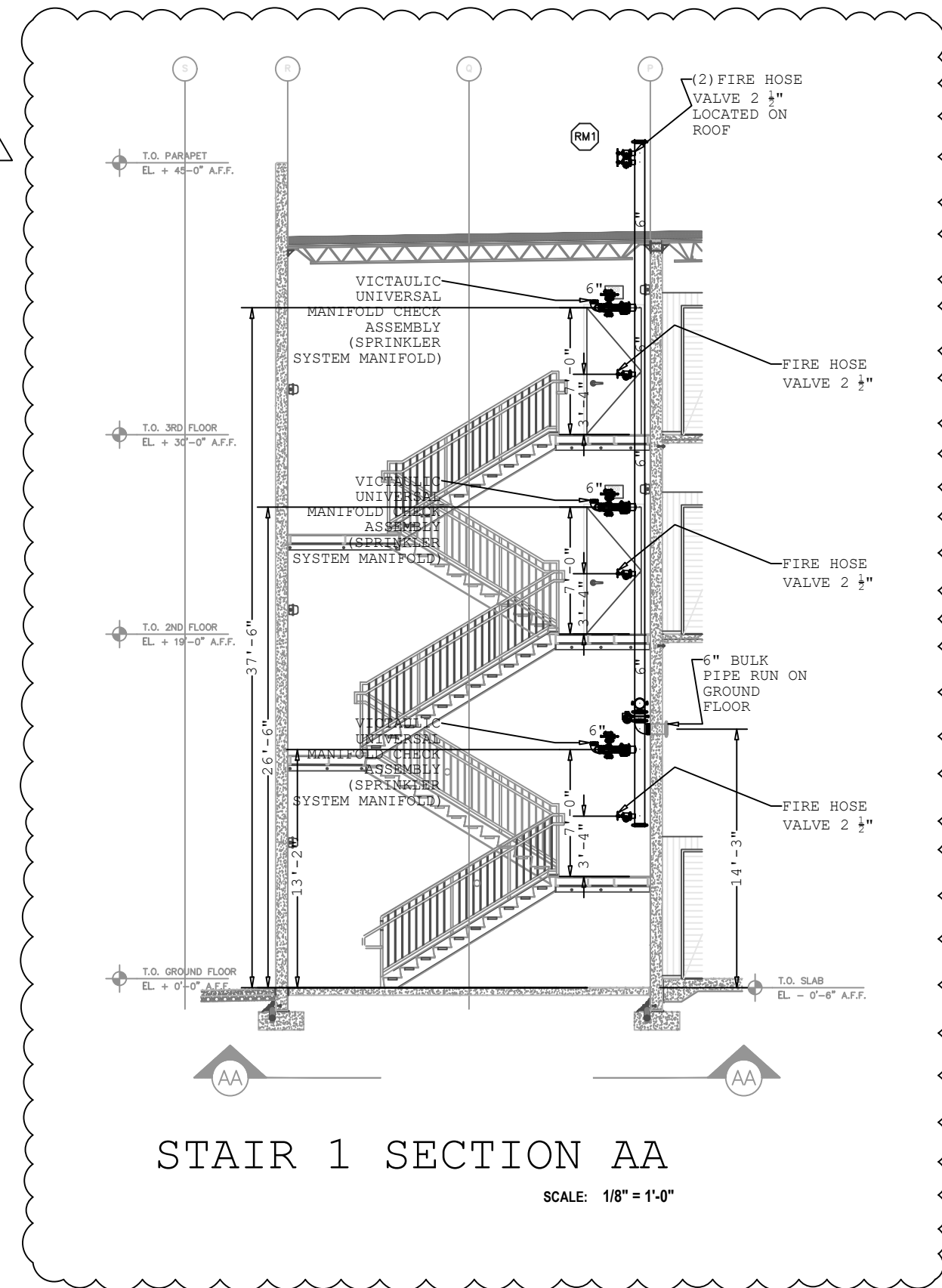
Wayne Markham Bennett P.E.#27216
Markham Services, Inc. (CA 33018)
1620 N.E. Jensen Beach Blvd #686
Jensen Beach, Florida 34957
(854) 818-3825
wayne@wmb-pe.com

STATE OF FLORIDA
PROFESSIONAL ENGINEER

STOREQUEST MIAMI LAKES
5790 NW 165TH TERRACE,
MIAMI LAKES, FL 33014

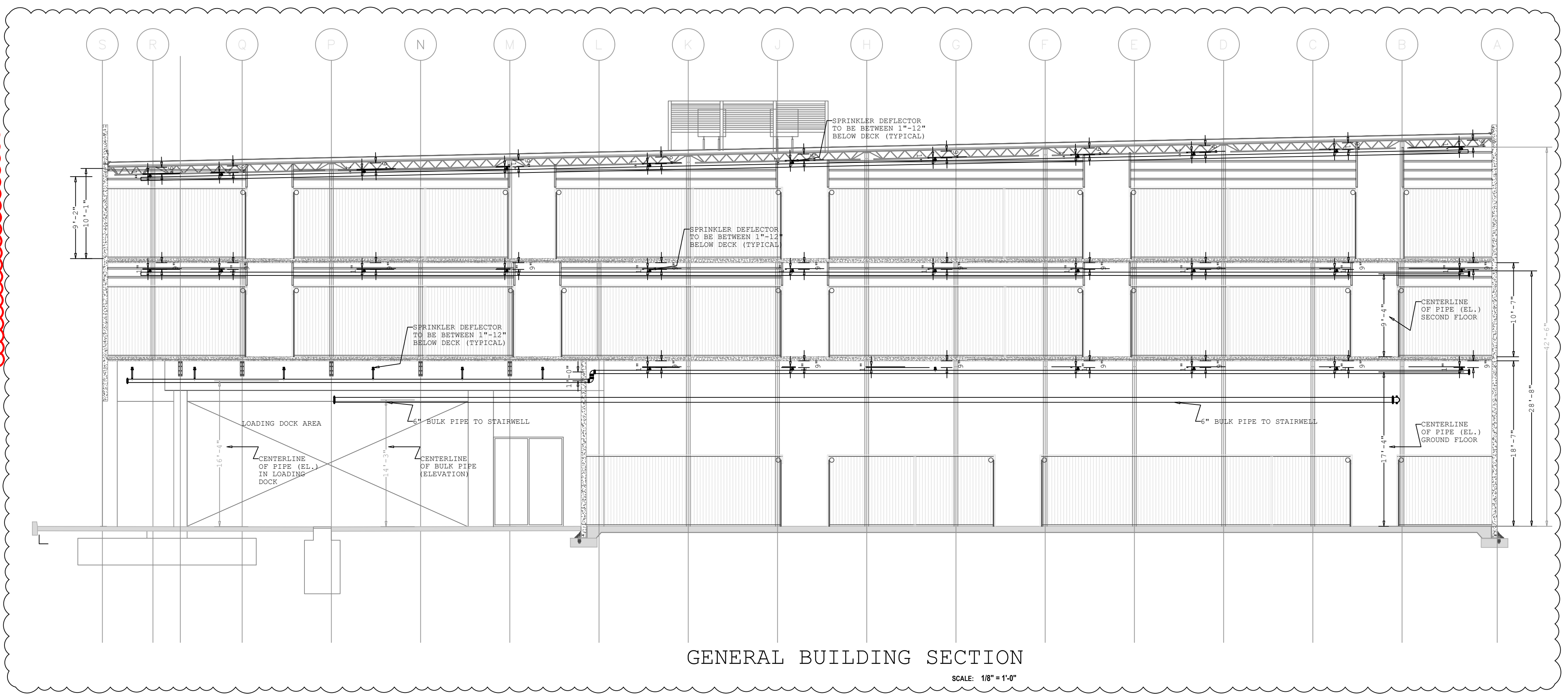
PERMIT NO.	
JOB NO.	
APPROVAL	FDG
SCALE	NOTED
DATE	10/9/2023
TOTAL HEAD COUNT THIS AREA	168

FP-4 of 5

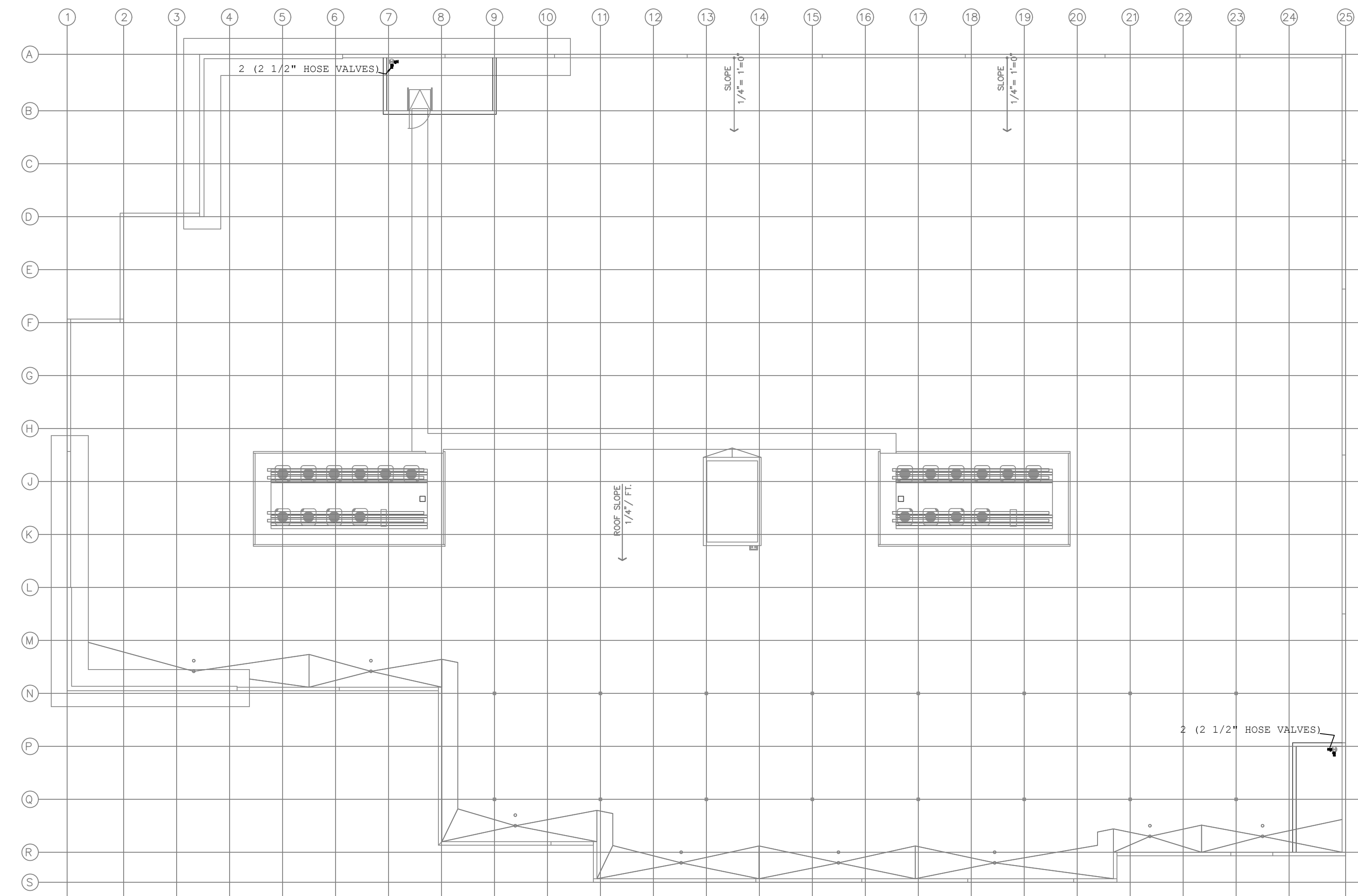


STAIR 1 SECTION AA
SCALE: 1/8" = 1'-0"

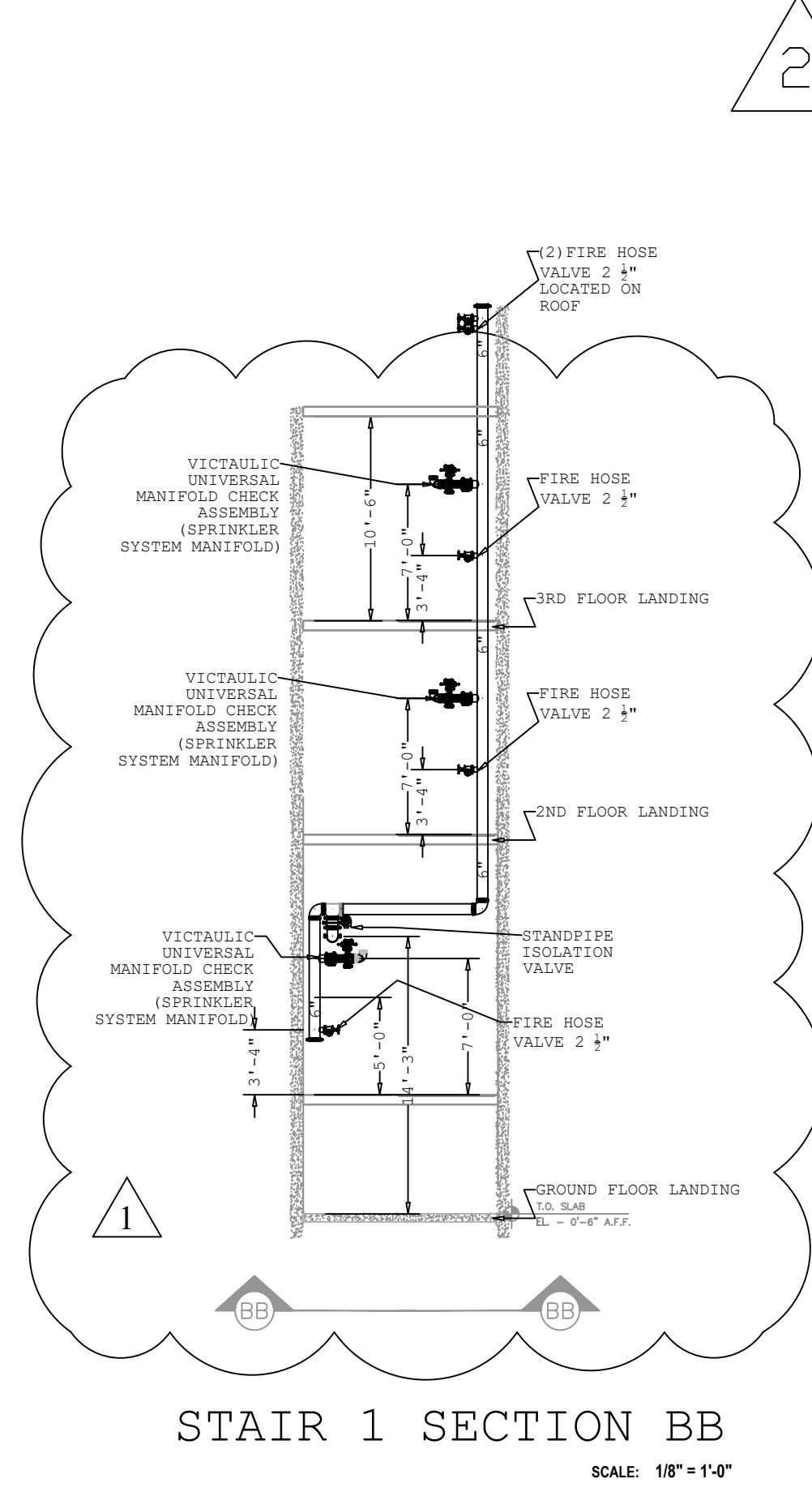
FOR REFERENCE ONLY
MIAMI DADE COUNTY FIRE DEPARTMENT
SPRINKLER PLANS - X - FIRE SUPPRESSION
UNDERGROUND PIPE INSTALLATION - X -
STANDPIPE
DATE: 10/17/2024 BY: Miguel A Lopez
PROCESS NUMBER: M-2025000219
WE COMPARED THE ORIGINAL APPROVED DRAWING
AND DID NOT NOTICE ANY CHANGES OR REVISION
CLOUDS THEREFORE THERE IS NOTHING TO
REVIEW.
CONTRACTOR SHALL PROVIDE A COPY OF THE
MATERIAL TEST CERTIFICATE AS REQUIRED BY
NFPA 13 AND NFPA 14. THE CERTIFICATE
SHALL INDICATE THE MANUAL STANDPIPE
ACCEPTANCE TEST WAS PERFORMED AND
ACCEPTED.
MIAMI DADE MUNICIPAL INSPECTION
REQUIREMENTS AND RECORD CARD IS REQUIRED
ON THE JOB SITE AT THE TIME OF FIRE INSPECTION.
INSPECTION WILL NOT BE PERFORM WITHOUT A
RECORD CARD
WE COMPARED THE ORIGINAL APPROVED DRAWING
AND DID NOT NOTICE ANY CHANGES OR REVISION



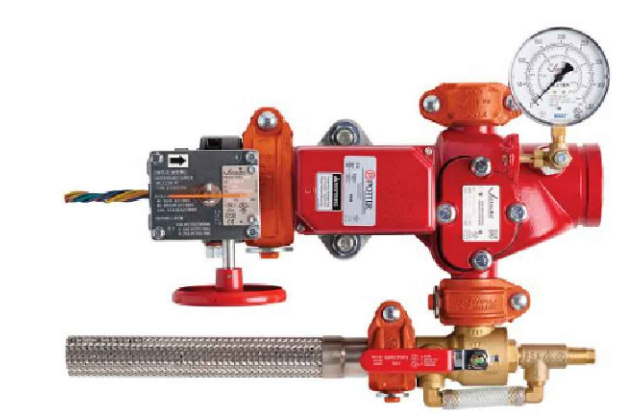
GENERAL BUILDING SECTION
SCALE: 1/8" = 1'-0"



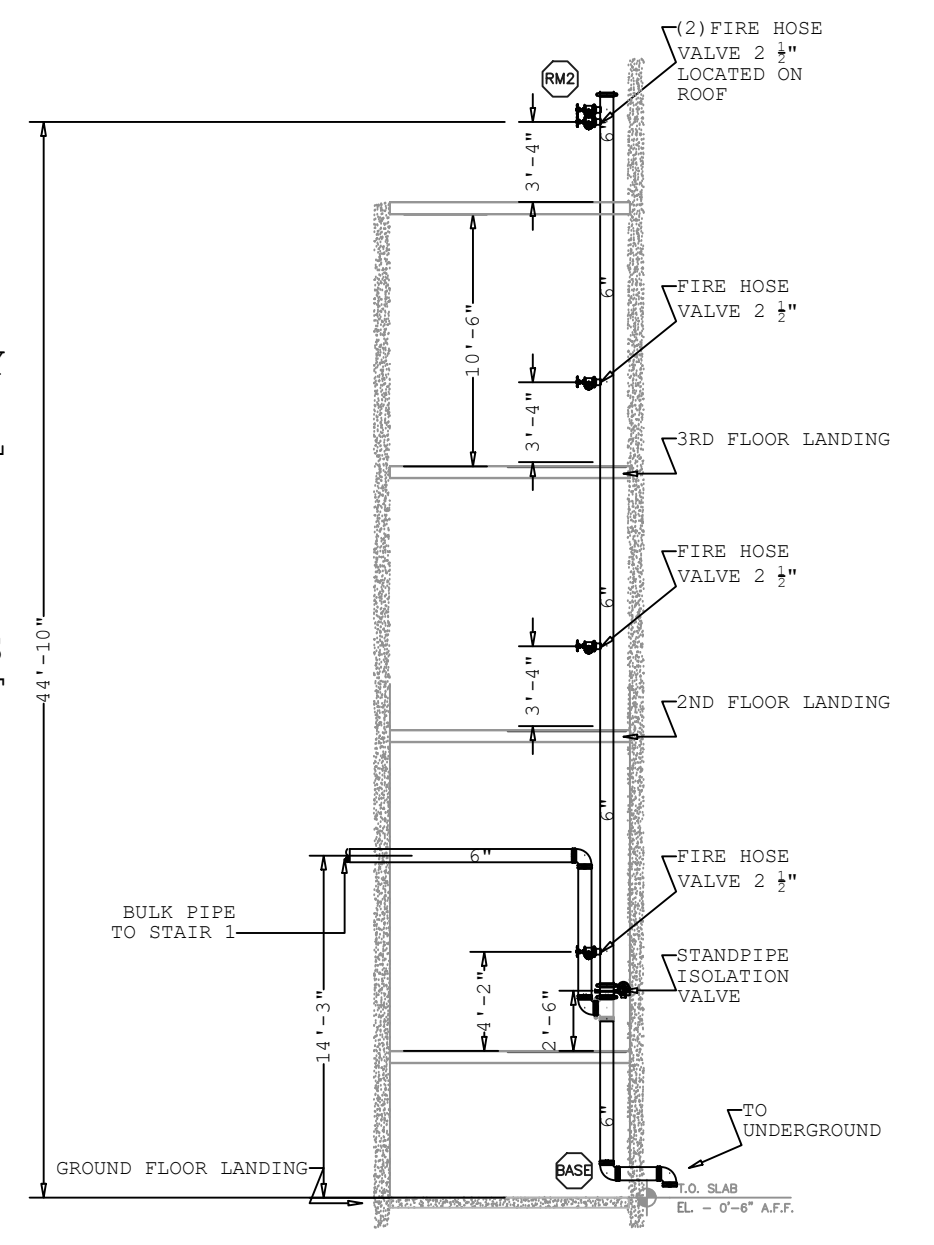
ROOF PLAN
SCALE: 1/16" = 1'-0"



STAIR 1 SECTION BB
SCALE: 1/8" = 1'-0"



SERIES UMC UNIVERSAL MANIFOLD CHECK ASSEMBLY
UMC UNIT INTEGRATES ALL NECESSARY COMPONENTS PER NFPA 13: CONTROL VALVE, CHECK VALVE, FLOW SWITCH, UNIVERSAL TEST AND DRAIN | SERIES UTD, ADJUSTABLE RELIEF VALVE | SERIES ARV, FLEXIBLE DRAIN HOSE, AND GAUGES.



STAIR 2 SECTION CC
SCALE: 1/8" = 1'-0"

THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF SOUTHERN FIRE CONTROL, INC. (SFC). SFC IS NOT RESPONSIBLE FOR ANY MODIFICATIONS MADE TO THE TRANSMITTED INFORMATION CONTAINED HEREIN BY ANY PARTY OTHER THAN SFC. THEREFORE THE RECEIVING PARTIES AGREE TO HOLD HARMLESS AND INDEMNIFY SFC FROM ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, MISINTERPRETATIONS, MISUSE OR REUSE BY OTHERS OF INFORMATION PROVIDED HEREIN. THIS INDEMNIFICATION APPLIES WITHOUT LIMITATION TO ANY USE OF THIS INFORMATION NOT DIRECTLY SUPPLIED OR REVIEWED BY SFC. ANY USE OF THIS INFORMATION FOR ANY OTHER PURPOSE THAN THAT FOR WHICH IT WAS PROVIDED SHALL BE AT THE USER'S SOLE RISK. APPROVED BY THE FIRE SPRINKLER ENGINEER OF RECORD.

SOUTHERN FIRE CONTROL, INC.
Fire Protection, Service & Inspections.
6861 S.W. 196 AVENUE BAY - 304
PEMBROKE PINES, FL 33325
CC # PFC16-000016
PHONE (954) 858-1600 FAX (954) 845-2718
Trade Stamp Name

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/ UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24
4	7/1/24	AS BUILT
5	7/9/24	AS NEW FIELD BUILD-OUT
6	7/23/24	AS PER NEW CEILING
7	9/6/24	AS PER PROPER INSTALL/ UPDATES

SYMBOL	DESCRIPTION	QUANTITY	REMARKS
[Symbol]	VICI-AULIC NEW THROUGHOUT	439	QUICK RESPONSE
[Symbol]	VICI-AULIC NEW THROUGHOUT	15	QUICK RESPONSE
[Symbol]	VICI-AULIC ELEVATOR / STAIRS	2	QUICK RESPONSE
[Symbol]	DISPLAY AREA	31	STANDARD RESPONSE
[Symbol]	DRIVE THRU / LOADING DOCK	50	STANDARD RESPONSE

Digitally signed by
Wayne Markham Bennett
Date: 2024.09.16
17:42:42 -0400
Wayne Markham Bennett P.E.#57216
Markham Services, Inc. (CA 33018)
1820 N.E. Jensen Beach Blvd #888
Jensen Beach, Florida 34957
(954) 818-3825
wayne@wmb-pe.com

STOREQUEST MIAMI LAKES
5790 NW 165TH TERRACE,
MIAMI LAKES, FL 33014

PERMIT NO.	
JOB NO.	
APPROVAL	
DESIGNED BY	FDG
SCALE	NOTED
DATE	10/3/2023
TOTAL HEAD COUNT THIS AREA	537

FP-5 of 5

MIAMI-DADE COUNTY

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

<http://www.miamidade.gov/building/home.asp>

10/21/2024 2:57:27 PM

Tracking #	Process #	Permit #
3224026378	M2024026378	2024031100

THIS COPY OF PLANS MUST BE AVAILABLE ON BUILDING SITE OR AN INSPECTION WILL NOT BE MADE.

Process #	Review	Disposition	Reviewer	Date
M2024026378	FIRE	A	LOPEZ, MIGUEL A.	10/17/2024
M2024026378	UPFRONT FEES	A	WEB APPLICATION ID	9/24/2024

Disclaimer.

Subject to compliance with all Federal, State, and County Laws, rules and regulations. Miami-Dade County assumes no responsibility for accuracy of or results of these plans.

NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to the property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies or federal agencies.

Stamp Name	Trade	Disposition	Stamp Description
Approved As Noted	FIRE	P	Approved as noted. See comments, markups and stamps.
Reference Only.	FIRE	R	Reference only.



FIRE ENGINEERING & WATER SUPPLY BUREAU
11805 SW 26 ST. MIAMI. FL. 33175 TELEPHONE (786) 315-2771

FIRE REVIEW DISAPPROVAL COMMENTS

DATE: OCTOBER 4, 2024

REVIEWED BY: Miguel A. Lopez
N.I.C.E.T Certification # 95355
Certification Valid through 11/01/2024
Water-Base Systems Layout, Level IV

PROCESS NUMBER: C-2024026378

CONTRACTOR: SOUTHERN FIRE CONTROL

NAME OF PROJECT: STORE QUEST

ADDRESS: 5790 NW 165th TERR. MIAMI LAKES. FLORIDA

NOTES

FOR QUESTIONS, CONCERNS, OR CLARIFICATION ON DISAPPROVAL COMMENTS, YOU MUST SCHEDULE A **20 MINUTES DESIGN PROFESSIONAL APPOINTMENT**. APPOINTMENTS ARE HELD ON MONDAYS & THURSDAYS ONLY. APPOINTMENTS MAY BE SCHEDULED THE PREVIOUS WORKING DAY OF THE APPOINTMENT BETWEEN THE HOURS OF 8:30AM AND 4:30PM BY CALLING 786-315-2771 OR LOGGING IN TO WWW.MIAMIDADE.GOV/BUILDING PLEASE KNOW THE REVIEWER'S NAME AND DADE COUNTY PROCESS # OR FIRE TRACKING #. (**"THESE APPOINTMENTS ARE NOT PART OF THE REVIEW"**)

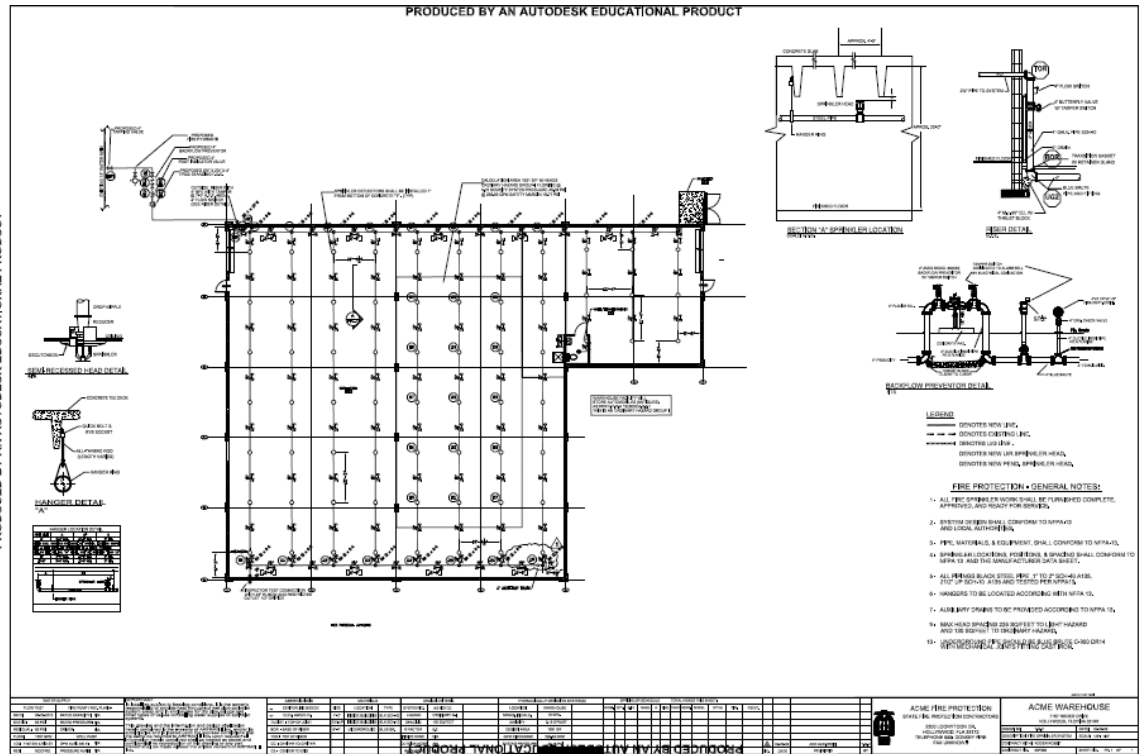
IN AN EFFORT TO EXPEDITE THE REVIEW PROCESS, YOU ARE **REQUIRED** TO SUBMIT (2) SET OF CORRECTED SHOP DRAWINGS ALONG WITH LETTER OF RESPONSE ADDRESSING EACH ITEM. PLEASE ITEMIZE YOUR RESPONSES TO CORRESPOND WITH EACH ONE OF THE NUMBERED REQUEST LISTED BELOW. IN YOUR RESPONSE LETTER, INDICATE THE CORRECTION MADE AND ON WHAT PAGE IT CAN BE FOUND OR ACKNOWLEDGE COMPLIANCE WITH THE REQUEST OR INDICATE REASON FOR NOT COMPLYING WITH REQUEST. ALL CORRECTIONS MUST BE CLOUDED ON THE CORRECTED PLANS SHEETS. SUBMIT ALL CORRECTIONS IN ONE PACKAGE. NON-COMPLIANCE WITH REQUEST WILL RESULT IN AN AUTOMATIC REJECTION OF YOUR REVISED SUBMITTAL.

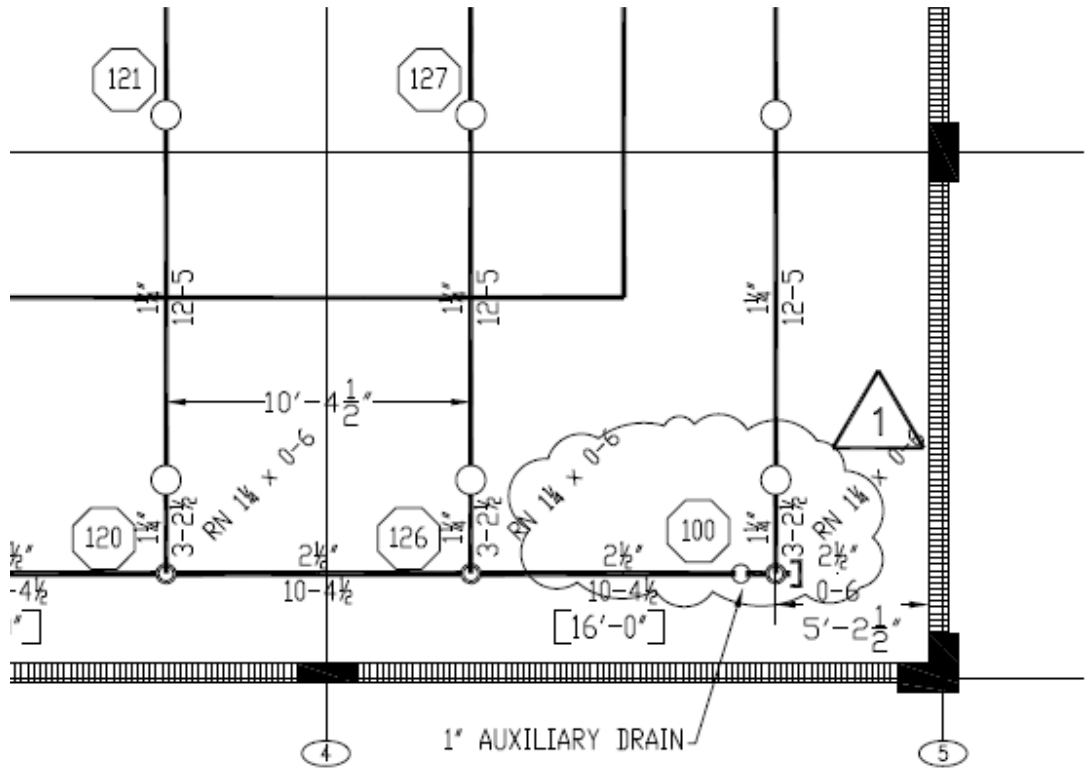
ALL SHOP DRAWINGS SUBMITTED FOR REVIEW TO MIAMI-DADE FIRE PREVENTION DIVISION SHALL COMPLY WITH THE MINIMUM REQUIREMENTS OF NFPA 13 2019 SECTION 27.1.1, 27.1.2, 27.1.3, 27.1.4, 27.4.3 AND 27.4.4, NFPA 20, 2019, SECTION 4.2.3, 4.2.3.1 AND 4.3.3 AND 4.3.4. NFPA 14, 2019, CHAPTER 8

PLANS SUBMITTED FOR THE ABOVE REFERENCED PROCESS NUMBER HAVE BEEN REVIEWED. WE ARE UNABLE TO APPROVE THIS PERMIT APPLICATION AT THIS TIME FOR THE REASON(S) INDICATED BELOW.

NOTES:

1. PLANS SUBMITTED WITH THE REFERENCE PERMIT HAVE BEEN REVIEWED. WE ARE UNABLE TO APPROVE THIS PERMIT APPLICATION AT THIS TIME FOR THE REASON(S) INDICATED BELOW.
2. RESPONSE SHEET IS REQUIRED OR NO REVIEW WILL BE ATTEMPTED.
3. NOW THAT WE ARE REVIEWING THE SHOP DRAWING IN PDF FORMAT, AND WE ARE USING A VERY LIMITED PROGRAM, IT WILL BE APPRECIATED IF A CAD IN 2011 FORMAT AND THE STRUCTURAL AND ARCHITECTURAL DRAWINGS IN PDF FORMAT IS E-MAIL TO ME, SO I WILL NOT DISAPPROVED A SHOP DRAWING DUE TO MISSING DIMENSIONS, CEILING HEIGHT OR STRUCTURAL OBSTRUCTION.
MY E-MAIL IS malopez@miamidade.gov
4. THE FOLLOWING INFORMATION SHALL BE PROVIDED FOR "AS BUILT OR REVISION"
 - a. THE APPROVED SHOP DRAWING USED FOR THE FIELD INSPECTION WITH THE INSPECTOR'S COMMENTS.
 - b. WITHOUT THE ORIGINAL APPROVED, STAMPED SHOP DRAWING WITH THE FIELD INSPECTOR'S COMMENTS A REVIEW WILL NOT BE PERFORM**
 - c. IN THE DRAWING TITLE BLOCK A DETAILED DESCRIPTION OF THE CHANGE SHALL BE PROVIDED; "PER INSPECTOR'S COMMENTS" IS NOT A DETAIL DESCRIPTION OF THE CHANGE AND IT IS NOT ACCEPTABLE. **SUBMIT A COPY OF THE FIELD INSPECTOR REPORT.**
 - d. THE REVISED AREA SHALL BE CLOUDED AND IDENTIFIED WITH A REVISION NUMBER AND A BRIEF DESCRIPTION OF THE CHANGE SHALL BE PROVIDED IN THE TITLE BLOCK.
REVIEW THE FOLLOWING EXAMPLE





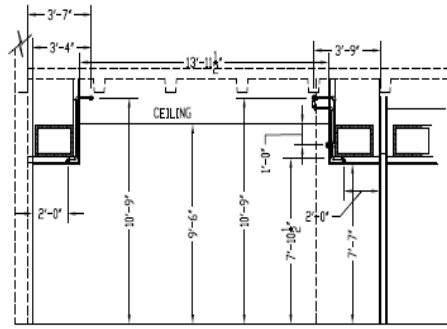
10- UNDERGROUND PIPE SHOULD BE BLUE BRUTE C-900 DR14 WITH MECHANICAL JOINTS FITTING CAST IRON.

ESCUT.					ACME FIRE PROTECTION STATE FIRE PROTECTION CONTRACTORS 2300 LOONYTOON DR. HOLLYWOOD, FLA 33172 TELEPHONE 888- DONKEY FIRE FAX UNKNOWN #		ACME WAREHOUSE 7157 RODEO DRIVE HOLLYWOOD, FLORIDA 331XX	
					DRAWN BY: T.G.V. DESCRIPTION: FIRE SPRINKLER SYSTEM CONTRACT WITH: ROGER ROBBIT	DATE: 02-09-09 SCALE: 1/8"= 1'-0" CONTRACT NO. 09F569		
NO.	DATE	REVISIONS	BY			SHEET NO. FP-1 OF 1		

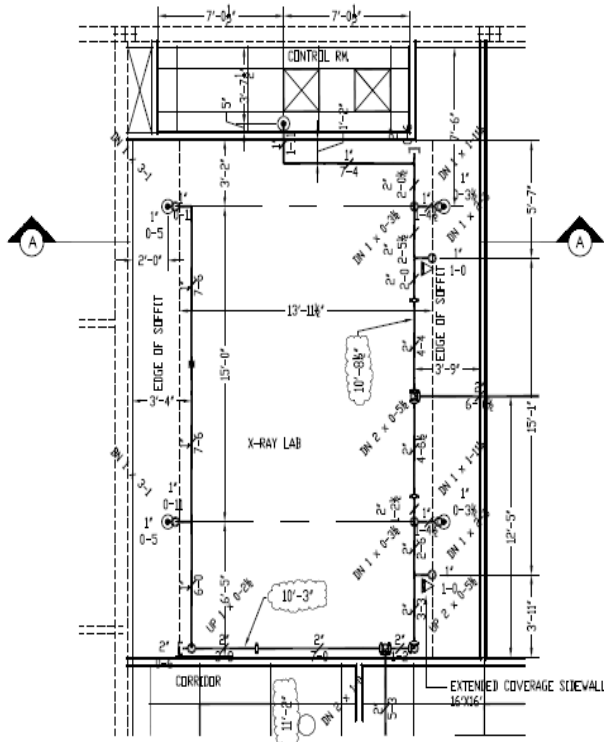
- e. ALL REVISION SHALL BE DATED.
- f. IF THE REVISION AFFECTS THE ORIGINAL DESIGN CRITERIA HYDRAULIC CALCULATIONS SHALL BE PROVIDED

5. ***ALL SPRINKLERS SHALL BE LOCATED IN RELATION TO THE WALLS, SOFFITS AND BETWEEN SPRINKLERS WITH DIMENSIONS AS PER NFPA 13 2007 EDITION SECTION 3.2.2; THE REASON FOR THIS REQUIREMENT IS THAT THE FIELD INSPECTORS ARE NOT ABLE TO SCALE SHOP DRAWINGS IN THE FIELD AND TO PREVENT MISUNDERSTANDING WHEN CHECKING THE SPRINKLER AREA OF COVERAGE.***

13-2019: 3.2.2 Authority Having Jurisdiction (AHJ). The organization, office, or individual responsible for approving equipment, material, an installation, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, material, an installation, or a **Procedure**
REVIEW THE FOLLOWING EXAMPLE.



SECTION A-A
SCALE 1/8"=1'-0"



6. THE AS BUILT DRAWING SHALL COMPLY WITH THE FIELD INSPECTOR COMMENTS.
7. WE ARE CHARGING HE MINIMUM FEE ALLOWED BY MIAMI DADE FIRE ENGINEERING, WE WILL CHARGE A COMPLETE FEE AFTER WE ARE ABLE TO PERFORM A THROUGH REVIEW.
8. THIS REVIEW SHALL BE CONSIDERED INCOMPLETE PENDING RECEIPT OF ADDITIONAL INFORMATION. SUBSEQUENT REVIEW(S) MAY REVEAL ADDITIONAL DEFICIENCIES.
9. RETURN PLANS FOR A DROP OFF FULL REVIEW



Miami-Dade Fire Rescue Fire Sprinkler Pre-Submittal Checklist



Revised January 30th, 2015 Process #

Project Name:

1	<i>All submitted shop drawings for review shall be accompanied by the Miami-Dade Fire Rescue approved life safety shop drawings, set of architectural and structural. The sprinkler shop drawing shall be reviewed and documented approved by the engineer of record per FAC 61G15-32-001</i>	YES	NO	N/A	LOCATION/ COMMENTS
2	When revamping existing sprinkler systems provide a copy of the previously MDRF approved shop drawing (micro film) other wise it will be an automatic disapproval.				
3	For general information "Review and approval by the authority having jurisdiction shall not relive the applicant of the responsibility of compliance with the current Florida Fire Prevention code. See the Florida Fire Prevention Code 5 th Edition, Section 1-14.4				
4	Submit two sets of plans completely assembled and correlated. The title block shall indicate the project's name and address. The name, license number, and address of the fire protection contractor shall be provided as well. All sheets shall be secured and shall be numbered consecutively. The shop drawings shall comply with the minimum requirements of NFPA 13, 2010 Edition, Section 22.1.3 or it will be an automatic disapproval.				
5	Rework plans submitted for review shall be provided with previous disapproved plans, comment sheets and accompanied with the responses to our comments in letterform or no review will be attempted. Rework drawings without the original approved shop drawings will be an automatic disapproval.				
6	In the general notes, a detailed description of the scope of work and a detailed description of how the design criteria was determined shall be provided or no review will be attempted.				
7	All shop drawings shall be submitted from licensed fire protection contractors only; we will not review conceptual drawings from architects or engineers. Drawings shall illustrate a detailed fire protection system. The pipe and sprinklers shall be located in relation to the walls, columns and obstructions or no review will be attempted. The elevation of the sidewall sprinklers shall be clearly indicated on the shop drawing, an elevation range is not acceptable, and plans are reviewed for obstructions.				
8	In the general notes, indicate if the occupancy was changed; if the occupancy was changed, identify the areas.				
9	The site plan shall provide the following information: 1-location of the FDC, it shall not be closer than 40 ft. from the building or 150 Ft from a hydrant as required by Miami- Dade Fire Marshall. 2- Location of the P.I.V and backflow preventer. The location shall be indicated on the drawing with dimensions; it shall not be closer than 40 Ft from the building and the drawing shall clearly indicate the invert elevation of the underground pipe.				
10	Each hydraulic calculation report shall be accompanied by a Miami-Dade Fire Rescue hydrant flow test dated no more than 12 months from the date the project is submitted for review. The hydrant flow test shall be for the exact address or it will not be accepted. The hydraulic calculation report shall comply with NFPA 13, 2010 Edition, Sections 22.3 and 22.4.				
11	Fire protection systems with 50 sprinklers or more shall be signed and sealed by a FL, P.E. The P.E stamp or seal shall be located next to the title block.				
12	Provide a symbol legend and complete sprinkler schedule including the manufacturer ID (sin) number and amount of each sprinkler used and <u>total number used in the project.</u>				
13	Check the current Florida Fire Prevention Code for the current NFPA standards used for review.				
14	All Contractors' shop drawings shall comply with the chapter named "Plans and Calculations" of NFPA 13 (Current Edition)				
15	All shop drawings shall indicate ceiling heights, soffit elevations, light locations, structural member sizes, structural member elevations and locations of any duct that will interfere with the sprinkler spray. Drawings without this information will be automatically disapproved.				
16	Storage or mercantile projects shall be submitted with an owners' certificate as required by NFPA 13 and original Engineer of Record approved documentation as required by Florida Administrative Code 61G15-32.004.				
17	Sprinklers shall be located in accordance with the NFPA 13 standard or the manufacturer requirements. Attention shall be given to the obstruction rules required by the NFPA standard or the manufacturer specifications.				
18	Check the area of coverage for the sprinkler type used on the project, check the sprinkler location especially next to walls, and review the submitted manufacture's literature. Failure to provide manufacturer literature will be an automatic disapproval. NFPA 13-2010; 8.5.2				
19	All sprinkler systems shall be provided with flushing connections. Branch lines in grid system shall be provided with flushing connections between the cross mains, preferably close to the secondary cross main.				
20	When relocating sprinklers from existing outlets less than one (1) inch in diameter, hydraulic calculations are required per NFPA 13-2010; 8.15.19.4.3.				
21	When relocating sprinklers from hydraulically calculated systems and the system is supplied by city water only, hydraulic calculations shall be provided as per NFPA 13-2010; 8.15.19.5.				
22	If flex heads are proposed, hydraulic calculations are required. The contractor shall indicate on the drawing the length of the flex connection and its equivalent length.				
23	When using flex heads, documentation shall be provided from the ceiling contractor the new or existing ceiling was installed according to ASTM C635 and ASTM C636; the documentation shall be incorporated on the shop drawing i.e.; mechanically reproduced				
24	All control valves shall be electronically supervised as required by NFPA 1 and 101 of the Florida Fire Prevention Code.				



Miami-Dade Fire Rescue Fire Sprinkler Pre-Submittal Checklist



#	Requirement	YES	NO	N/A	
25	The minimum drawing size Miami-Dade Fire Rescue Department will accept for review is architectural size "D"; 24" x 36" and minimum scale shall be 1/8" = 1'-0"				
26	A local water flow alarm shall be provided on all sprinkler systems as required by NFPA 13; the bell or strobe shall be located on the same side where the F.D.C is located.				
27	When installing a pressure sustaining valve, pressure reducing valve or main check valve, an indicating valve shall be installed on both sides of the valve as required by NFPA 13-2010; 8.16.1.1.4. A pressure gauge shall be provided on both sides of the valve.				
28	Pressure reducing valves shall comply with NFPA 13 and NFPA 14 requirements.				
29	A pressure-reducing valve chart shall be incorporated in the shop drawing. The chart shall indicate the inlet and outlet static pressure, the inlet and outlet residual pressure and the residual flow.				
30	Dry pendent sprinklers shall be connected to straight tees as required by the manufacturer requirements.				
31	The reduction of hydraulically most demanding area due to the use of quick response sprinklers only applies to chapter 11 (Occupancy Chapter); review the exceptions before applying the rule.				
32	When drain connections located at each floor are tied into a common drain riser, the drain riser shall be one pipe size larger than the largest size drain specified by NFPA 13-2010; 8.16.2.4.7.				
33	The pocket rule is now addressed for residential sprinklers. Comply with NFPA 13-2010; 8.10.8 where ceiling pockets are present.				
34	Fire department connection shall not be connected to the suction side of a fire pump. See NFPA 13.				
35	Means shall be provided downstream of the backflow preventer valves for flow testing at system demand (see NFPA 13 2010; 8.17.4.6.1). A blind flange on the system side of the backflow preventer is not acceptable.				
36	Steel pipe shall not be used for general underground use per NFPA 13.				
37	NFPA 13; 2010 Section 8.1.1 (1), assumes that the premises is fully sprinklered, therefore, the feed main is protected. NFPA 14, 2010, section 6.1.2.2, requires protection for feed mains				
38	Hydraulic calculations shall be provided for manual standpipes. A sign shall be provided by the F.D.C with the system demand (NFPA 14-2010 Section 6.7) and shall be field tested per NFPA 14, 2010; 11.5.2.				
39	Standpipe systems are required for buildings over 30 feet high or buildings more than 2 stories unsprinklered and over 3 stories where sprinklered.				
40	Trapeze hangers shall comply with NFPA 13-2010. A detail shall be provided in the shop drawing and all member sizes and lengths shall be indicated in the detail.				
41	All pipes shall be supported from the top steel. If the contractor decides to support the pipe from the bottom of the structure, submit a letter from the structural engineer stating this method of supporting the pipe is acceptable in accordance with Chapter 9.				
42	For general storage NFPA 13, chapter 12 only applies to roof slope 2/12 (16.7%) or less. For non-storage applications, if the slope exceeds 2/12, (16.7%) the area shall be increased 30%				
43	The contractor shall describe in detail how the design criteria was determined and it shall be incorporated in the general notes.				
44	Where exterior occupiable areas exist under roofs referred as balconies, canopies, terraces or lanais that exceed 55sq. ft., sprinklers may be required. See 13; 8.15.7.5 and consult with the AHJ.				
45	On a combined standpipe and sprinkler system, an individual control valve and check valve shall be provided as per NFPA 14				
46	A listed indicating valve shall be provided at the Standpipe for controlling branch lines for remote hose stations. See NFPA 14				
47	The contractor shall submit fire pump manufacturer literature and it shall indicate clearly the rated capacity of the fire pump and the <u>churn pressure</u> .				
48	When the relief valve discharges to the suction side of the fire pump, the contractor shall verify that all pipes, fittings, valves, backflow prevention devices, underground pipe and fittings are rated to the pressure that the relief valve will discharge.				
49	NFPA 20-2010 does not address in-line vertical pumps, however when designing in-line vertical fire pumps consult manufacturer requirements for the suction side pipe, some manufacturers require 6 times the diameter of straight pipe				

EMAIL: Office @ SouthernFireControl.com

****PLEASE NOTE: MIAMI DADE COUNTY WILL NOT PERFORM ANY REVIEWS UNTIL THE UP-FRONT FEES HAVE BEEN PAID TO THEM****

NOTE: ALL SHEETS MUST BE REVIEWED

MIAMI-DADE COUNTY DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

Herbert S. Saffir Permitting and Inspection Center

11805 SW 26th Street (Coral Way) • Miami, Florida 33175-2474 • (786) 315-2000

APPLICATION FOR MUNICIPAL PERMIT APPLICANTS

THAT REQUIRE PLAN REVIEW FROM MIAMI-DADE FIRE RESCUE

AND/OR ENVIRONMENTAL SERVICES

M2024026378

SME 2024-2343

3224026378

PROVIDE MUNICIPAL PROCESS NUMBER HERE SME 2023-3299

LOCATION OF IMPROVEMENTS	Job Address <u>5790 NW 16th Terrace</u>	CONTRACTOR INFORMATION	Contractor No. <u>FPC16-00018</u>
	Folio <u>32-2013-001-0058</u>		Last four (4) digits of Qualifier No. <u>5558</u>
	Lot _____ Block _____		Contractor Name <u>Southern Fire Control</u>
	Subdivision _____ PBpg. _____		Qualifier Name <u>Christopher Johnson</u>
	Metes and bounds _____		Address <u>6861 SW 196th Ave</u>
			City <u>Pembroke Pines</u> State <u>FL</u> Zip <u>33332</u>
TYPE OF IMPROVEMENTS	<input checked="" type="checkbox"/> New Construction on Vacant Land	<input type="checkbox"/> Demolish	Current use of property <u>Vacant Land/Can Construction Site</u>
	<input type="checkbox"/> Alteration Interior	<input type="checkbox"/> Shell Only	Description of Work <u>Renovate Fire Sprinkler layout</u>
	<input type="checkbox"/> Alteration Exterior	<input type="checkbox"/> Addition Attached	Sq. Ft. _____ Units _____ Floors _____
	<input type="checkbox"/> Relocation of Structure	<input type="checkbox"/> Addition Detached	Value of Work <u>276,500</u>
	<input type="checkbox"/> Enclosure	<input type="checkbox"/> Re-Roof	
	<input type="checkbox"/> Repair	<input type="checkbox"/> Foundation Only	
	<input type="checkbox"/> Repair Due to Fire	<input type="checkbox"/> Tent	
PERMIT TYPE	<input type="checkbox"/> MBLD* Category _____	REVIEW STATUS	<input type="checkbox"/> Chg. Contractor
	<input type="checkbox"/> MELE _____		<input type="checkbox"/> Re-Issue
	<input type="checkbox"/> MPLU _____		<input type="checkbox"/> Re-Stamp
	<input type="checkbox"/> MLPG _____		<input checked="" type="checkbox"/> Revision
	<input type="checkbox"/> MMEC _____		<input type="checkbox"/> Not Applicable for Fire
	<input checked="" type="checkbox"/> FIRE <u>32</u>		
PERSON TO PICK UP PLANS	Name <u>Zachary Norris</u>	ARCHITECT / ENGINEER	Owner _____
	Address <u>6861 SW 196th Ave</u>		Address _____
	City <u>Pembroke Pines</u> State <u>FL</u> Zip <u>33332</u>		City _____ State _____ Zip _____
	Phone <u>754-257-2937</u>		Phone _____
FIRE SPECIAL REQUEST PLAN REVIEW (SRI)	<i>I am requesting a Special Request Plan Review (SRI) to be scheduled as soon as possible. There is a minimum charge of one-hour. Please contact the Fire Department for current rate.</i>		
	1 st Request: _____	Date: _____	
	2 nd Request: _____	Date: _____	
	3 rd Request: _____	Date: _____	
If the applicant is a known named violator with: unpaid civil penalties; unpaid administrative costs of hearing; unpaid County investigative, enforcement, testing, or monitoring costs; or unpaid liens, any or all of which are owed to Miami-Dade County pursuant to the provisions of the Code of Miami-Dade County, Florida, a hold on the review may be placed on this application.			

Miami-Dade Department of Regulatory and Economic Resources CONTACT INFORMATION FOR PERMIT APPLICATION

FIRST NAME <i>(print clearly)</i> Christopher	LAST NAME <i>(print clearly)</i> Johnson
MOBILE PHONE	OFFICE/HOME PHONE 954 - 858 - 1600
EMAIL <i>(required so you can be notified on the status of your plans)</i> Office@SouthernFireControl.com	

COMMENTS *(If you are submitting a municipal plan, please provide the municipal process number(s) and ensure the municipal application is in the office set of plans.)*

Miami-Dade County - 2024031100
Miami Lakes - SME2023-3299

PLANS *(check all that apply)*

Please indicate if plans qualify for the following expedited plan reviews:

GOV'T PROJECT/DEPT _____
 GREEN BLDG* *(new construction only)*
 PACE PROJECT*
 AFFORDABLE/WORKFORCE HOUSING*
 ECONOMIC SIGNIFICANCE*
 CONCIERGE

*(*Pursuant to Ordinance 99-140; Ordinance 05-115; and Ordinance 08-51. Project may have additional requirements.)*

Further, under the penalty of perjury, I, being first duly sworn, depose and say that I have read the foregoing application and that the facts stated herein are accurate and true, including any boxes checked. I further acknowledge that this application and affidavit is subject to penalties of perjury, and acknowledge that Miami-Dade County reserves the right to revoke, cancel, void, or suspend, any permit issued pursuant to any application that contains any materially false or fraudulent statements, and acknowledge that continued operation of the uses after the permit is revoked, canceled, voided, or suspended, may subject me to enforcement penalties allowed by law. I further acknowledge that any application that contains any materially false or fraudulent statements may subject me to additional permitting fees including fees for expedited plan review services.

REQUESTED PLAN REVIEWS *(check all that apply for rework only)*

<input type="checkbox"/> ALL	<input type="checkbox"/> BLDG/HCAP	<input type="checkbox"/> ELEC	<input type="checkbox"/> ENRG	<input checked="" type="checkbox"/> FIRE	<input type="checkbox"/> ROOF
<input type="checkbox"/> LANDSCAPING	<input type="checkbox"/> MECH	<input type="checkbox"/> PLUM	<input type="checkbox"/> PWKS	<input type="checkbox"/> PWCC	<input type="checkbox"/> SIGN
<input type="checkbox"/> STRU	<input type="checkbox"/> ZNPR	<input type="checkbox"/> WASD	<input type="checkbox"/> PWIF	<input type="checkbox"/> LPGX	<input type="checkbox"/> SHOP DRAWING
<input type="checkbox"/> DERM CORE	<input type="checkbox"/> DERM AIR	<input type="checkbox"/> DERM AIRPORT	<input type="checkbox"/> DERM ASBESTOS	<input type="checkbox"/> DERM COASTAL	<input type="checkbox"/> DERM FLOOD
<input type="checkbox"/> DERM GREASE	<input type="checkbox"/> DERM INDUSTRIAL	<input type="checkbox"/> DERM PAVING & DRAINAGE	<input type="checkbox"/> DERM POLLUTION	<input type="checkbox"/> DERM PRE-TREATMENT	<input type="checkbox"/> DERM SOLID WASTE
<input type="checkbox"/> DERM TANKS	<input type="checkbox"/> DERM TREES	<input type="checkbox"/> DERM WATER TREATMENT	<input type="checkbox"/> DERM WETLANDS	<input type="checkbox"/> PERMIT BY AFFIDAVIT CHECK	<input type="checkbox"/> SHORT TERM EVENT AFFIDAVIT CHECK
<input type="checkbox"/> DOH/HRS	<input type="checkbox"/> DERM OSTD				

OPTIONAL PLAN REVIEWS *(check all that apply)*

BLDG
 ELEC
 MECH
 PLUM
 STRU

OPR DERM INITIAL REVIEWS *(check all that apply)*

DERM CORE
 DERM SPECIALTY *(You will be notified after core review is complete for additional fees)*

OPR DERM REWORK *(OPR for specialty only available at PIC)*

<input type="checkbox"/> TREE	<input type="checkbox"/> GREASE	<input type="checkbox"/> ASBESTOS	<input type="checkbox"/> COASTAL	<input type="checkbox"/> AIR	<input type="checkbox"/> PAVING & DRAINAGE
<input type="checkbox"/> TANKS	<input type="checkbox"/> INDUSTRIAL	<input type="checkbox"/> WETLAND	<input type="checkbox"/> PRE-TREATMENT	<input type="checkbox"/> CORE	<input type="checkbox"/> FLOOD

FOR OFFICE USE ONLY *(to be completed by Permitting Staff)*

APPLICATION DATE	CLERK NAME	ARRIVAL TIME
PROCESS NUMBER	PROCESS NUMBER	PROCESS NUMBER
<input type="checkbox"/> RE-ISSUE	<input type="checkbox"/> PLAN REVISION	<input type="checkbox"/> REWORK
<input type="checkbox"/> SHOP DRAWING		

Fire Sprinkler and Flow Test
 witnessed from Backflow/FDC.
 okay 07/16/2024.

PIPE SIZE (IN.)	MAXIMUM HANGER SPACING (FT.)									
	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8
THREADED LIGHTWALL STEEL PIPE	N/A	12	12	12	12	12	N/A	N/A	N/A	N/A
STEEL PIPE EXCEPT THREADED LIGHTWALL	N/A	12	12	15	15	15	15	15	15	15
CPVC	5'-6"	6	6'-6"	7	8	9	10	N/A	N/A	N/A

- ### PROJECT NOTES
- PROJECT NAME: STORQUEST SELF STORAGE - MIAMI LAKES
 - SPRINKLER SYSTEM SHALL BE IN FULL COMPLIANCE WITH APPLICABLE CODES INCLUDING BUT NOT LIMITED TO:
 - N.F.P.A. 13 2016 EDITION
 - FLORIDA FIRE PREVENTION CODE 7TH EDITION
 - ALL PIPING 1/4" AND LARGER CALCULATED AS SCHEDULE 10 THIN WALL WITH GROOVED FITTINGS.
 - ALL GRADE PIPING 1" AND SMALLER SHALL BE SCHEDULE 40 PIPE TYPE.
 - BUILDING IS BAR JOIST CONSTRUCTION (I BEAM METAL DECK)
 - HANGER TYPE AND SPACING SHALL BE IN ACCORDANCE WITH NFPA 13 2016.
 - STANDARD SPRAY SPRINKLERS USED 225 SQ. FT. LIGHT HAZARD AREAS AND 130 SQ. FT. ORDINARY HAZARD AREAS - EXTENDED COVERAGE SPRINKLERS AT 16' X 16' MAX
 - SQUARE FOOTAGE IS APPROXIMATELY 33,783 SQ. FT. PER LEVEL

FLOW TEST INFO

MIAMI DADE COUNTY - FIRE PREVENTION DEPARTMENT
 DATE: 9/21/2023
 ADDRESS: NW 58 AVE + NW 165 TER
 HYDRANT #1 STATIC: 51 PSI
 RESIDUAL: 50 PSI
 HYDRANT #2 GPM: 1324
 DESIGN AREA REDUCTION USED PER NFPA 13 2016 SECTION 11.2.3.2.3.1

SCOPE OF WORK

INSTALL NEW WET FIRE SPRINKLER SYSTEMS ABOVE GROUND PER NFPA 13 2016 EDITION. SPRINKLER SYSTEM WILL BE UTILIZING EXTENDED CONTROL TO START 1'-0" ABOVE GRADE AT UNDERGROUND STUB UP SYSTEM. REMOTE STANDPIPE WILL HAVE 2 (2") HOSE VALVES.

AHJ NOTE:
 CONTAINER STORAGE PROHIBITED PER DESIGN CRITERIA

ENHANCED SITE PLAN
 SCALE: 3/32" = 1'-0"

APPROVED AS NOTED
 MIAMI DADE COUNTY FIRE DEPARTMENT
 SPRINKLER PLANS - FIRE SUPPRESSION
 UNDERGROUND PIPE INSTALLATION & STANDPIPE
 DATE: 03/05/2024 BY: Miguel A. Lopez
 PROCESS NUMBER: M2024004534
 MIAMI DADE MUNICIPAL INSPECTION REQUIREMENTS AND RECORD CARD IS REQUIRED ON THE JOB SITE AT THE TIME OF FIRE INSPECTION. INSPECTION WILL NOT BE PERFORMED WITHOUT A RECORD CARD

UNDERGROUND NOTES

- PROVIDE LOCAL ALARM WATER FLOWM BELL IN THE IMMEDIATE VICINITY OF THE F.D.C PER N.F.P.A. 13, 2016, 8.17.1.1
- THE FIRE DEPARTMENT CONNECTION BE LOCATED NO MORE THAN 150 FEET FROM A FIRE HYDRANT CLOSER THAN 10 FEET FROM ANY BUILDING OPENING.
- IF THERE IS NO CHOICE THAN TO INSTALL MOUNTED F.D.C. IT SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE CORNER OF THE BUILDING AND A MINIMUM OF 10 FEET FROM THE FRONT OF THE BUILDING AND IT SHALL BE VISIBLE FROM THE STREET.
- THE F.D.C. SHALL BE LOCATED PREFERABLY BY THE FRONT OF THE BUILDING AND IT SHALL BE VISIBLE FROM THE STREET.
- FIRE SPRINKLER SYSTEM SHALL BE IDENTIFIED AS PER N.F.P.A. STANDARD AND MIAMI-DADE CHAPTER 17.4.5.1.
- FIRE DEPARTMENT CONNECTION SHALL BE LOCATED NO CLOSER THAN 10 FEET FROM ANY BUILDING OPENING MIAMI DADE FIRE MARSHAL SHALL COMPLY WITH NFPA 24, SECTION 17.4.5.1.
- LOCATION OF THE BACKFLOW PREVENTOR P.L.V. (IF PROVIDED)
- THE F.D.C. PIPE SHALL BE PRESURE RATED.
- THE BACKFLOW SHALL BE TESTED ANNUALLY.
- THE MINIMUM INVERSE ELEVATION BE NO LESS THAN 36 INCHES.
- MEAN SHALL BE PROVIDED DOWNSTREAM OF ALL BACKFLOW PREVENTOR VALVE ASSEMBLY TO FLD AT FULL SYSTEM DEMAND, INCLUDING HOSE ALLOWANCE AS PER STANDARD, 2016, SECTION 8.17.4.5.1.
- 8.17.4.5.1 Backflow Prevention Means shall be provided, downstream of all backflow preventors for forward flow tests at maximum flow-system demand including hose allowance.
- THIS APPROVAL IS FROM THE POINT OF CONNECTION 12" ABOVE GRADE FROM THE CPIC ALLOW TO THE POINT OF CONNECTION SHALL BE GALVANIZED PIPING SCHEDULE 40 UNDER STANDARD. THE BOLTS SHALL BE COVERED WITH TO PREVENT CORROSION.

FIRE DEPARTMENT CONNECTIONS (EXISTING):

THE FIRE DEPARTMENT CONNECTION(S) SHALL USE AN NH INTERNAL THREADED SWIVEL FITTING(S) WITH AN NH STANDARD THREAD(S), WHERE AT LEAST ONE OF THE CONNECTIONS SHALL BE THE 2.5 NH STANDARD THREAD HOSE CONNECTIONS. WHERE LOCAL FIRE DEPARTMENT CONNECTIONS DO NOT CONFORM TO NFPA 1963, STANDARD FOR FIRE HOSE CONNECTIONS, THE AUTHORITY HAVING JURISDICTION SHALL BE PERMITTED TO DESIGNATE THE CONNECTION TO BE USED. THE USE OF THREADLESS COUPLINGS SHALL BE PERMITTED WHERE REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND WHERE LISTED FOR SUCH DEPARTMENTS. FIRE DEPARTMENT CONNECTIONS SHALL BE EQUIPPED WITH LISTED PLUGS OR CAPS, PROPERLY SECURED AND ARRANGED FOR EASY REMOVAL BY FIRE DEPARTMENTS. FIRE DEPARTMENT CONNECTIONS SHALL BE OF AN APPROVED TYPE.

SPRINKLERS:

GENERAL: ONLY NEW SPRINKLERS SHALL BE INSTALLED.
 SPRINKLER IDENTIFICATION: ALL SPRINKLERS SHALL BE PERMANENTLY MARKED WITH A ONE- OR TWO-CHARACTER MANUFACTURER SYMBOL, FOLLOWED BY THREE OR FOUR NUMBERS, SO AS TO IDENTIFY A UNIQUE SPRINKLER IDENTIFICATION FOR EVERY CHANGE IN ORIFICE SIZE OR SHAPE, DEFLECTOR CHARACTERISTIC, PRESSURE RATING, AND THERMAL SENSITIVITY.

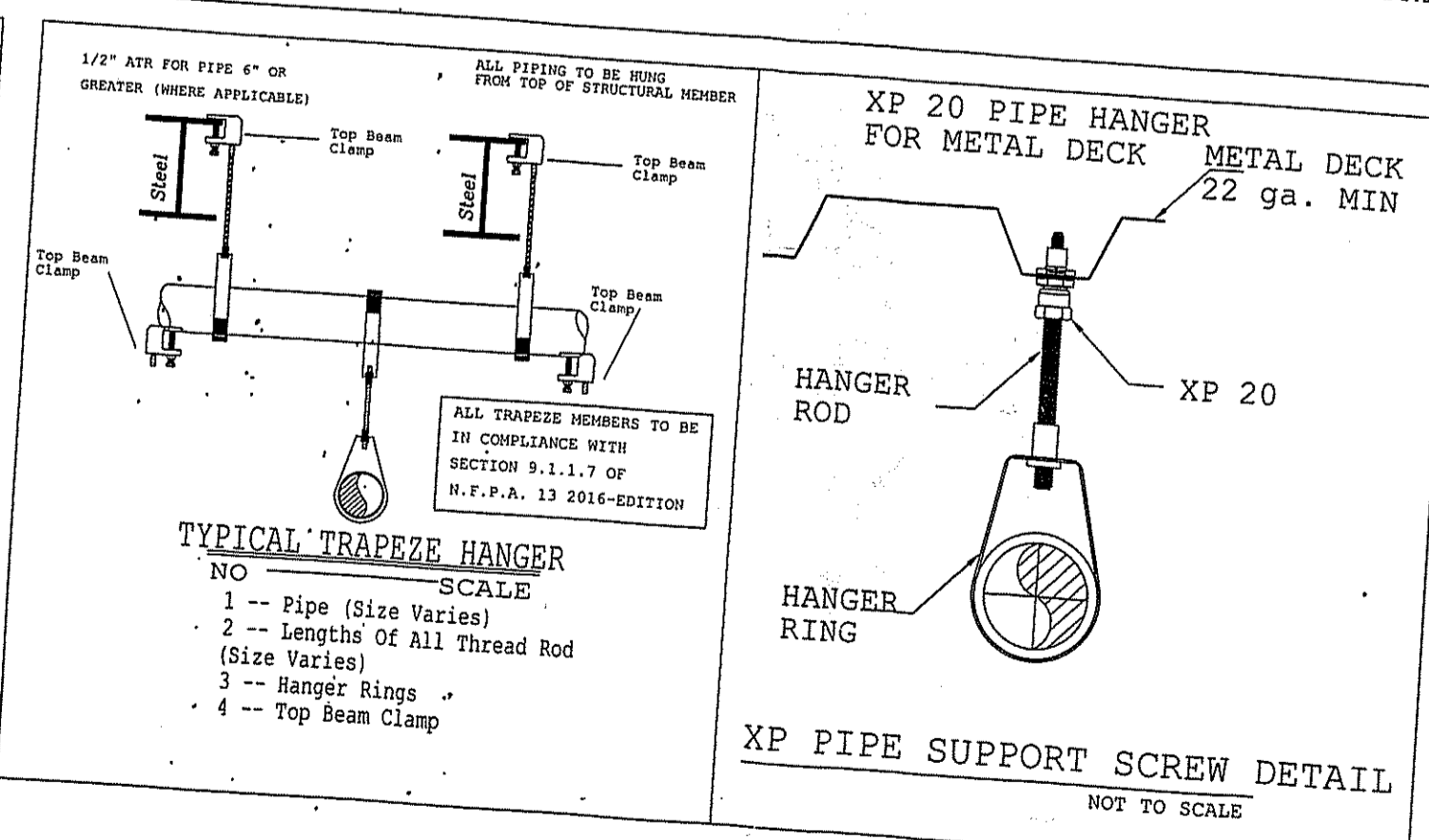
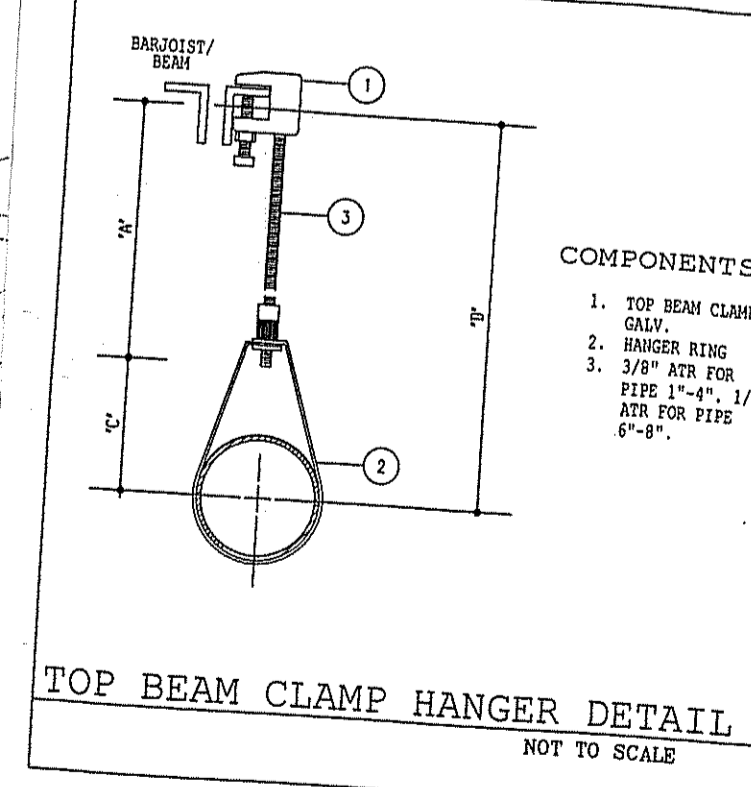
STOCK OF SPARE SPRINKLERS - LOCATED IN BUILDING:

A SUPPLY OF AT LEAST SIX SPARE SPRINKLERS (NEVER FEWER THAN SIX) SHALL BE MAINTAINED ON THE PREMISES SO THAT ANY SPRINKLERS THAT HAVE OPERATED OR BEEN DAMAGED IN ANY WAY CAN BE PROMPTLY REPLACED. THE SPRINKLERS SHALL CORRESPOND TO THE TYPES AND TEMPERATURE RATINGS OF THE SPRINKLERS IN THE PROPERTY. WHERE DRY SPRINKLERS OF DIFFERENT LENGTHS ARE INSTALLED, SPARE DRY SPRINKLERS SHALL NOT BE REQUIRED, PROVIDED THAT A MEANS OF RETURNING THE SYSTEM TO SERVICE IS FURNISHED.

(1) FOR PROTECTED FACILITIES SHALL INCLUDE ALL TYPES AND RATINGS INSTALLED AND SHALL BE AS FOLLOWS:
 (2) FOR PROTECTED FACILITIES HAVING UNDER 300 SPRINKLERS - NO FEWER THAN SIX SPRINKLERS
 (3) FOR PROTECTED FACILITIES HAVING 300 TO 1000 SPRINKLERS - NO FEWER THAN 12 SPRINKLERS
 (4) FOR PROTECTED FACILITIES HAVING OVER 1000 SPRINKLERS - NO FEWER THAN 24 SPRINKLERS

A SPECIAL SPRINKLER WRENCH SHALL BE PROVIDED AND KEPT IN THE CABINET TO BE USED IN THE REMOVAL AND INSTALLATION OF SPRINKLERS. ONE SPRINKLER WRENCH SHALL BE PROVIDED FOR EACH TYPE OF SPRINKLER INSTALLED. A MINIMUM OF TWO SPRINKLERS OF EACH TYPE AND TEMPERATURE RATING SHOULD BE PROVIDED.

FIRE PROTECTION SITE PLAN
 SCALE: 1/32" = 1'-0"



- Valve Not Smaller than 3/4"
 - Nipple
 - Cap or Plug
- (at least one shall be brass)
 Auxiliary Drain

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DATE: 10/17/2024
 EXAMINER: LOPEZ, MIGUEL A.
 DATE TIME STAMP: 3:51:40 PM
 FIRE REFERENCE ONLY.

SOUTHERN FIRE CONTR., INC.
 Fire Protection, Service & Installations.
 6861 S.W. 196 AVENUE BAY - 31
 PEMBROKE PINES, FL 33228
 CC # FPC16-000016
 PHONE (954) 858-1600 FAX (9) 845-2718

Approved As Noted

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24

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Current Date: _____

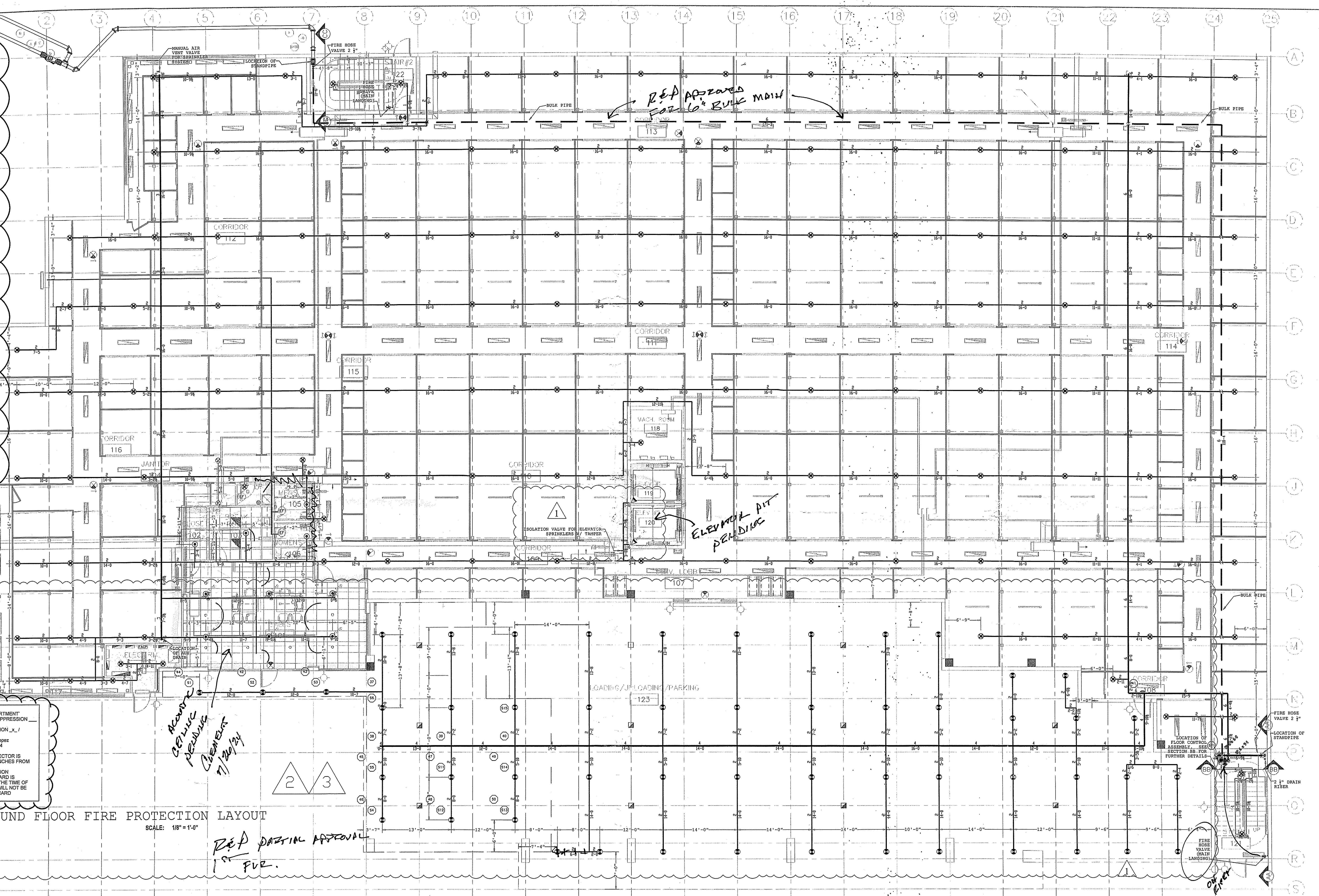
If signed digitally above, printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

STOREQUEST MIAMI LAKES
 5790 NW 165TH TERRACE
 MIAMI LAKES, FL 33014

PERMIT NO.	
JOB NO.	
APPROVAL	MIAMI DADE COUNTY
DESIGNED BY	FDG
SCALE	1/16" = 1'-0"
DATE	10/02/2023
TOTAL NEW JOB HEAD COUNT	501

NOTES:
 1- SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER FILLED PIPE PLUS A MINIMUM OF 250 LB. APPLIED TO THE POINT OF HANGING, PER NFPA 13, CHAPTER 8.
 2- ALL SPRINKLERS WITHIN A COMPARTMENT SHALL BE OF THE SAME THERMAL SENSITIVITY AND ACCORDANCE WITH NFPA 13, STANDARD.
 3- ALL PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH NFPA 1, SECTION 12.7 THRU SECTION 12.9 OF THE FLORIDA FIRE PREVENTION CODE.
 4- VERIFY THE CONTRACTOR PROVIDE A GENERAL INFORMATION SIGN AS REQUIRED BY NFPA 13, 2019 SECTION 22.1.1.
 THE SIGN SHALL PROVIDE THE INFORMATION REQUIRED BY THE STANDARD SECTION 22.1.
 25.6.1.1 Such general information shall be provided with a permanently marked weatherproof metal or rigid plastic sign, secured with corrosion-resistant wire, chain, or other acceptable means.
 25.6.1.2 Such signs shall be placed at each system control riser, manifold loop, and auxiliary system control valve.
 5- APPROVAL WAS BASED ON THE PIPE SIZES AND LAYOUT SHOWN ON THIS DRAWING.
 IF YOU NOTICE SOME CHANGES BETWEEN THE FIELD INSTALLATION AND THE PLANS INDICATE THE CHANGES ON THE PLAN AND HAVE THE CONTRACTOR RESUBMIT THE REVISED SHOP DRAWING BEFORE FINAL INSPECTION. HOWEVER, IF YOU NOTICE A DRAMATIC CHANGE BETWEEN THE PLANS AND THE INSTALLATION THIS APPROVAL IS VOIDED AND NULL.
 THE CONTRACTOR SHALL REVISE AND RESUBMIT FOR A NEW REVIEW.
 6- ENSURE COUPLERS ARE ATTACHED TO THE MECHANICAL TEE AS REQUIRED BY MIFR AS PER MIAMI DADE FIRE ENGINEERING PROTOCOL.
 7- A PRESSURE RELIEF VALVE SHALL BE PROVIDED AS REQUIRED BY NFPA 13, 2019 SECTION 8.1.2.1. Unless the requirements of 8.1.2.2 are met, a wet pipe system shall be provided with a listed relief valve not less than 1/2 in. (15 mm) in size and set to operate at 175 psi or 10 psi in excess of the maximum system pressure, whichever is greater.
 8- PROVIDE AN AIR VENTING VALVE AS PER NFPA 13, 2019, SECTION 8.1.5.
 8.1.5 Air Venting. A single air vent with a connection conforming to Section 16.7 shall be provided on each wet pipe system utilizing metallic pipe. (See A.16.7.)
 16.7 Air Venting. The vent required by 8.1.5 shall be located near a high point in the system to allow air to be removed from that portion of the system by one of the following methods:
 (1) Manual valve, minimum 1/2 in. (15 mm) size
 (2) Automatic air vent
 (3) Remote inspector's test valve
 (4) Other approved means
 9- THE FIRE DEPARTMENT CONNECTION SHALL BE LOCATED NO CLOSER THAN 10 FT FROM ANY BUILDING OPENING (WINDOWS OR DOORS). SHALL BE LOCATED NO MORE THAN 150 FEET FROM A FIRE HYDRANT AND SHALL BE VISIBLE FROM THE HYDRANT. AND THE LOCAL WATER ALARM DEVICE SHALL BE LOCATED WITHIN THE VICINITY OF THE FDC.
 10- SPRINKLER PROTECTION SHALL BE PROVIDED TO ALL CLOSETS IN NEW BUILDING GREATER THAN 12 FT AND IN EXISTING BUILDING GREATER THAN 21 FT.
 LINEN CLOSETS AND PANTRIES ARE NOT EXCEPT FROM SPRINKLER PROTECTION.
 11- SPRINKLER PROTECTION SHALL BE PROVIDED IN BATHROOMS LESS THAN 65 FT² IF THERE IS NO THERMAL BARRIER BEHIND THE TUB OR SHOWERS, AS PER NFPA 13, 2019 SECTION 8.15.8.1.1
 8.15.8.1.1 Unless sprinklers are required by 8.15.8.1.2 or 8.15.8.1.3, sprinklers shall not be required in bathrooms that are located within dwelling units, that do not exceed 65 ft² (6.1 m²) in area, and that have walls and ceilings of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating, including the walls and ceilings behind any shower enclosure or tub.
 12- MIAMI DADE MUNICIPAL INSPECTION REQUIREMENTS AND RECORD CARD IS REQUIRED ON THE JOB SITE AT THE TIME OF FIRE INSPECTION. INSPECTION WILL NOT BE PERFORM WITHOUT A RECORD CARD.

APPROVED AS NOTED
 MIAMI DADE COUNTY FIRE DEPARTMENT
 SPRINKLER PLANS - FIRE SUPPRESSION
 UNDERGROUND PIPE INSTALLATION X-1/
 STANDPIPE
 DATE: 03/05/2024 BY: Miguel A. Lopez
 PROCESS NUMBER: M20240305
 INSPECTOR
 VERIFY THE SPRINKLER'S DEFLECTOR IS LOCATED NO CLOSER THAN 6 INCHES FROM THE TOP OF THE LOCKERS.
 MIAMI DADE MUNICIPAL INSPECTION REQUIREMENTS AND RECORD CARD IS REQUIRED ON THE JOB SITE AT THE TIME OF FIRE INSPECTION. INSPECTION WILL NOT BE PERFORM WITHOUT A RECORD CARD



REP APPROVED FOR 6\"/>

ELEVATOR PIT PENDING

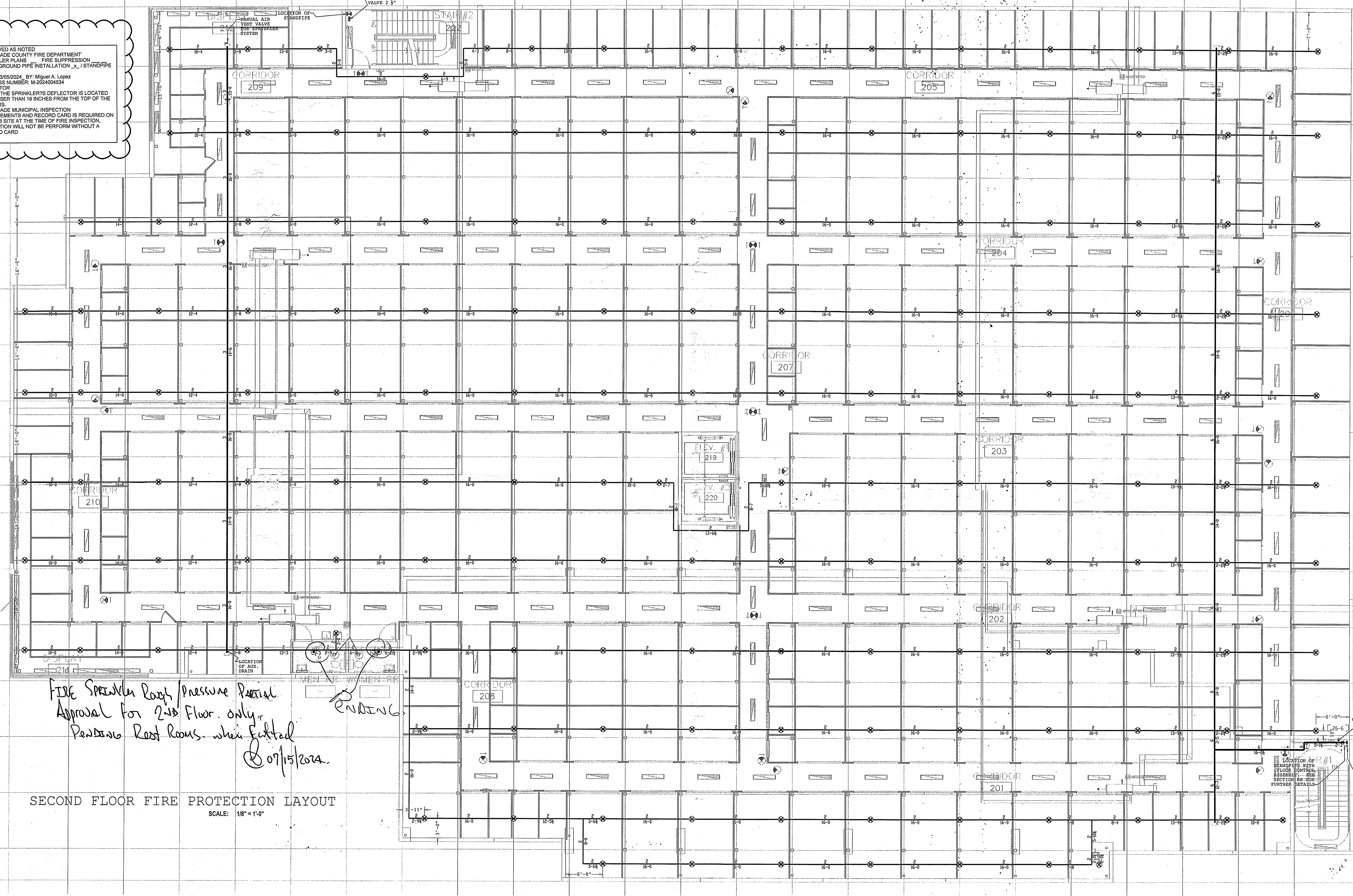
ALONG CELLULAR MOUNTING ELEMENT 7/29/24

REP PARTIAL APPROVAL
 1st FLOOR

GROUND FLOOR FIRE PROTECTION LAYOUT
 SCALE: 1/8" = 1'-0"

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Fire Protection, Service & Inspections. 6861 S.W. 196 AVENUE BAY - 304 MIAMI, FL 33149 PHONE (954) 858-1600 FAX (954) 845-2718		<table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>11/15/23</td> <td>SFC INTERNAL CHANGES/UPDATES</td> </tr> <tr> <td>2</td> <td>1/1/24</td> <td>MDFR COMMENTS 12/13/23</td> </tr> <tr> <td>3</td> <td>1/29/24</td> <td>MDFR COMMENTS 01/05/24</td> </tr> </tbody> </table>	NO.	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RESISTANT	10	(E)	EMERGENCY	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10	(G)	GLASS	10	(B)	BRASS	10	(U)	UPRIGHT	10	(D)	DOWN	10	(S)	STANDARD	10	(Q)	QUICK	10	(R)	RATED	10	(I)	INSULATED	10
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APPROVED AS NOTED
 MIAMI DADE COUNTY FIRE DEPARTMENT
 SPRINKLER PLANS - FIRE SUPPRESSION
 UNDERGROUND PIPE INSTALLATION_x_ / STANDPIPE
 DATE: 03/05/2024, BY: Miguel A. Lopez
 PROCESS NUMBER: M-2024004534
 INSPECTOR
 VERIFY THE SPRINKLER'S DEFLECTOR IS LOCATED
 NO CLOSER THAN 18 INCHES FROM THE TOP OF THE
 LOCKERS.
 MIAMI DADE MUNICIPAL INSPECTION
 REQUIREMENTS AND RECORD CARD IS REQUIRED ON
 THE JOB SITE AT THE TIME OF FIRE INSPECTION,
 INSPECTION WILL NOT BE PERFORM WITHOUT A
 RECORD CARD



*FIRE Sprinkler Rook / Pressure Partial
 Approval for 2nd Floor only
 Pending Rest Rooms when Filled
 07/15/2024*

PENDING

SECOND FLOOR FIRE PROTECTION LAYOUT
 SCALE: 1/8" = 1'-0"

THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF SOUTHERN FIRE CONTROL (SFC). SFC IS NOT RESPONSIBLE FOR ANY MODIFICATIONS MADE TO THE TRANSMITTED INFORMATION CONTAINED HEREIN BY ANY PARTY OTHER THAN SFC. THEREFORE THE RECEIVING PARTIES AGREE TO HOLD HARMLESS AND INDEMNIFY SFC FROM ALL CLAIMS, LIABILITIES, LOSSES, DAMAGES, MISINTERPRETATIONS, MISUSE OR REUSE BY OTHERS OF INFORMATION PROVIDED HEREIN. THIS INFORMATION APPLIES WITHOUT LIMITATION TO ANY USE OF THIS INFORMATION NOT DIRECTLY SUPERVISED OR REVIEWED BY SFC. ANY USE OF THIS INFORMATION WITHOUT THE WRITTEN PERMISSION OF SFC IS PROHIBITED.
 Miami Dade County Department of Building and Economic Resources - Rework
 32203 6376 2024/03/05 10:51 PM
 Approved with the Inspector's stamp and name
 Examined, MIGUEL A. Lopez 03/05/2024 10:51 PM
 LOPEZ, MIGUEL A. 10/17/2024 3:51:40 PM FIRE Reference Only.

SOUTHERN FIRE CONTROL, INC.
 Fire Protection, Service & Inspections.
 6861 S.W. 196 AVENUE BAY - 304
 PEMBROKE PINES, FL 33325
 Phone (954) 856-1600 FAX (954) 845-2718

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/ UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24

SYMBOL	DESCRIPTION	MARKING	REMARKS
(X)	NEW THROUGHOUT		
(V)	NEW THROUGHOUT		
(S)	NEW THROUGHOUT		
(E)	ELEVATOR/STAIRS		
(R)	REPAIR		
(D)	DELETE		
(C)	CONCEALED		
(Q)	QUICK RESPONSE		

Current Date

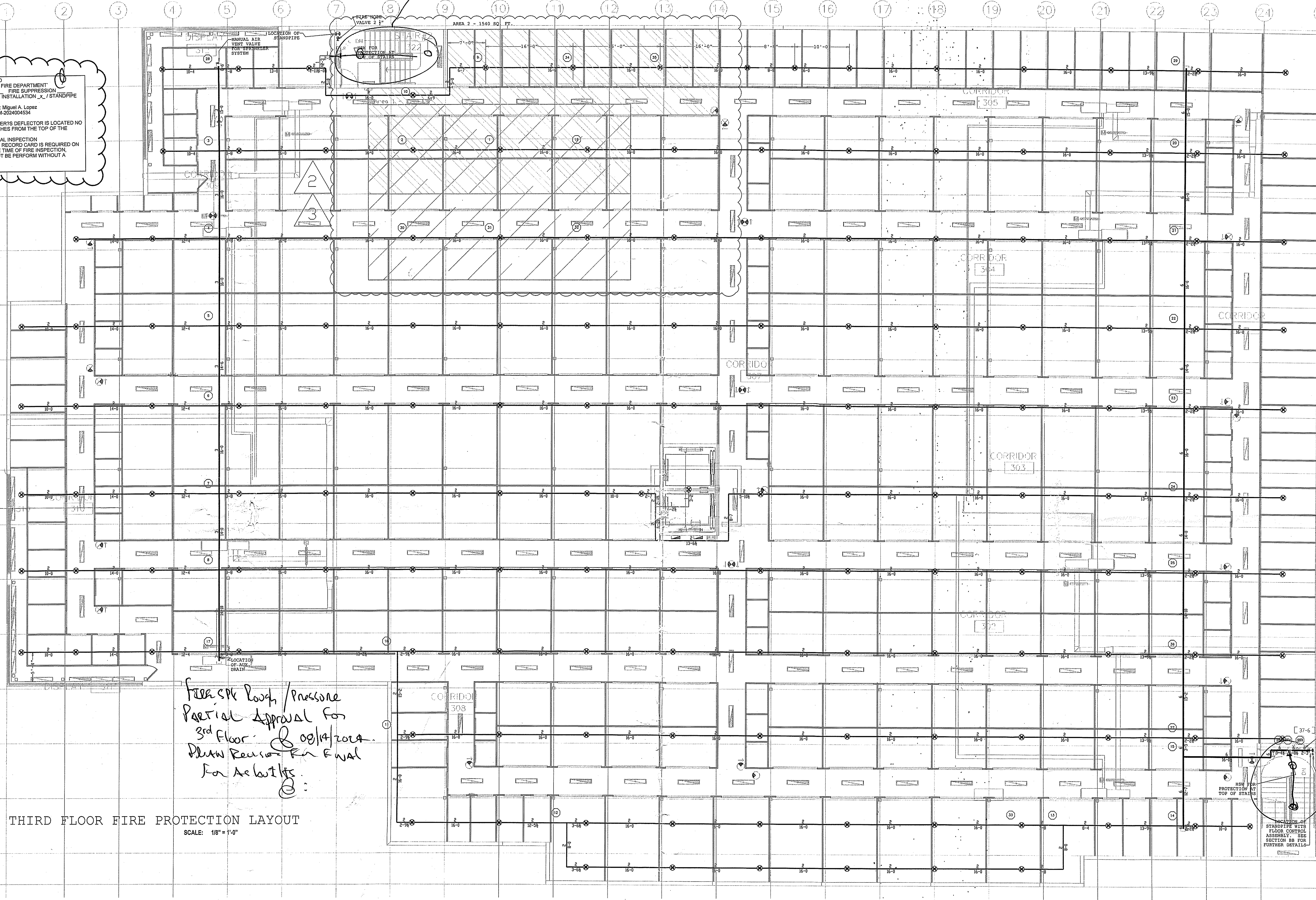
Signature line

STOREQUEST MIAMI LAKES
 5790 NW 165TH TERRACE
 MIAMI LAKES, FL 33014

PERMIT NO.	
JOB NO.	
APPROVAL	FDG
DESIGNED BY	
SCALE	NOTED
DATE	10/3/2023
TOTAL HEAD COUNT THIS AREA	154

Revise to show as built

APPROVED AS NOTED
MIAMI DADE COUNTY FIRE DEPARTMENT
SPRINKLER PLANS
UNDERGROUND PIPE INSTALLATION x / STANDPIPE
DATE: 03/05/2024 BY: Miguel A. Lopez
PROCESS NUMBER: M-2624004534
INSPECTOR
VERIFY THE SPRINKLER'S DEFLECTOR IS LOCATED NO CLOSER THAN 18 INCHES FROM THE TOP OF THE LOCKERS.
MIAMI DADE MUNICIPAL INSPECTION REQUIREMENTS AND RECORD CARD IS REQUIRED ON THE JOB SITE AT THE TIME OF FIRE INSPECTION. INSPECTION WILL NOT BE PERFORM WITHOUT A RECORD CARD



Fire Spr. Rough / Pressure
Partial Approval for
3rd Floor 08/14/2024
Draw Revision for Final
for as built

THIRD FLOOR FIRE PROTECTION LAYOUT
SCALE: 1/8" = 1'-0"

Revise to show as built

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SOUTHERN FIRE CONTROL, INC.
Fire Protection, Service & Inspections.
6861 S.W. 196 AVENUE BAY - 304
BROOKDALE, FL 33325
REBORO, PINES, FL 33325
and Economic Resources - Rework
and Economic Resources - Job Copy
PHONE (954) 858-1600 FAX (954) 845-2718

NO.	DATE	REVISION
1	11/15/23	SFC INTERNAL CHANGES/UPDATES
2	1/1/24	MDFR COMMENTS 12/13/23
3	1/29/24	MDFR COMMENTS 01/05/24

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(Symbol)	NEW THROUGHROOF	(Symbol)	NEW THROUGHROOF	(Symbol)	ELEVATOR / STAIRS	(Symbol)	MANUFACTURE
(Symbol)	VICTAULIC	(Symbol)	FL-VISA-FLEX	(Symbol)	FL-CORVW	(Symbol)	MANUFACTURE
(Symbol)	FL-ECON	(Symbol)	MAX SPACING OF 225	(Symbol)	210 DEGREES IN	(Symbol)	MANUFACTURE
(Symbol)	127/16-50 125 UNO	(Symbol)	127/16-50 125 UNO	(Symbol)	135 DEGREES IN	(Symbol)	MANUFACTURE
(Symbol)	BRASS	(Symbol)	PENDENT	(Symbol)	STAIRS	(Symbol)	MANUFACTURE
(Symbol)	UPRIGHT	(Symbol)	WALL	(Symbol)	STAIRS	(Symbol)	MANUFACTURE
(Symbol)	WALLS	(Symbol)	WALL	(Symbol)	STAIRS	(Symbol)	MANUFACTURE
(Symbol)	STANDARD RESPONSE	(Symbol)	QUICK RESPONSE	(Symbol)	STAIRS	(Symbol)	MANUFACTURE

Current Date

STOREQUEST MIAMI LAKES
5790 NW 165TH TERRACE
MIAMI LAKES, FL 33014

PERMIT NO.	
JOB NO.	
APPROVAL	FDG
DESIGNED BY	
SCALE	NOTED
DATE	10/2/2023
TOTAL HEAD COUNT THIS AREA	154

FP-4 of 5

MIGUEL A. LOPEZ 10/17/2024 3:51:40 PM FIRE Reference Only.

Revise to show as built

Pipe Fittings NPT Threaded, Ductile Iron

General Description

The Tyco® Series 800 Threaded Pipe Fittings and California Tees & Elbows are manufactured from ductile iron. They are stronger and more corrosion resistant than cast iron fittings. The additional strength is provided by the ductile properties and by adding magnesium while the iron is being poured into the final cast shape. Although lighter than standard cast iron, the fittings have an added advantage of being less susceptible to cracking due to their added strength.

The Series 800, California, and Figure 719 Threaded Pipe Fittings are a re-designation for the Central Series 800, California, and Figure 719 Threaded Pipe Fittings.

WARNINGS

The Threaded Pipe Fittings described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.

Technical Data

Approvals:

UL Listed and FM Approved

Maximum Working Pressure:

Series 800 and California Fittings:
250 psi (17,2 bar)

Figure 719 Plug:
250 psi (17,2 bar)

Material:

Series 800 and California Fittings:
Ductile Iron

Figure 719 Plug:
Cast Iron

Pipe Thread:

NPT per ANSI B1.20.1

Installation

Apply Teflon[†] tape or high quality pipe joint compound on male pipe threads and tighten two to three turns beyond hand tight.

NOTE

Installers who have not used ductile iron threaded fittings should be instructed that the fittings are stronger than the pipe and overtightening the fitting can create leaks and cause damage to pipe threads. In general, there is about one-half turn difference between cast iron and ductile iron fittings. Apply Teflon tape or high quality pipe joint compound on the male pipe threads and tighten two to three turns beyond hand tight. If an automatic make-on machine is being used, please exercise caution in setting the machine to the proper parameters prior to tightening fittings onto the male pipe threads.

Limited Warranty

Products manufactured by Tyco Fire & Building Products (TFBP) are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by TFBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFBP or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable

Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by TFBP to be defective shall be either repaired or replaced, at TFBP's sole option. TFBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFBP shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

In no event shall TFBP be liable, in contract, tort, strict liability or under any other legal theory, for incidental, indirect, special or consequential damages, including but not limited to labor charges, regardless of whether TFBP was informed about the possibility of such damages, and in no event shall TFBP's liability exceed an amount equal to the sales price.

The foregoing warranty is made in lieu of any and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

This limited warranty sets forth the exclusive remedy for claims based on failure of or defect in products, materials or components, whether the claim is made in contract, tort, strict liability or any other legal theory.

This warranty will apply to the full extent permitted by law. The invalidity, in whole or part, of any portion of this warranty will not affect the remainder.

Ordering Procedure

When placing an order, indicate the full product name. Please specify the quantity, figure number, wall thickness, and size.

[†] registered trademark of E. I. du Pont de Nemours and Company or its affiliates.

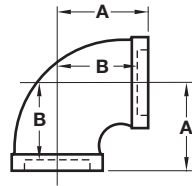


FIGURE 811
90° ELBOW

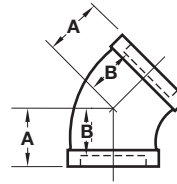


FIGURE 813
45° ELBOW

Nominal Pipe Size	Figure 811				Figure 813			
	ANSI Inches DN	A Inches (mm)	B Inches (mm)	Approx. Weight Lbs. (kg)	Part Number	A Inches (mm)	B Inches (mm)	Approx. Weight Lbs. (kg)
1/2 DN15	1.13 (28,7)	0.56 (14,2)	0.24 (0,11)	86206	0.88 (22,4)	0.38 (9,7)	0.22 (0,09)	86780
3/4 DN20	1.31 (33,3)	0.75 (19,0)	0.40 (0,18)	86205	1.00 (25,4)	0.44 (11,2)	0.33 (0,15)	86781
1 DN25	1.50 (38,1)	0.81 (20,6)	0.64 (0,29)	86200	1.13 (28,7)	0.81 (20,6)	0.48 (0,21)	86280
1-1/4 DN32	1.75 (44,5)	1.06 (26,9)	0.95 (0,43)	86201	1.31 (33,3)	0.63 (16,0)	0.73 (0,33)	86281
1-1/2 DN40	1.94 (49,3)	1.19 (30,2)	1.24 (0,56)	86202	1.44 (36,6)	0.69 (17,5)	0.93 (0,42)	86282
2 DN50	2.25 (57,1)	1.50 (38,1)	1.74 (0,79)	86203	1.68 (42,7)	0.94 (23,9)	1.55 (0,70)	86283
2-1/2 DN65	2.69 (68,3)	1.56 (39,6)	3.28 (1,49)	86204	1.94 (49,3)	1.00 (25,4)	2.70 (1,22)	86782

TABLE 1
NOMINAL DIMENSIONS FIGURES 811 & 813

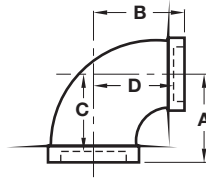


FIGURE 812
90° REDUCING ELBOW

Nominal Pipe Size	Figure 812					
ANSI Inches DN	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	Approx. Weight Lbs. (kg)	Part Number
3/4 x 1/2 DN20 x 15	1.19 (30,2)	1.19 (30,2)	0.63 (16,0)	0.63 (16,0)	0.33 (0,15)	86342
1 x 1/2 DN25 x 15	1.25 (31,8)	1.38 (35,1)	0.56 (14,2)	0.81 (20,6)	0.44 (0,20)	86210
1 x 3/4 DN25 x 20	1.38 (35,1)	1.44 (36,6)	0.69 (17,5)	0.88 (22,4)	0.53 (0,24)	86211
1-1/4 x 1/2 DN32 x 15	1.31 (33,3)	1.50 (38,1)	0.63 (16,0)	0.94 (23,9)	0.64 (0,29)	86212
1-1/4 x 3/4 DN32 x 20	1.44 (36,6)	1.63 (41,4)	0.75 (19,0)	1.06 (26,9)	0.75 (0,34)	86213
1-1/4 x 1 DN32 x 25	1.56 (39,6)	1.68 (42,7)	0.88 (22,4)	1.00 (25,4)	0.77 (0,35)	86214
1-1/2 x 3/4 DN40 x 20	1.50 (38,1)	1.75 (44,4)	0.75 (19,0)	1.19 (30,2)	0.95 (0,43)	86221
1-1/2 x 1 DN40 x 25	1.63 (41,4)	1.81 (46,0)	0.88 (22,4)	1.13 (28,7)	0.99 (0,45)	86215
1-1/2 x 1-1/4 DN40 x 32	1.81 (46,0)	1.88 (47,8)	1.13 (28,7)	1.19 (30,2)	1.14 (0,52)	86216
2 x 3/4 DN50 x 20	1.63 (41,4)	1.94 (49,3)	0.88 (22,4)	1.38 (35,1)	1.39 (0,63)	86217
2 x 1 DN50 x 25	1.75 (44,4)	2.06 (52,3)	2.00 (50,8)	1.31 (33,3)	1.58 (0,72)	86218
2 x 1-1/2 DN50 x 40	2.00 (50,8)	2.19 (55,6)	1.25 (31,8)	1.44 (36,6)	1.67 (0,76)	86220
2-1/2 x 2 DN65 x 50	2.38 (60,5)	2.63 (66,8)	1.25 (31,8)	1.88 (47,8)	3.01 (1,36)	86262

TABLE 2
NOMINAL DIMENSIONS FIGURE 812

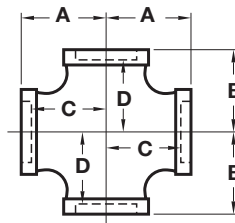


FIGURE 817
CROSS

Nominal Pipe Size	Figure 817					
ANSI Inches DN	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	Approx. Weight Lbs. (kg)	Part Number
1 DN25	1.50 (38,1)	1.50 (38,1)	0.81 (20,6)	0.81 (20,6)	0.97 (0,44)	86284
1-1/4 DN32	1.75 (44,4)	1.75 (44,4)	1.06 (26,9)	1.06 (27,0)	1.59 (0,72)	86285
1-1/2 DN40	1.94 (49,3)	1.94 (49,3)	1.19 (30,2)	1.19 (30,2)	1.89 (0,86)	86286
2 DN50	2.25 (57,1)	2.25 (57,1)	1.50 (38,1)	1.50 (38,1)	2.93 (1,33)	86287
1-1/4 x 1-1/4 x 1 x 1 DN32 x 32 x 25 x 25	1.69 (42,9)	1.56 (39,6)	1.00 (25,4)	0.88 (22,4)	1.25 (0,56)	86289
1-1/2 x 1-1/2 x 1 x 1 DN40 x 40 x 25 x 25	1.81 (46,0)	1.63 (41,4)	1.06 (26,9)	1.94 (49,3)	1.48 (0,71)	86322
2 x 2 x 1 x 1 DN50 x 50 x 25 x 25	2.00 (50,8)	1.75 (44,4)	1.25 (31,8)	1.06 (26,9)	2.64 (1,20)	86291

TABLE 3
NOMINAL DIMENSIONS FIGURE 817

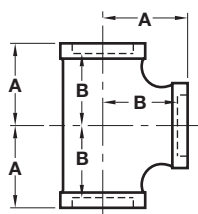


FIGURE 814
IRON TEE

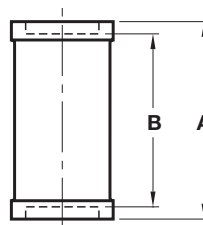


FIGURE 818
STRAIGHT COUPLING

Nominal Pipe Size	Figure 814				Figure 818			
	ANSI Inches DN	A Inches (mm)	B Inches (mm)	Approx. Weight Lbs. (kg)	Part Number	A Inches (mm)	B Inches (mm)	Approx. Weight Lbs. (kg)
1/2 DN15	1.13 (28,7)	0.56 (14,2)	0.33 (0,15)	86340	1.38 (35,1)	0.31 (7,9)	0.18 (0,08)	72779
3/4 DN20	1.31 (33,3)	0.75 (19,0)	0.50 (0,23)	86341	1.63 (41,4)	0.56 (14,0)	0.26 (0,11)	72778
1 DN25	1.50 (38,1)	0.81 (20,6)	0.85 (0,38)	86230	1.75 (44,4)	0.38 (9,7)	0.44 (0,20)	72755
1-1/4 DN32	1.75 (44,4)	1.06 (26,9)	1.30 (0,59)	86231	2.00 (50,8)	0.56 (14,0)	0.54 (0,24)	72754
1-1/2 DN40	1.94 (49,3)	1.19 (30,2)	1.63 (0,74)	86232	2.19 (55,6)	0.75 (19,0)	0.71 (0,32)	72753
2 DN50	2.25 (57,1)	1.50 (38,1)	2.63 (1,19)	86233	2.63 (66,8)	1.13 (28,7)	1.15 (0,52)	72752
2-1/2 DN65	2.69 (68,3)	1.56 (39,6)	4.55 (2,06)	86234	3.00 (76,2)	0.75 (19,0)	2.29 (1,04)	72758

TABLE 4
NOMINAL DIMENSIONS FIGURES 814 & 818

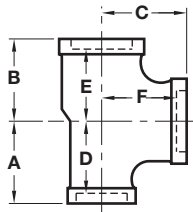


FIGURE 815
REDUCING TEE

Nominal Pipe Size	Figure 815							Approx. Weight Lbs. (kg)	Part Number
ANSI Inches DN	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	F Inches (mm)			
3/4 x 3/4 x 1/2 DN20 x 20 x 15	1.19 (30,2)	1.19 (30,2)	1.25 (31,8)	0.63 (16,0)	0.63 (16,0)	0.69 (17,5)	0.46 (0,21)	86235	
3/4 x 3/4 x 1 DN20 x 20 x 25	1.44 (36,6)	1.44 (36,6)	1.38 (35,1)	0.88 (22,4)	0.88 (22,4)	0.69 (17,5)	0.68 (0,31)	86755	
1 x 1/2 x 1 DN25 x 15 x 25	1.50 (38,1)	1.38 (35,1)	1.50 (38,1)	0.81 (20,6)	0.81 (20,6)	0.81 (20,6)	0.70 (0,32)	86236	
1 x 3/4 x 1/2 DN25 x 20 x 15	1.25 (31,8)	1.19 (30,2)	1.38 (35,1)	0.56 (14,2)	0.63 (16,0)	0.81 (20,6)	0.63 (0,28)	86756	
1 x 3/4 x 3/4 DN25 x 20 x 20	1.38 (35,1)	1.31 (33,3)	1.44 (36,6)	0.69 (17,5)	0.75 (19,0)	0.88 (22,4)	0.68 (0,31)	86757	
1 x 3/4 x 1 DN25 x 20 x 25	1.50 (38,1)	1.44 (36,6)	1.50 (38,1)	0.81 (20,6)	0.88 (22,4)	0.81 (20,6)	0.77 (0,35)	86237	
1 x 1 x 1/2 DN25 x 25 x 15	1.25 (31,8)	1.25 (31,8)	1.38 (35,1)	0.56 (14,3)	0.56 (14,3)	0.81 (20,6)	0.66 (0,30)	86238	
1 x 1 x 3/4 DN25 x 25 x 20	1.38 (35,1)	1.38 (35,1)	1.44 (36,6)	0.69 (17,5)	0.69 (17,5)	0.88 (22,4)	0.73 (0,33)	86239	
1 x 1 x 1-1/4 DN25 x 25 x 32	1.69 (42,9)	1.69 (42,9)	1.56 (39,6)	1.00 (25,4)	1.00 (25,4)	0.88 (22,4)	0.97 (0,44)	86240	
1 x 1 x 1-1/2 DN25 x 25 x 40	1.81 (46,0)	1.81 (46,0)	1.63 (41,4)	1.13 (28,6)	1.13 (28,6)	0.88 (22,4)	1.14 (0,52)	86241	
1-1/4 x 1 x 1/2 DN32 x 25 x 15	1.94 (49,2)	1.25 (31,8)	1.56 (39,6)	0.63 (15,9)	0.56 (14,3)	1.00 (25,4)	0.81 (0,37)	86242	
1-1/4 x 1 x 3/4 DN32 x 25 x 20	1.44 (36,6)	1.38 (35,1)	1.62 (41,2)	0.75 (19,0)	0.69 (17,5)	1.06 (27,0)	0.90 (0,41)	86243	
1-1/4 x 1 x 1 DN32 x 25 x 25	1.56 (39,6)	1.50 (38,1)	1.69 (42,9)	0.88 (22,4)	0.81 (20,6)	1.00 (25,4)	1.03 (0,47)	86244	
1-1/4 x 1 x 1-1/4 DN32 x 25 x 32	1.75 (44,4)	1.69 (42,9)	1.75 (44,4)	1.06 (27,0)	1.00 (25,4)	1.06 (27,0)	1.10 (0,50)	86245	
1-1/4 x 1 x 1-1/2 DN32 x 25 x 40	1.88 (47,6)	1.81 (46,0)	1.81 (46,0)	1.19 (30,1)	1.13 (28,6)	1.06 (27,0)	1.43 (0,65)	86246	
1-1/4 x 1-1/4 x 1/2 DN32 x 32 x 15	1.38 (35,1)	1.38 (35,1)	1.56 (39,6)	0.69 (17,5)	0.69 (17,5)	1.00 (25,4)	0.87 (0,39)	86247	
1-1/4 x 1-1/4 x 3/4 DN32 x 32 x 20	1.44 (36,6)	1.44 (36,6)	1.63 (41,4)	0.75 (19,0)	0.75 (19,0)	1.06 (27,0)	0.96 (0,43)	86248	
1-1/4 x 1-1/4 x 1 DN32 x 32 x 25	1.56 (39,6)	1.56 (39,6)	1.69 (42,9)	0.88 (22,4)	0.88 (22,4)	1.00 (25,4)	1.10 (0,50)	86249	
1-1/4 x 1-1/4 x 1-1/2 DN32 x 32 x 40	1.88 (47,6)	1.88 (47,6)	1.81 (46,0)	1.81 (46,0)	1.81 (46,0)	1.06 (27,0)	1.50 (0,68)	86250	
1-1/4 x 1-1/4 x 2 DN32 x 32 x 50	2.13 (54,1)	2.13 (54,1)	2.00 (50,8)	1.44 (36,6)	1.44 (36,6)	1.13 (28,6)	2.00 (0,91)	86251	
1-1/2 x 1 x 1/2 DN40 x 25 x 15	1.44 (36,6)	1.31 (33,3)	1.69 (42,9)	0.69 (17,5)	0.63 (15,9)	1.13 (28,6)	0.97 (0,44)	86252	
1-1/2 x 1 x 3/4 DN40 x 25 x 20	1.50 (38,1)	1.38 (35,1)	1.75 (44,4)	0.75 (19,0)	0.69 (17,5)	1.19 (30,2)	1.14 (0,52)	86253	
1-1/2 x 1 x 1 DN40 x 25 x 25	1.63 (41,4)	1.50 (38,1)	1.81 (46,0)	0.88 (22,4)	0.81 (20,6)	1.13 (28,7)	1.14 (0,52)	86254	
1-1/2 x 1 x 1-1/2 DN40 x 25 x 40	1.94 (49,3)	1.81 (46,0)	1.94 (49,2)	1.19 (30,2)	1.13 (28,6)	1.19 (30,2)	1.52 (0,69)	86255	

TABLE 5 (1 OF 2)
NOMINAL DIMENSIONS FIGURE 815

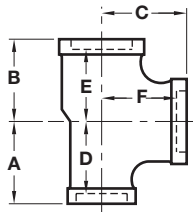


FIGURE 815
REDUCING TEE

Nominal Pipe Size	Figure 815							Approx. Weight Lbs. (kg)	Part Number
ANSI Inches DN	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	F Inches (mm)			
1-1/2 x 1-1/4 x 1/2 DN40 x 32 x 15	1.44 (36,6)	1.31 (33,3)	1.69 (42,9)	0.69 (17,5)	0.63 (16,0)	1.13 (28,7)	1.03 (0,47)	86257	
1-1/2 x 1-1/4 x 3/4 DN40 x 32 x 20	1.50 (38,1)	1.44 (36,6)	1.75 (44,5)	0.75 (19,0)	0.75 (19,0)	1.19 (30,1)	1.10 (0,50)	86258	
1-1/2 x 1-1/4 x 1 DN40 x 32 x 25	1.63 (41,4)	1.56 (39,7)	1.81 (46,0)	0.88 (22,4)	0.88 (22,4)	1.13 (28,7)	1.31 (0,59)	86259	
1-1/2 x 1-1/4 x 2 DN40 x 32 x 50	2.19 (55,6)	2.13 (54,1)	2.00 (50,8)	1.44 (36,6)	1.44 (36,6)	1.25 (57,1)	1.94 (0,88)	86260	
1-1/2 x 1-1/2 x 1/2 DN40 x 40 x 15	1.44 (36,6)	1.44 (36,6)	1.69 (42,9)	0.69 (17,5)	0.69 (17,5)	1.13 (28,7)	1.14 (0,52)	86261	
1-1/2 x 1-1/2 x 3/4 DN40 x 40 x 20	1.50 (38,1)	1.50 (38,1)	1.75 (44,4)	0.75 (19,0)	0.75 (19,0)	1.19 (30,1)	1.23 (0,56)	86262	
1-1/2 x 1-1/2 x 1 DN40 x 40 x 25	1.63 (41,2)	1.63 (41,2)	1.81 (46,0)	0.88 (22,4)	0.88 (22,4)	1.13 (28,7)	1.38 (0,62)	86263	
1-1/2 x 1-1/2 x 1-1/4 DN40 x 40 x 32	1.81 (46,0)	1.81 (46,0)	1.88 (47,6)	1.06 (27,0)	1.06 (27,0)	1.19 (30,1)	1.50 (0,68)	86264	
1-1/2 x 1-1/2 x 2 DN40 x 40 x 50	2.19 (55,5)	2.19 (55,5)	2.00 (50,8)	1.44 (36,6)	1.44 (36,6)	1.25 (31,7)	2.00 (0,91)	86265	
2 x 1 x 2 DN50 x 25 x 50	2.25 (57,2)	2.00 (50,8)	2.25 (57,2)	1.50 (38,1)	1.31 (33,3)	1.50 (38,1)	2.18 (0,99)	86266	
2 x 1-1/4 x 2 DN50 x 32 x 50	2.25 (57,2)	2.13 (54,1)	2.25 (57,2)	1.50 (38,1)	1.44 (36,6)	1.50 (38,1)	2.31 (1,05)	86267	
2 x 1-1/2 x 1/2 DN50 x 40 x 15	1.50 (38,1)	1.44 (36,6)	1.88 (47,8)	0.75 (19,0)	0.69 (17,5)	1.31 (33,3)	1.50 (0,68)	86268	
2 x 1-1/2 x 3/4 DN50 x 40 x 20	1.63 (41,4)	1.50 (38,1)	1.94 (49,3)	0.88 (22,4)	0.75 (19,0)	1.38 (35,0)	1.61 (0,73)	86269	
2 x 1-1/2 x 1 DN50 x 40 x 25	1.75 (44,5)	1.63 (41,4)	2.00 (50,8)	1.00 (25,4)	0.88 (22,4)	1.31 (33,3)	1.65 (0,75)	86270	
2 x 1-1/2 x 1-1/2 DN50 x 40 x 40	2.06 (52,4)	1.94 (49,2)	2.19 (55,5)	1.31 (33,3)	1.19 (30,2)	1.44 (36,6)	2.03 (0,92)	86272	
2 x 1-1/2 x 2 DN50 x 40 x 50	2.25 (57,1)	2.19 (55,5)	2.50 (63,5)	1.50 (38,1)	1.44 (36,6)	1.50 (38,1)	2.37 (1,07)	86273	
2 x 2 x 1/2 DN50 x 50 x 15	1.50 (38,1)	1.50 (38,1)	1.88 (47,8)	0.75 (19,0)	0.75 (19,0)	1.31 (33,3)	1.50 (0,68)	86222	
2 x 2 x 3/4 DN50 x 50 x 20	1.63 (41,4)	1.63 (41,4)	1.94 (49,3)	0.88 (22,4)	0.88 (22,4)	1.38 (35,0)	1.67 (0,76)	86223	
2 x 2 x 1 DN50 x 50 x 25	1.75 (44,5)	1.75 (44,5)	2.00 (50,8)	1.00 (25,4)	1.00 (25,4)	1.31 (33,3)	1.91 (0,86)	86224	
2 x 2 x 1-1/4 DN50 x 50 x 32	1.88 (47,8)	1.88 (47,8)	2.13 (54,1)	1.13 (28,7)	1.13 (28,7)	1.44 (36,6)	2.05 (0,93)	86225	
2 x 2 x 1-1/2 DN50 x 50 x 40	2.00 (50,8)	2.00 (50,8)	2.19 (55,6)	1.25 (31,8)	1.25 (31,8)	1.50 (38,1)	2.11 (0,96)	86226	
2 x 2 x 2-1/2 DN50 x 50 x 65	2.63 (66,8)	2.63 (66,8)	2.38 (60,5)	1.75 (44,5)	1.88 (47,8)	1.44 (36,6)	3.67 (1,66)	86227	
2-1/2 x 2 x 3/4 DN65 x 50 x 20	1.75 (44,5)	1.63 (41,4)	2.31 (58,7)	0.63 (15,9)	0.88 (22,4)	1.75 (44,5)	2.22 (1,01)	86274	

TABLE 5 (2 OF 2)
NOMINAL DIMENSIONS FIGURE 815

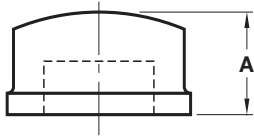


FIGURE 820
CAP

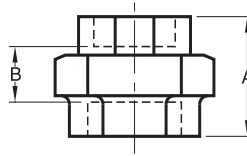


FIGURE 830
BRASS SEAT UNION

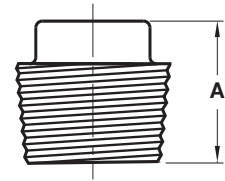


FIGURE 719
PLUG

Nominal Pipe Size	Figure 820			Figure 830				Figure 719		
	A Inches (mm)	Approx. Weight Lbs. (kg)	Part Number	A Inches (mm)	B Inches (mm)	Approx. Weight Lbs. (kg)	Part Number	A Inches (mm)	Approx. Weight Lbs. (kg)	Part Number
1/2 DN15	0.88 (22,4)	0.15 (0,06)	72776	1.88 (47,8)	0.81 (20,6)	0.47 (0,21)	86207	0.94 (23,9)	0.10 (0,04)	86292
3/4 DN20	1.00 (25,4)	0.22 (0,10)	72777	2.00 (50,8)	0.94 (23,9)	0.66 (0,30)	86275	1.13 (28,7)	0.18 (0,08)	86293
1 DN25	1.18 (30,0)	0.33 (0,15)	72824	2.19 (55,6)	0.81 (20,6)	1.08 (0,49)	86276	1.25 (31,7)	0.28 (0,13)	86294
1-1/4 DN32	1.31 (33,3)	0.54 (0,24)	72756	2.50 (63,5)	1.06 (26,9)	1.54 (0,70)	86277	1.38 (35,1)	0.50 (0,23)	86295
1-1/2 DN40	1.38 (35,1)	0.68 (0,31)	72822	2.63 (66,8)	1.19 (30,2)	2.03 (0,92)	86278	1.44 (36,6)	0.70 (0,32)	86296
2 DN50	1.50 (38,1)	0.96 (0,43)	72823	3.13 (79,5)	1.63 (41,4)	3.15 (1,43)	86279	1.50 (38,1)	0.90 (0,41)	86297
2-1/2 DN65	1.75 (44,5)	1.80 (0,82)	72825	-	-	-	-	-	-	-

TABLE 6
NOMINAL DIMENSIONS FIGURES 820, 830 & 719

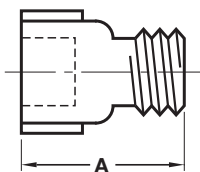


FIGURE 825
EXTENSION PIECE

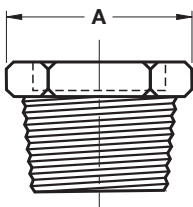


FIGURE 827
HEX BUSHING

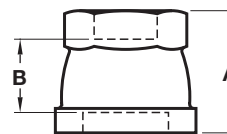
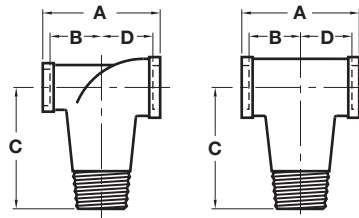


FIGURE 816
REDUCING COUPLING

Nominal Pipe Size	Figure 825 Extension Piece			Figure 827 Hex Bushing			Figure 816 Reducing Coupling				
	ANSI Inches DN	A Inches (mm)	Approx. Weight Lbs. (kg)	Part Number	A Inches (mm)	Approx. Weight Lbs. (kg)	Part Number	A Inches (mm)	B Inches (mm)	Approx. Weight Lbs. (kg)	Part Number
1/2 x 1/2 DN15 x 15	1.50 (38,1)	0.20 (0,09)	72751	-	-	-	-	-	-	-	-
1/2 x 1/2 DN15 x 15	2.00 (50,8)	0.27 (0,12)	72980	-	-	-	-	-	-	-	-
3/4 x 3/4 DN20 x 20	1.50 (38,1)	0.22 (0,10)	72981	-	-	-	-	-	-	-	-
3/4 x 3/4 DN20 x 20	2.00 (50,8)	0.31 (0,14)	73982	-	-	-	-	-	-	-	-
3/4 x 1/2 DN20 x 15	-	-	-	-	-	-	1.75 (43,2)	0.69 (17,5)	0.38 (0,17)	86772	
1 x 1/2 DN25 x 15	-	-	-	1.06 (26,9)	0.22 (0,10)	72726	1.69 (42,9)	0.50 (12,7)	0.38 (0,17)	86228	
1 x 3/4 DN25 x 20	-	-	-	1.06 (26,9)	0.18 (0,08)	72762	1.75 (43,2)	0.50 (12,7)	0.53 (0,24)	86229	
1-1/4 x 1 DN32 x 25	-	-	-	1.19 (30,2)	0.31 (0,14)	72763	-	-	-	-	
1-1/2 x 1 DN40 x 25	-	-	-	1.25 (31,7)	0.53 (0,24)	72757	-	-	-	-	
1-1/2 x 1-1/4 DN40 x 32	-	-	-	1.25 (31,7)	0.35 (0,10)	72764	-	-	-	-	
2 x 1 DN50 x 25	-	-	-	1.38 (35,1)	0.75 (0,34)	72759	-	-	-	-	
2 x 1-1/4 DN50 x 32	-	-	-	1.38 (35,1)	0.69 (0,31)	72761	-	-	-	-	
2 x 1-1/2 DN50 x 40	-	-	-	1.38 (35,1)	0.62 (0,28)	72775	-	-	-	-	

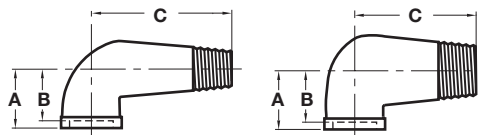
TABLE 7
NOMINAL DIMENSIONS FIGURE 825, 827 & 816



CALIFORNIA TEES

Nominal Pipe Size	California Tees					
ANSI Inches DN	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	Approx. Weight Lbs. (kg)	Part Number
1 x 1/2 x 1 DN25 x 15 x 25	1.50 (38,1)	0.88 (22,4)	3.00 (76,2)	0.75 (19,1)	0.95 (0,43)	42000
1 x 1 x 1 DN25 x 25 x 25	1.50 (38,1)	0.75 (19,1)	3.00 (76,2)	0.75 (19,1)	0.95 (0,43)	42001

**TABLE 8
NOMINAL DIMENSIONS CALIFORNIA TEES**



STREET ELBOWS

Nominal Pipe Size	Street Elbows				
ANSI Inches DN	A Inches (mm)	B Inches (mm)	C Inches (mm)	Approx. Weight Lbs. (kg)	Part Number
1 x 1/2 DN25 x 15	1.50 (38,1)	0.75 (19,1)	3.00 (76,2)	0.70 (0,32)	42003
1 x 1 DN25 x 25	1.50 (38,1)	0.75 (19,1)	3.00 (76,2)	0.90 (0,40)	42002

**TABLE 9
NOMINAL DIMENSIONS STREET ELBOWS**

Grinnell Grooved Fire Protection Products Grooved Fittings

General Description



See Fire Protection
Submittal Sheet for
Pressure Rating and
Listing/Approval
Information

The grooved fittings provide an economical and efficient method of changing direction, adding an outlet, reducing, or capping grooved piping systems. Grooved fittings are available in durable ductile iron or fabricated steel as indicated.

Note: Figure 510S and 519S fittings are special short radius fittings with smaller center to end dimensions than standard grooved fittings. Depending on the size and coupling used, there may be interferences at the bolt pads that require repositioning of the coupling orientation. The use of flange adapters is not recommended with Figures 510S and 519S fittings. Contact Tyco Fire Products for details.

WARNING

The Fittings described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of this device.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.

Technical Data

Approvals:

UL, FM, ULC, VdS, and LPCB;

Note: See Fire Protection Submittal Sheet for exact Listing / Approval information.

Material:

Cast: Figures: 201, 210, 219, 250, 260, 501, 510, 519, 510DE, 501S, 510S and 519S -
Ductile iron conforming to ASTM A-536,
Grade 65-45-12

Fabricated Steel: Figures 391, 392, 393, 312, 313, 321, 327, 341 and 350 - Carbon Steel,
(Sizes 1 1/4" - 6" are Schedule 40);
(Sizes 8" - 12" are Schedule 30),
conforming to ASTM A-53 Grade B

Protective Coatings:

- Non-lead orange paint
- Fire brigade red (optional) non-lead paint
- Hot dipped galvanized conforming to ASTM A-153

Ordering Procedure

When placing an order, indicate the full product name. Please specify the quantity, figure number, wall thickness, and size.

Grinnell Grooved Piping Products, valves, accessories and other products are available throughout the U.S., Canada, and internationally, through a network of distribution centers. You may write directly or call 215-362-0700 for the distributor nearest you.

Care and Maintenance

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in accordance with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any authority having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions. Any impairment must be immediately corrected. It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.

Limited Warranty

Products manufactured by Tyco Fire Products are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association (NFPA), and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

IN NO EVENT SHALL TYCO FIRE PRODUCTS BE LIABLE, IN CONTRACT, TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR CHARGES, REGARDLESS OF WHETHER TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE.

THE FOREGOING WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Figures 201, 210, 219, and 260

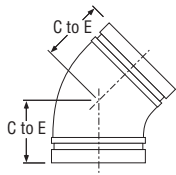


Figure 201

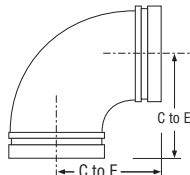


Figure 210

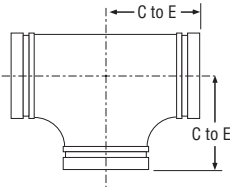


Figure 219

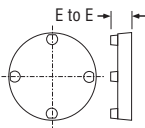


Figure 260

Nominal Size	Figure 201 45° Elbow		Figure 210 90° Elbow		Figure 219 Tee		Figure 260‡ End Cap	
	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.	E to E Inches mm	Appx. Wt. Lbs. Kg.
1 1/4"	1.75 44.5	0.9 0.4	2.75 69.9	1.0 0.5	2.75 69.9	1.4 0.6	0.88 22.4	0.4 0.2
1 1/2"	1.75 44.5	1.1 0.5	2.75 69.9	1.2 0.5	2.75 69.9	1.8 0.8	0.88 22.4	0.6 0.3
2"	2.00 50.8	1.8 0.8	3.25 82.6	2.0 0.9	3.25 82.6	2.7 1.2	0.88 22.4	0.9 0.4
2 1/2"	2.25 57.2	2.2 1.0	3.75 95.3	3.0 1.4	3.75 95.3	5.8 2.6	0.88 22.4	0.9 0.4
76.1mm	2.25 57.2	2.2 1.0	3.75 95.3	3.0 1.4	3.75 95.3	5.8 2.6	0.94 23.9	1.1 0.5
3"	2.50 63.5	3.5 1.6	4.25 108.0	4.5 2.0	4.25 108.0	7.0 3.2	0.88 22.4	1.1 0.5
108.0mm	2.88 73.0	5.5 2.5	4.75 120.7	8.5 3.9	4.75 120.7	11.5 5.2	-	-
4"	3.00 76.2	5.2 2.4	5.00 127.0	8.5 3.9	5.00 127.0	11.8 5.4	1.00 25.4	2.6 1.2
133.0mm	3.25 82.6	7.7 3.5	5.25 133.4	11.3 5.1	5.25 133.4	10.6 4.8	-	-
139.7mm	3.25 82.6	7.7 3.5	5.50 139.7	11.3 5.1	5.50 139.7	15.3 6.9	0.92 23.4	4.7 2.1
5"	3.25 82.6	8.5 3.9	5.50 139.7	13.5 6.1	5.50 139.7	17.0 7.7	1.00 25.4	5.0 2.3
159.0mm	3.50 88.9	12.0 5.4	6.00 152.4	14.6 6.6	6.00 152.4	13.9 6.3	-	-
165.1mm	3.50 88.9	12.0 5.4	6.50 165.1	18.5 8.4	6.50 165.1	26.0 11.8	1.00 25.4	7.5 3.4
6"	3.50 88.9	12.0 5.4	6.50 165.1	18.5 8.4	6.50 165.1	26.0 11.8	1.00 25.4	7.5 3.4
216.3mm	4.25 108.0	23.0 10.4	7.75 196.9	36.5 16.6	7.75 196.9	45.0 20.4	-	-
8"	4.25 108.0	23.0 10.4	7.75 196.9	36.5 16.6	7.75 196.9	45.0 20.4	1.19 30.2	12.8 5.8
10"	4.75 120.7	31.0 14.1	9.00 228.6	60.0 27.2	9.00 228.6	72.1 32.7	1.25 31.8	20.0 9.1
12"	5.25 133.4	40.0 18.1	10.00 254.0	67.0 30.4	10.00 254.0	92.5 42.0	1.25 31.8	36.0 16.3

‡ - Available with tapped plugs, contact Tyco Fire & Building Products.

Friction Resistance* (Expressed as Equivalent Straight Pipe)				
Size Inches mm	Elbow		Tee	
	90° Feet Meters	45° Feet Meters	Branch Feet Meters	Run Feet Meters
1 1/4 42.4	1.9 0.6	1.0 0.3	4.8 1.5	1.9 0.6
1 1/2 48.3	2.3 0.7	1.2 0.4	5.8 1.8	2.3 0.7
2 60.3	3.2 1.0	1.6 0.5	8.0 2.5	3.2 1.0
2 1/2 73.0	3.9 1.2	2.0 0.6	9.8 3.0	3.9 1.2
76.1mm	4.1 1.2	2.1 0.6	10.3 3.1	4.1 1.2
3 88.9	4.9 1.5	2.4 0.7	12.2 3.7	4.9 1.5
108.0mm	6.5 2.0	3.3 1.0	16.3 5.0	6.5 2.0
4 114.3	6.5 2.0	3.3 1.0	16.3 5.0	6.5 2.0
133.0mm	8.0 2.4	4.0 1.2	20.0 6.1	8.0 2.4
139.7mm	8.0 2.4	4.1 1.3	20.0 6.1	8.0 2.4
5 141.3	8.2 2.5	4.1 1.3	20.5 6.3	8.2 2.5
159.0mm	9.5 2.9	4.8 1.4	23.8 7.2	9.5 2.9
165.1mm	9.5 2.9	4.8 1.4	23.8 7.2	9.5 2.9
6 168.3	9.9 3.0	5.0 1.5	24.8 7.6	9.9 3.0
216.3mm	13.1 4.0	6.6 2.0	32.8 10.0	13.1 4.0
8 219.1	13.1 4.0	6.6 2.0	32.8 10.0	13.1 4.0
10 273.0	16.5 5.0	8.3 2.5	41.3 12.6	16.5 5.0
12 323.4	19.9 6.1	9.9 3.0	49.7 15.1	19.9 6.1

For reducing tees and branches, use the value that is corresponding to the branch size. Example: for 8" x 8" x 2" tee, the branch value 2" is 8.0 feet.

* Friction resistance for all elbows and tees except Figures 510S and 519S.

Figures 501, 510, 519 and 510DE

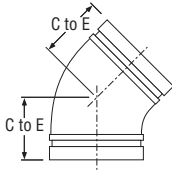


Figure 501

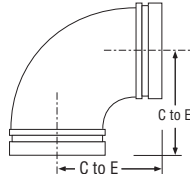


Figure 510

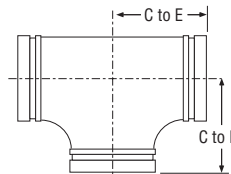


Figure 519

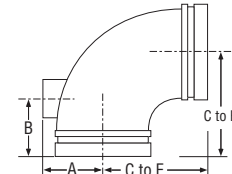


Figure 510DE

Nominal Size	Figure 501 45° Elbow		Figure 510 90° Elbow		Figure 519 Tee		Figure 510DE 90° Drain Elbow			
	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	A Inches mm	B Inches mm	Appx. Wt. Lbs. Kg.
1 1/4"	1.75 44.5	0.9 0.4	2.75 69.9	1.0 0.5	2.75 69.9	1.4 0.6	-	-	-	-
1 1/2"	1.75 44.5	1.1 0.5	2.75 69.9	1.2 0.5	2.75 69.9	1.8 0.8	-	-	-	-
2"	2.00 50.8	1.8 0.8	3.25 82.6	2.0 0.9	3.25 82.6	2.7 1.2	-	-	-	-
2 1/2"	2.25 57.2	2.2 1.0	3.75 95.3	3.0 1.4	3.75 95.3	5.8 2.6	3.75 95.3	2.00 50.8	2.75 69.9	2.7 1.2
3"	2.50 63.5	3.5 1.6	4.25 108.0	4.5 2.0	4.25 108.0	7.0 3.2	4.25 108.0	2.34 59.4	2.75 69.9	3.7 1.7
4"	3.00 76.2	5.2 2.4	5.00 127.0	8.5 3.9	5.00 127.0	11.8 5.4	5.00 127.0	2.85 72.4	2.75 69.9	7.0 3.2
5"	3.25 82.6	8.5 3.9	5.50 139.7	13.5 6.1	5.50 139.7	17.0 7.7	5.50 139.7	3.38 85.9	2.75 69.9	13.0 5.9
6"	3.50 88.9	12.0 5.4	6.50 165.1	18.5 8.4	6.50 165.1	26.0 11.8	6.50 165.1	3.92 99.6	2.75 69.9	13.4 6.1
8"	4.25 108.0	23.0 10.4	7.75 196.9	36.5 16.6	7.75 196.9	45.0 20.4	7.75 196.9	4.95 125.7	2.75 69.9	26.3 11.9

Figures 501S, 510S and 519S

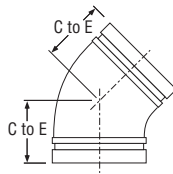


Figure 501S

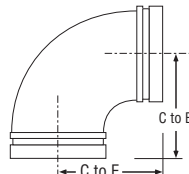


Figure 510S*

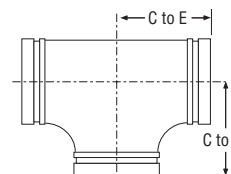


Figure 519S*

Friction Resistance 501S, 510S & 519S (Expressed as Equivalent Straight Pipe)				
Size Inches mm	Elbow		Tee	
	90° Feet Meters	45° Feet Meters	Branch Feet Meters	Run Feet Meters
2 60.3	3.2 1.0	1.6 0.5	8.0 2.5	3.2 1.0
2 1/2 73.0	3.9 1.2	2.0 0.6	9.8 3.0	3.9 1.2
76.1mm	4.1 1.2	2.1 0.6	10.3 3.1	4.1 1.2
3 88.9	4.9 1.5	2.4 0.7	12.2 3.7	4.9 1.5
4 114.3	6.5 2.0	3.3 1.0	16.3 5.0	6.5 2.0
139.7mm	8.0 2.4	4.1 1.3	20.0 6.1	8.0 2.4
5 141.3	8.2 2.5	4.1 1.3	20.5 6.3	8.2 2.5
165.1mm	9.5 2.9	4.8 1.4	23.8 7.2	9.5 2.9
6 168.3	9.9 3.0	5.0 1.5	24.8 7.6	9.9 3.0
8 219.1	13.1 4.0	6.6 2.0	32.8 10.0	13.1 4.0

Nominal Size	Figure 501S 45° Elbow		Figure 510S 90° Elbow		Figure 519S Tee	
	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.
2"	2.00 50.8	1.8 0.8	2.75 69.9	1.5 0.7	2.75 69.9	2.1 1.0
2 1/2"	2.25 57.2	2.2 1.0	3.00 76.2	2.2 1.0	3.00 76.2	3.0 1.4
76.1mm	2.25 57.2	2.2 1.0	3.00 76.2	2.3 1.0	3.00 76.2	3.1 1.4
3"	2.50 63.5	3.5 1.6	3.38 85.9	3.0 1.3	3.38 85.9	4.1 1.9
4"	3.00 76.2	5.2 2.4	4.00 101.6	5.6 2.6	4.00 101.6	7.7 3.5
139.7mm	3.25 82.6	7.7 3.5	4.88 124.0	8.6 3.9	4.88 124.0	12.0 5.4
5"	3.25 82.6	8.5 3.9	4.88 124.0	8.8 3.9	4.88 124.0	12.0 5.4
165.1mm	3.50 88.9	12.0 5.4	5.50 139.7	11.00 5.0	5.50 139.7	15.0 6.8
6"	3.50 88.9	12.0 5.4	5.50 139.7	11.2 5.1	5.50 139.7	15.2 6.9
8"	4.25 108.0	23.0 10.4	6.88 174.8	23.4 10.6	6.88 174.8	31.2 14.2

*Note: Figure 510S and 519S fittings are special short radius fittings with smaller center to end dimensions than standard grooved fittings. Depending on the size and coupling used, there may be interferences at the bolt pads which requires repositioning of the coupling orientation. The use of flange adapters is recommended for these fittings. See Tyco Fire Products for details.

Figures 250 and 350

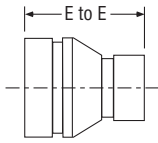


Figure 250
Cast

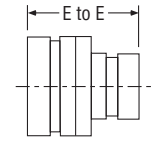


Figure 350
Fabricated
Sizes 3" to 6"

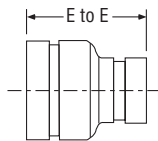
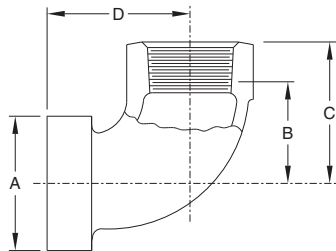


Figure 350
Fabricated
Sizes 8" to 12"

Figures 250 and 350 Concentric Reducer - Groove x Groove								
Nominal Size Inches	E to E Inches	Appx. Wt. Lbs.	Nominal Size Inches	E to E Inches	Appx. Wt. Lbs.	Nominal Size Inches	E to E Inches	Appx. Wt. Lbs.
*2 x 1¼	2.50 63.5	1.0 0.5	*139.7mm x 3	3.50 88.9	4.2 1.9	*6 x 5	4.00 101.6	5.8 2.6
*2 x 1½	2.50 63.5	1.3 0.6	*139.7mm x 4	3.50 88.9	4.4 2.0	8 x 2	5.00 127.0	12.2 5.5
*2½ x 2	2.50 63.5	1.2 0.5	5 x 1½	3.50 88.9	4.6 2.1	8 x 2½	5.00 127.0	12.1 5.5
*76.1mm x 1½	2.50 63.5	1.5 0.7	5 x 2	3.50 88.9	4.6 2.1	8 x 3	5.00 127.0	12.0 5.5
*76.1mm x 2	2.50 63.5	1.6 0.8	5 x 2½	3.50 88.9	4.5 2.0	8 x 4	5.00 127.0	11.9 5.4
3 x 1¼	2.50 63.5	1.3 0.6	5 x 3	3.50 88.9	4.4 2.0	8 x 5	5.00 127.0	11.3 5.1
3 x 1½	2.50 63.5	1.3 0.6	*5 x 4	3.50 88.9	4.5 2.0	8 x 6	5.00 127.0	10.8 4.9
*3 x 2	2.50 63.5	1.3 0.6	*165.1mm x 3	4.00 101.6	5.5 2.5	10 x 4	6.00 152.4	21.9 10.0
*3 x 2½	3.00 76.2	1.5 0.7	*165.1mm x 4	4.00 101.6	6.0 2.7	10 x 5	6.00 152.4	21.6 9.8
*3 x 76.1mm	3.00 76.2	2.0 0.9	*165.1mm x 139.7mm	4.00 101.6	5.6 2.5	10 x 6	6.00 152.4	21.1 9.6
4 x 1¼	3.00 76.2	2.2 1.0	*6 x 2	4.00 101.6	6.0 2.7	10 x 8	6.00 152.4	19.5 8.9
4 x 1½	3.00 76.2	2.3 1.0	6 x 2½	4.00 101.6	6.0 2.7	12 x 4	7.00 177.8	28.0 12.7
*4 x 2	3.00 76.2	2.3 1.0	*6 x 76.1mm	4.00 101.6	6.0 2.7	12 x 6	7.00 177.8	30.0 13.6
*4 x 2½	3.00 76.2	2.3 1.0	6 x 3	4.00 101.6	6.0 2.7	12 x 8	7.00 177.8	28.0 12.7
*4 x 76.1mm	3.00 76.2	3.2 1.5	*6 x 4	4.00 101.6	5.9 2.7	12 x 10	7.00 177.8	33.0 15.0
4 x 3	3.00 76.2	2.6 1.2	*6 x 139.7mm	4.00 101.6	6.3 2.9			

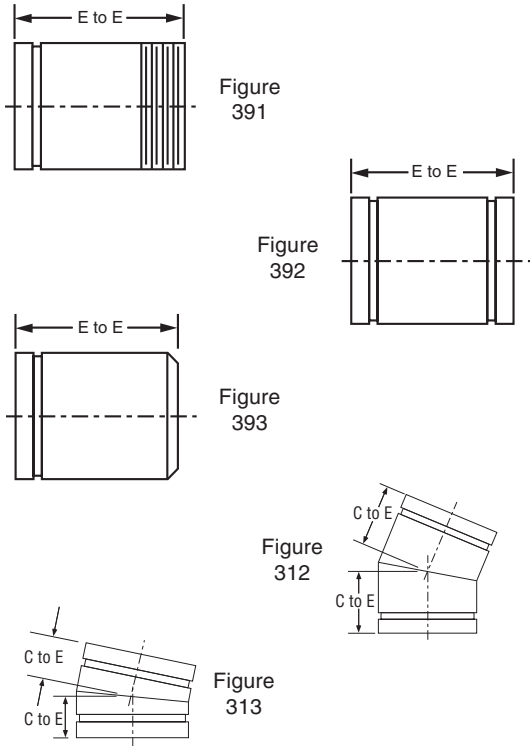
Note: Sizes marked with an asterisk (*) are only available in Figure 250 Cast.
 Sizes without an asterisk are only available in Figure 350 Fabricated.

ADA CAP® Patented



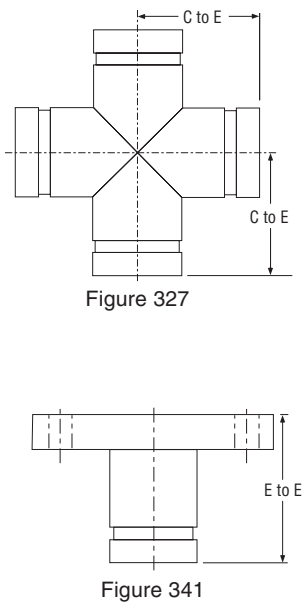
Pipe Size Inches	Outlet NPT* Inches	Nominal Dimensions				Net Wt. Lbs. Kg.
		O.D. A Inches mm	Takeout B Inches mm	Center to End C Inches mm		
1½	½	1.900 48.3	1.25 31.8	1.75 44.5	1.89 48.0	0.77 0.3
	¾		1.25 31.8	1.75 44.5	1.89 48.0	0.77 0.3
	1		1.37 34.8	2.00 50.8	2.02 51.3	0.88 0.4
2	½	2.375 60.3	1.25 31.8	1.75 44.5	1.89 48.0	0.92 0.4
	¾		1.25 31.8	1.75 44.5	1.89 48.0	0.92 0.4
	1		1.37 34.8	2.00 50.8	2.02 51.3	1.06 0.5
2½	½	2.875 73.0	1.47 37.3	1.97 50.0	1.89 48.0	1.28 0.6
	¾		1.47 37.3	1.97 50.0	1.89 48.0	1.28 0.6
	1		1.37 34.8	2.00 50.8	2.02 51.3	1.50 0.7

Figures 391, 392, 393, 312 and 313



Nominal Size	Figures 391, 392 and 393 Adapter Nipples		Figure 312 22 1/2° Elbow		Figure 313 11 1/4° Elbow	
	E to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.	C to E Inches mm	Appx. Wt. Lbs. Kg.
1 1/4"	4.00 101.6	0.8 0.4	1.75 44.5	0.4 0.2	1.38 35.1	0.4 0.2
1 1/2"	4.00 101.6	0.9 0.4	1.75 44.5	0.5 0.2	1.38 35.1	0.5 0.2
2"	4.00 101.6	1.2 0.5	1.88 47.8	0.6 0.3	1.38 35.1	0.6 0.3
2 1/2"	4.00 101.6	1.9 0.9	2.00 50.8	0.7 0.3	1.50 38.1	1.1 0.5
3"	4.00 101.6	2.5 1.1	2.25 57.2	1.4 0.6	1.50 38.1	1.2 0.5
4"	6.00 152.4	5.5 2.5	2.63 66.8	2.4 1.1	1.75 44.5	2.2 1.0
5"	6.00 152.4	7.4 3.4	2.88 73.2	4.1 1.9	2.00 50.8	3.3 1.5
6"	6.00 152.4	9.5 4.3	3.13 79.5	5.6 2.5	2.00 50.8	4.6 2.1
8"	6.00 152.4	14.2 6.4	3.88 98.6	11.1 5.0	2.00 50.8	8.7 3.9
10"	8.00 203.2	27.0 12.2	4.38 11.3	14.0 6.4	2.13 54.1	9.1 4.1
12"	8.00 203.2	33.0 15.0	4.88 124.0	22.0 10.0	2.25 57.2	16.7 7.6

Figures 327 and 341



Nominal Size	Figure 327 Cross		Figure 341 150 lbs. Flange Adapter	
	C to E Inches mm	Appx. Wt. Lbs. kg.	E to E Inches mm	Appx. Wt. Lbs. kg.
1 1/4"	2.75 69.6	2.0 0.9	4.00 101.6	2.8 1.3
1 1/2"	2.75 69.9	2.2 2.0	4.00 101.6	3.2 1.5
2"	3.25 82.6	2.7 1.2	4.0 101.6	5.2 2.4
2 1/2"	3.75 95.3	5.0 2.3	4.00 101.6	8.0 3.6
3"	4.25 108.0	7.1 3.2	4.00 101.6	10.2 4.6
4"	5.00 127.0	11.9 5.4	6.00 152.4	17.2 7.8
5"	5.50 139.7	17.1 7.8	6.00 152.4	21.4 9.7
6"	6.50 165.1	27.5 12.5	6.00 152.4	26.0 11.8
8"	7.75 196.9	47.0 21.3	6.00 152.4	38.4 17.4
10"	9.00 228.6	68.0 30.8	8.00 203.2	65.0 29.5
12"	10.00 254.0	107.0 48.5	8.00 203.2	91.0 41.3

Figure 321

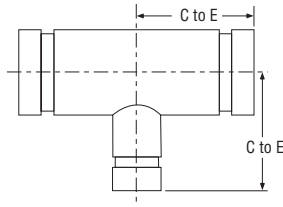


Figure 321

Figure 321 Reducing Tee					
Nominal Size Inches	C to E Inches <i>mm</i>	Appx. Wt. Lbs. <i>Kg.</i>	Nominal Size Inches	C to E Inches <i>mm</i>	Appx. Wt. Lbs. <i>Kg.</i>
1½ x 1½ x 1¼	3.25 82.6	2.0 0.9	6 x 6 x 4	6.50 165.1	26.6 12.1
2 x 2 x 1½	3.25 82.6	2.7 1.2	6 x 6 x 5	6.50 165.1	27.0 12.2
2½ x 2½ x 1¼	3.75 95.3	4.2 1.9	8 x 8 x 2	7.75 196.9	36.2 16.4
2½ x 2½ x 1½	3.75 95.3	4.2 1.9	8 x 8 x 3	7.75 196.9	36.5 16.6
2½ x 2½ x 2	3.75 95.3	4.3 2.0	8 x 8 x 4	7.75 196.9	36.6 16.6
3 x 3 x 1½	4.25 108.0	5.3 2.4	8 x 8 x 5	7.75 196.9	36.8 16.7
3 x 3 x 2	4.25 108.0	5.5 2.5	8 x 8 x 6	7.75 196.9	37.0 16.8
3 x 3 x 2½	4.25 108.0	5.8 2.6	10 x 10 x 2	9.00 228.6	57.1 25.9
4 x 4 x 1¼	5.00 127.0	9.8 4.4	10 x 10 x 3	9.00 228.6	57.4 26.0
4 x 4 x 1½	5.00 127.0	9.9 4.5	10 x 10 x 4	9.00 228.6	57.6 26.1
4 x 4 x 2	5.00 127.0	10.1 4.6	10 x 10 x 5	9.00 228.6	57.8 26.2
4 x 4 x 2½	5.00 127.0	10.3 4.7	10 x 10 x 6	9.00 228.6	58.0 26.3
4 x 4 x 3	5.00 127.0	10.5 4.8	10 x 10 x 8	9.00 228.6	58.4 26.5
5 x 5 x 2	5.50 139.7	14.5 6.6	12 x 12 x 3	10.00 254.0	80.2 36.4
5 x 5 x 2½	5.50 139.7	14.8 6.7	12 x 12 x 4	10.00 254.0	80.5 36.5
5 x 5 x 3	5.50 139.7	15.2 6.9	12 x 12 x 5	10.00 254.0	80.7 36.6
5 x 5 x 4	5.50 139.7	15.8 7.2	12 x 12 x 6	10.00 254.0	80.9 36.7
6 x 6 x 2	6.50 165.1	26.5 11.9	12 x 12 x 8	10.00 254.0	91.4 41.5
6 x 6 x 2½	6.50 165.1	26.5 12.0	12 x 12 x 10	10.00 254.0	91.8 41.6
6 x 6 x 3	6.50 165.1	26.5 12.0			

General Notes: It is the Designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data is not exceeded. Always read and understand the installation instructions (IH-1000). Never remove any piping component or correct or modify any piping deficiencies without first depressurizing and draining the system. Material and gasket selection should be verified to be compatible for the specific application.



GRINNELL G-FIRE Figure 730 Mechanical Tees and Crosses Threaded and Grooved Outlets

General Description

The GRINNELL G-FIRE Figure 730 Mechanical Tees provide an additional threaded or grooved outlet in existing piping. For new construction, the Figure 730 Mechanical Tees provide a way to bypass the use of a reducing tee. The Mechanical Tee can easily be converted to a cross.

NOTICE

The GRINNELL G-FIRE Figure 730 Mechanical Tees and Crosses described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the Approval agency, in addition to the standards of any other authorities having jurisdiction. Failure to do so may result in serious personal injury or impair the performance of these devices.

Never remove any piping component nor correct or modify any piping deficiencies without first de-pressurizing and draining the system. Failure to do so may result in serious personal injury, property damage, and/or impaired device performance.

It is the designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data are not exceeded. Material and gasket selection should be verified to be compatible for the specific application. Always read and understand the installation instructions.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Technical Data

Branch Outlet
Threaded (Female NPT or ISO 7-1)
Grooved

Maximum Working Pressure
Refer to Tables A and B

Note: Maximum pressure applies to the Mechanical Tee. When connected to a grooved coupling, the rating will be the lesser of the Mechanical Tee or Coupling rating. Maximum pressure is a total from all loads, based on standard weight steel pipe. For further information on piping specifications contact TYCO Fire Protection Products Technical Services.

Approvals
UL and ULC Listed
FM Approved
VdS Approved
LPCB Cert. Nos. 669a and 921a
Refer to Tables B and C for details.

Housing
Ductile Iron conforming to ASTM A536, Grade 65-45-12

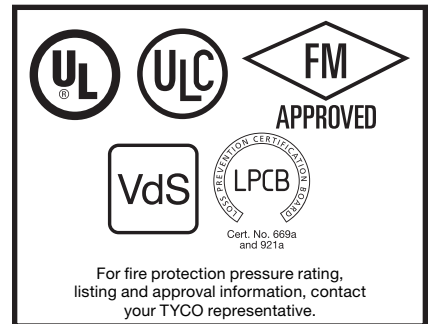
Finish

- Orange, non-lead paint
- RAL, red non-lead paint
- Hot-dipped galvanized conforming to ASTM A153

Gaskets

- Grade "E" EPDM, Green color code, -30°F to 230°F (-34°C to 110°C)

For proper gasket selection, refer to Technical Data Sheet TFP1895.



Bolts/Nuts

- **ANSI:**
Carbon Steel oval neck track head bolts are heat-treated and conform to the physical properties of ASTM A183 Grade 2 and SAE J429 Grade 5 with a minimum tensile strength of 110,000 psi (758,422 kPa)

Carbon Steel heavy hex nuts conform to the physical properties of ASTM A183 Grade 2 and SAE J995 Grade 5. Bolts and nuts are zinc-electroplated conforming to ASTM B633.

Stainless Steel Bolts and Nuts are available upon request.

- **Metric:**
Carbon Steel oval neck track head bolts (Gold color coded) are heat-treated and conform to the physical properties of ASTM F568M with a minimum tensile strength of 760 MPa.

Carbon Steel heavy hex nuts conform to the physical properties of ASTM A56M Class 9. Bolts and nuts are zinc-electroplated conforming to ASTM B633.

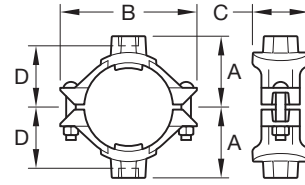
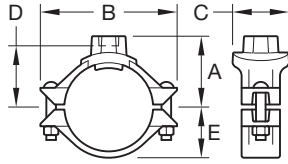


Figure 730 Tee Female NPT or ISO 7-1 Threaded Branch Outlet
 Figure 730 Cross Female NPT or ISO 7-1 Threaded Branch Outlets

Nominal Size ^c Run x Branch ANSI Inches (DN)	Hole Diameter ^a		Nominal Dimensions					Bolt ^b Size Inches (metric)	Tee Approx. Weight Lbs. (kg)	Cross Approx. Weight Lbs. (kg)
	Min. Inches (mm)	Max. Inches (mm)	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)			
2 x 1/2 (50 x 15)	1.75 (44,5)	1.88 (47,6)	2.62 (66,5)	4.88 (124,0)	3.07 (78,0)	2.12 (53,8)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.4 (1,5)
2 x 3/4 (50 x 20)	1.50 (38,1)	1.63 (41,3)	2.62 (66,5)	4.88 (124,0)	3.07 (78,0)	2.12 (53,8)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.3 (1,0)	3.0 (1,4)
2 x 1 (50 x 25)	1.50 (38,1)	1.63 (41,3)	2.62 (66,5)	4.88 (124,0)	3.07 (78,0)	2.12 (53,8)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.2 (1,0)	3.2 (1,5)
2 x 1-1/4 (50 x 32)	1.75 (44,5)	1.88 (47,6)	2.78 (70,6)	4.88 (124,0)	3.32 (84,3)	1.93 (49,0)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.4 (1,1)	3.4 (1,5)
2 x 1-1/2 (50 x 40)	1.75 (44,5)	1.88 (47,6)	2.75 (69,9)	4.88 (124,0)	3.32 (84,3)	1.93 (49,0)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.9 (1,8)
2-1/2 x 1/2 (65 x 15)	1.50 (38,1)	1.63 (41,3)	2.88 (73,2)	5.25 (133,4)	3.07 (78,0)	2.38 (60,5)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.4 (1,1)	3.4 (1,5)
2-1/2 x 3/4 (65 x 20)	1.50 (38,1)	1.63 (41,3)	2.88 (73,2)	5.25 (133,4)	3.07 (78,0)	2.38 (60,5)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.4 (1,1)	3.4 (1,5)
2-1/2 x 1 (65 x 25)	1.50 (38,1)	1.63 (41,3)	2.88 (73,2)	5.25 (133,4)	3.07 (78,0)	2.38 (60,5)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.4 (1,1)	3.4 (1,5)
2-1/2 x 1-1/4 (65 x 32)	2.00 (50,8)	2.13 (54,0)	3.00 (76,2)	5.25 (133,4)	3.56 (90,4)	2.19 (55,6)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.8 (1,7)
2-1/2 x 1-1/2 (65 x 40)	2.00 (50,8)	2.13 (54,0)	3.07 (78,0)	5.25 (133,4)	3.59 (91,2)	2.17 (55,1)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.6 (1,2)	4.1 (1,9)
2-1/2 x 2 (65 x 50)	2.00 (50,8)	2.13 (54,0)	3.19 (81,0)	5.25 (133,4)	4.00 (101,6)	2.44 (62,0)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.7 (1,2)	4.1 (1,9)
76,1mm x 1/2 (65 x 15)	1.50 (38,1)	1.63 (41,3)	2.94 (74,5)	5.62 (142,7)	3.07 (78,0)	2.44 (62,0)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.5 (1,6)
76,1mm x 3/4 (65 x 20)	1.50 (38,1)	1.63 (41,3)	2.94 (74,5)	5.62 (142,7)	3.07 (78,0)	2.44 (62,0)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.5 (1,6)
76,1mm x 1 (65 x 25)	1.50 (38,1)	1.63 (41,3)	2.94 (74,5)	5.62 (142,7)	3.07 (78,0)	2.44 (62,0)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.5 (1,6)
76,1mm x 1-1/4 (65 x 32)	2.00 (50,8)	2.13 (54,0)	3.06 (77,7)	5.62 (142,7)	3.56 (90,4)	2.25 (57,2)	1.87 (47,5)	- (M10 x 57)	3.3 (1,5)	5.1 (2,3)
76,1mm x 1-1/2 (65 x 40)	2.00 (50,8)	2.13 (54,0)	3.13 (79,5)	5.62 (142,7)	3.56 (90,4)	2.25 (57,2)	1.87 (47,5)	- (M10 x 57)	3.6 (1,6)	5.7 (2,6)
76,1mm x 2 (65 x 50)	2.00 (50,8)	2.13 (54,0)	3.25 (82,6)	5.62 (142,7)	4.00 (101,6)	2.50 (63,5)	1.87 (47,5)	- (M10 x 57)	3.7 (1,7)	5.8 (2,6)
3 x 1/2 (80 x 15)	1.50 (38,1)	1.63 (41,3)	3.19 (81,0)	6.13 (155,7)	3.07 (78,0)	2.56 (65,0)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.7 (1,7)	5.2 (2,4)
3 x 3/4 (80 x 20)	1.50 (38,1)	1.63 (41,3)	3.19 (81,0)	6.13 (155,7)	3.07 (78,0)	2.56 (65,0)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.7 (1,7)	5.2 (2,4)
3 x 1 (80 x 25)	1.50 (38,1)	1.63 (41,3)	3.19 (81,0)	6.13 (155,7)	3.07 (78,0)	2.56 (65,0)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.7 (1,7)	5.2 (2,4)
3 x 1-1/4 (80 x 32)	1.75 (44,5)	1.88 (47,6)	3.34 (84,8)	6.13 (155,7)	3.32 (84,3)	2.50 (63,5)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.5 (1,6)	4.6 (2,1)
3 x 1-1/2 (80 x 40)	2.00 (50,8)	2.13 (54,0)	3.38 (85,9)	6.13 (155,7)	3.56 (90,4)	2.48 (63,0)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.7 (1,7)	5.2 (2,4)
3 x 2 (80 x 50)	1.75 (44,5)	1.88 (47,6)	3.50 (88,9)	6.13 (155,7)	4.09 (103,9)	2.75 (69,9)	2.21 (56,1)	1/2 x 3 (M12 x 76)	4.7 (2,1)	6.8 (3,1)
4 x 1/2 (100 x 15)	1.50 (38,1)	1.63 (41,3)	3.69 (93,7)	7.13 (181,1)	3.07 (78,0)	3.06 (77,7)	2.78 (70,6)	1/2 x 3 (M12 x 76)	4.8 (2,2)	5.6 (2,5)

a. Proper outlet hole preparation is required for effective sealing and performance. Inspect the pipe seal surface within 5/8 inch (15,9 mm) of the hole to ensure it is free from conditions that would adversely affect proper gasket sealing. Remove any sharp or rough edges from the hole or upper housing contact area that might affect assembly, proper seating of the locating collar or flow from the outlet. For Mechanical Crosses, ensure double outlet holes are aligned on opposite sides of the pipe. The use of threaded components other than steel pipe, such as dry type sprinklers, etc. may not be compatible with the female threaded outlets of Mechanical Tees and Crosses. Always confirm compatibility by contacting your TYCO Fire Protection Products Technical Services representative.

b. Gold color coded metric bolt sizes are available upon request.

c. Refer to Table C for pipe O.D. cross-reference.

FIGURE 1 (PART 1 OF 3)
FIGURE 730 MECHANICAL TEES AND CROSSES
THREADED OUTLETS

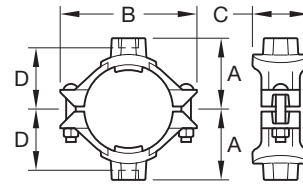
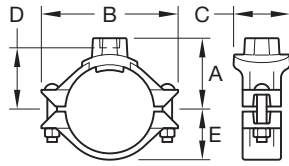


Figure 730 Tee Female NPT or ISO 7-1 Threaded Branch Outlet
Figure 730 Cross Female NPT or ISO 7-1 Threaded Branch Outlets

Nominal Size ^c Run x Branch ANSI Inches (DN)	Hole Diameter ^a		Nominal Dimensions					Bolt ^b Size Inches (metric)	Tee Approx. Weight Lbs. (kg)	Cross Approx. Weight Lbs. (kg)
	Min. Inches (mm)	Max. Inches (mm)	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)			
4 x 3/4 (100 x 20)	1.50 (38,1)	1.63 (41,3)	3.69 (93,7)	7.13 (181,1)	3.07 (78,0)	3.06 (77,7)	2.78 (70,6)	1/2 x 3 (M12 x 76)	4,8 (2,2)	5,6 (2,5)
4 x 1 (100 x 25)	1.50 (38,1)	1.63 (41,3)	3.69 (93,7)	7.13 (181,1)	3.07 (78,0)	3.06 (77,7)	2.78 (70,6)	1/2 x 3 (M12 x 76)	4,8 (2,2)	5,6 (2,5)
4 x 1-1/4 (100 x 32)	1.75 (44,5)	1.88 (47,6)	3.92 (99,6)	7.13 (181,1)	3.32 (84,3)	3.00 (76,2)	2.78 (70,6)	1/2 x 3 (M12 x 76)	4,8 (2,2)	5,6 (2,5)
4 x 1-1/2 (100 x 40)	2.00 (50,8)	2.13 (54,0)	4.00 (101,6)	7.13 (181,1)	3.56 (90,4)	2.98 (75,7)	2.78 (70,6)	1/2 x 3 (M12 x 76)	5,1 (2,3)	6,4 (2,5)
4 x 2 (100 x 50)	2.50 (63,5)	2.63 (66,7)	4.00 (101,6)	7.13 (181,1)	4.06 (103,1)	3.25 (82,6)	2.78 (70,6)	1/2 x 3 (M12 x 76)	5,5 (2,5)	7,3 (3,3)
4 x 2-1/2 (100 x 65)	2.75 (69,9)	2.88 (73,0)	4.00 (101,6)	7.13 (181,1)	4.38 (111,3)	3.12 (79,2)	2.78 (70,6)	1/2 x 3 (M12 x 76)	6,2 (2,8)	8,7 (3,9)
4 x 76,1mm (100 x 65)	2.75 (69,9)	2.88 (73,0)	4.00 (101,6)	7.13 (181,1)	4.38 (111,3)	3.12 (79,2)	2.78 (70,6)	- (M12 x 76)	6,2 (2,8)	8,7 (3,9)
4 x 3 (100 x 80)	3.50 (88,9)	3.63 (92,1)	4.13 (104,9)	7.13 (181,1)	5.13 (130,3)	3.31 (84,1)	2.78 (70,6)	1/2 x 3 (M12 x 76)	7,8 (3,5)	11,9 (5,4)
5 x 1-1/2 (125 x 40)	2.00 (50,8)	2.13 (54,0)	4.63 (117,6)	8.13 (206,5)	3.56 (90,4)	4.00 (101,6)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	7,8 (3,5)	9,4 (4,3)
5 x 2 (125 x 50)	2.50 (63,5)	2.63 (66,7)	4.63 (117,6)	8.13 (206,5)	4.06 (103,1)	3.88 (98,6)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	7,8 (3,5)	9,4 (4,3)
5 x 2-1/2 (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.88 (98,6)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	8,9 (4,0)	11,5 (5,2)
5 x 76,1mm (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.88 (98,6)	3.37 (85,6)	- (M16 x 121)	8,9 (4,0)	11,5 (5,2)
5 x 3 (125 x 80)	3.50 (88,9)	3.63 (92,1)	5.00 (127,0)	8.13 (206,5)	5.13 (130,3)	4.06 (103,1)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	12,7 (5,8)	13,3 (6,0)
139,7mm x 1-1/2 (125 x 40)	2.00 (50,8)	2.13 (54,0)	4.63 (117,6)	8.13 (206,5)	3.56 (90,4)	4.00 (101,6)	3.37 (85,6)	- (M16 x 121)	7,8 (3,5)	9,4 (4,3)
139,7mm x 2 (125 x 50)	2.50 (63,5)	2.63 (66,7)	4.63 (117,6)	8.13 (206,5)	4.06 (103,1)	3.88 (98,6)	3.37 (85,6)	- (M16 x 121)	7,8 (3,5)	9,4 (4,3)
139,7mm x 2-1/2 (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.88 (98,6)	3.37 (85,6)	- (M16 x 121)	8,9 (4,0)	11,5 (5,2)
139,7mm x 76,1mm (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.88 (98,6)	3.37 (85,6)	- (M16 x 121)	8,9 (4,0)	11,5 (5,2)
139,7mm x 3 (125 x 80)	3.50 (88,9)	3.63 (92,1)	5.00 (127,0)	8.13 (206,5)	5.13 (130,3)	4.06 (103,1)	3.37 (85,6)	- (M16 x 121)	12,7 (5,8)	13,3 (6,0)
6 x 1-1/4 (150 x 32)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	4.25 (108,0)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	7,5 (3,4)	8,7 (3,9)
6 x 1-1/2 (150 x 40)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	4.04 (102,6)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	7,5 (3,4)	8,7 (3,9)
6 x 2 (150 x 50)	2.50 (63,5)	2.63 (66,7)	5.13 (130,3)	9.25 (235,0)	4.06 (103,1)	4.31 (109,5)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	7,7 (3,5)	9,5 (4,3)
6 x 2-1/2 (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	4.18 (106,2)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	8,9 (4,0)	11,3 (5,1)
6 x 76,1mm (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	4.18 (106,2)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	8,9 (4,0)	11,3 (5,1)
6 x 3 (150 x 80)	3.50 (88,9)	3.63 (92,1)	5.50 (139,7)	9.25 (235,0)	5.13 (130,3)	4.37 (111,0)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	10,3 (4,7)	14,1 (6,4)

- a. Proper outlet hole preparation is required for effective sealing and performance. Inspect the pipe seal surface within 5/8 inch (15,9 mm) of the hole to ensure it is free from conditions that would adversely affect proper gasket sealing. Remove any sharp or rough edges from the hole or upper housing contact area that might affect assembly, proper seating of the locating collar or flow from the outlet. For Mechanical Crosses, ensure double outlet holes are aligned on opposite sides of the pipe. The use of threaded components other than steel pipe, such as dry type sprinklers, etc. may not be compatible with the female threaded outlets of Mechanical Tees and Crosses. Always confirm compatibility by contacting your TYCO Fire Protection Products Technical Services representative.
- b. Gold color coded metric bolt sizes are available upon request.
- c. Refer to Table C for pipe O.D. cross-reference.

FIGURE 1 (PART 2 OF 3)
FIGURE 730 MECHANICAL TEES AND CROSSES
THREADED OUTLETS

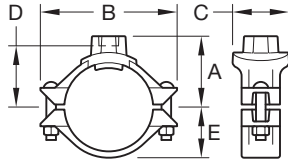


Figure 730 Tee
 Female NPT or ISO 7-1 Threaded Branch Outlet

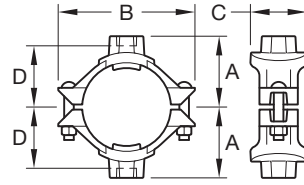


Figure 730 Cross
 Female NPT or ISO 7-1 Threaded Branch Outlets

Nominal Size ^c Run x Branch ANSI Inches (DN)	Hole Diameter ^a		Nominal Dimensions					Bolt ^b Size Inches (metric)	Tee Approx. Weight Lbs. (kg)	Cross Approx. Weight Lbs. (kg)
	Min. Inches (mm)	Max. Inches (mm)	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)			
6 x 4 (150 x 100)	4.50 (114,3)	4.63 (117,5)	5.38 (136,7)	9.25 (235,0)	6.13 (155,7)	4.56 (115,8)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	11.9 (5,4)	17.3 (9,1)
165,1mm x 1-1/4 (150 x 32)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	4.25 (108,0)	3.90 (99,1)	– (M16 x 121)	7.7 (3,5)	9.5 (4,3)
165,1mm x 1-1/2 (150 x 40)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	4.04 (102,6)	3.90 (99,1)	– (M16 x 121)	7.7 (3,5)	9.5 (4,3)
165,1mm x 2 (150 x 50)	2.50 (63,5)	2.63 (66,7)	5.13 (130,3)	9.25 (235,0)	4.06 (103,1)	4.31 (109,5)	3.90 (99,1)	– (M16 x 121)	8.2 (3,7)	9.5 (4,3)
165,1mm x 2-1/2 (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	4.18 (106,2)	3.90 (99,1)	– (M16 x 121)	9.0 (4,1)	11.3 (5,1)
165,1mm x 76,1mm (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	4.18 (106,2)	3.90 (99,1)	– (M16 x 121)	9.0 (4,1)	11.3 (5,1)
165,1mm x 3 (150 x 80)	3.50 (88,9)	3.63 (92,1)	5.50 (139,7)	9.25 (235,0)	5.13 (130,3)	4.37 (111,0)	3.90 (99,1)	– (M16 x 121)	10.5 (4,8)	14.1 (6,4)
8 x 2 (200 x 50)	2.50 (63,5)	2.63 (66,7)	6.25 (158,8)	12.50 (317,5)	4.06 (103,1)	5.50 (139,7)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	12.1 (5,5)	14.1 (6,4)
8 x 2-1/2 (200 x 65)	2.75 (69,9)	2.88 (73,0)	6.25 (158,8)	12.50 (317,5)	4.38 (111,3)	5.12 (130,0)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	12.6 (5,7)	15.0 (6,8)
8 x 76,1mm (200 x 65)	2.75 (69,9)	2.88 (73,0)	6.25 (158,8)	12.50 (317,5)	4.38 (111,3)	5.12 (130,0)	4.90 (124,5)	– (M20 x 121)	12.6 (5,7)	15.0 (6,8)
8 x 3 (200 x 80)	3.50 (88,9)	3.63 (92,1)	6.50 (165,1)	12.50 (317,5)	5.13 (130,3)	5.37 (136,4)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	13.6 (6,1)	16.9 (7,7)
8 x 4 (200 x 100)	4.50 (114,3)	4.63 (117,5)	6.38 (162,1)	12.50 (317,5)	6.13 (155,7)	5.56 (141,2)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	15.2 (6,9)	20.0 (9,1)

- a. Proper outlet hole preparation is required for effective sealing and performance. Inspect the pipe seal surface within 5/8 inch (15,9 mm) of the hole to ensure it is free from conditions that would adversely affect proper gasket sealing. Remove any sharp or rough edges from the hole or upper housing contact area that might affect assembly, proper seating of the locating collar or flow from the outlet. For Mechanical Crosses, ensure double outlet holes are aligned on opposite sides of the pipe. The use of threaded components other than steel pipe, such as dry type sprinklers, etc. may not be compatible with the female threaded outlets of Mechanical Tees and Crosses. Always confirm compatibility by contacting your TYCO Fire Protection Products Technical Services representative.
- b. Gold color coded metric bolt sizes are available upon request.
- c. Refer to Table C for pipe O.D. cross-reference.

FIGURE 1 (PART 3 OF 3)
FIGURE 730 MECHANICAL TEES AND CROSSES
THREADED OUTLETS

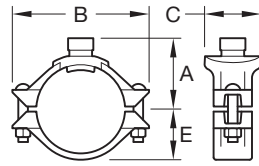


Figure 730 Tee
Grooved Branch Outlet

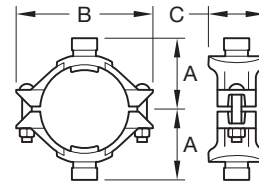


Figure 730 Cross
Grooved Branch Outlet

Nominal Size ^c Run x Branch ANSI Inches (DN)	Hole Diameter ^a		Nominal Dimensions				Bolt ^b Size Inches (metric)	Tee Approx. Weight Lbs. (kg)	Cross Approx. Weight Lbs. (kg)
	Min. Inches (mm)	Max. Inches (mm)	A Inches (mm)	B Inches (mm)	C Inches (mm)	E Inches (mm)			
2 x 1-1/4 (50 x 32)	1.75 (44,5)	1.88 (47,6)	2.78 (70,6)	4.88 (124,0)	3.32 (84,3)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.3 (1,5)
2 x 1-1/2 (50 x 40)	1.75 (44,5)	1.88 (47,6)	2.62 (66,5)	4.88 (124,0)	3.32 (84,3)	1.59 (40,4)	3/8 x 2-1/4 (M10 x 57)	2.4 (1,1)	3.7 (1,7)
2-1/2 x 1-1/4 (65 x 32)	2.00 (50,8)	2.13 (54,0)	3.00 (76,2)	5.25 (133,4)	3.56 (90,4)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.8 (1,7)
2-1/2 x 1-1/2 (65 x 40)	2.00 (50,8)	2.13 (54,0)	3.07 (78,0)	5.25 (133,4)	3.59 (91,2)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.9 (1,8)
2-1/2 x 2 (65 x 50)	2.00 (50,8)	2.13 (54,0)	3.19 (81,0)	5.25 (133,4)	4.00 (101,6)	1.81 (46,0)	3/8 x 2-1/4 (M10 x 57)	2.5 (1,1)	3.8 (1,7)
76,1mm x 1 (65 x 25)	1.50 (38,1)	1.63 (41,3)	2.94 (74,5)	5.62 (142,7)	3.07 (78,0)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.5 (1,6)
76,1mm x 1-1/4 (65 x 32)	2.00 (50,8)	2.13 (54,0)	3.06 (77,7)	5.62 (142,7)	3.56 (90,4)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.8 (1,7)
76,1mm x 1-1/2 (65 x 40)	2.00 (50,8)	2.13 (54,0)	3.13 (79,5)	5.62 (142,7)	3.56 (90,4)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.9 (1,8)
76,1mm x 2 (65 x 50)	2.00 (50,8)	2.13 (54,0)	3.25 (82,6)	5.62 (142,7)	4.00 (101,6)	1.87 (47,5)	- (M10 x 57)	2.5 (1,1)	3.8 (1,7)
3 x 1-1/4 (80 x 32)	1.75 (44,5)	1.88 (47,6)	3.34 (84,8)	6.13 (155,7)	3.32 (84,3)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.5 (1,6)	4.6 (2,1)
3 x 1-1/2 (80 x 40)	2.00 (50,8)	2.13 (54,0)	3.38 (85,9)	6.13 (155,7)	3.56 (90,4)	2.21 (56,1)	1/2 x 3 (M12 x 76)	3.6 (1,6)	5.0 (2,3)
3 x 2 (80 x 50)	2.50 (63,5)	2.63 (66,7)	3.50 (88,9)	6.13 (155,7)	4.09 (103,9)	2.21 (56,1)	1/2 x 3 (M12 x 76)	4.5 (2,0)	6.4 (2,9)
4 x 1-1/4 (100 x 32)	1.75 (44,5)	1.88 (47,6)	3.92 (99,6)	7.13 (181,1)	3.32 (84,3)	2.78 (70,6)	1/2 x 3 (M12 x 76)	4.8 (2,2)	5.6 (2,5)
4 x 1-1/2 (100 x 40)	2.00 (50,8)	2.13 (54,0)	4.00 (101,6)	7.13 (181,1)	3.56 (90,4)	2.78 (70,6)	1/2 x 3 (M12 x 76)	5.0 (2,3)	6.2 (2,8)
4 x 2 (100 x 50)	2.50 (63,5)	2.63 (66,7)	4.00 (101,6)	7.13 (181,1)	4.06 (103,1)	2.78 (70,6)	1/2 x 3 (M12 x 76)	5.3 (2,4)	6.9 (3,1)
4 x 2-1/2 (100 x 65)	2.75 (69,9)	2.88 (73,0)	4.00 (101,6)	7.13 (181,1)	4.38 (111,3)	2.78 (70,6)	1/2 x 3 (M12 x 76)	5.9 (2,7)	8.2 (3,7)
4 x 76,1mm (100 x 65)	2.75 (69,9)	2.88 (73,0)	4.00 (101,6)	7.13 (181,1)	4.38 (111,3)	2.78 (70,6)	- (M12 x 76)	5.9 (2,7)	8.2 (3,7)
4 x 3 (100 x 80)	3.50 (88,9)	3.63 (92,1)	4.13 (104,9)	7.13 (181,1)	5.13 (130,3)	2.78 (70,6)	1/2 x 3 (M12 x 76)	7.4 (3,4)	11.1 (5,0)
5 x 1-1/2 (125 x 40)	2.00 (50,8)	2.13 (54,0)	4.63 (117,6)	8.13 (206,5)	3.56 (90,4)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	7.7 (3,5)	9.2 (4,2)
5 x 2 (125 x 50)	2.50 (63,5)	2.63 (66,7)	4.63 (117,6)	8.13 (206,5)	4.06 (103,1)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	7.6 (3,4)	9.0 (4,1)
5 x 2-1/2 (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	8.6 (3,9)	11.0 (5,0)
5 x 76,1mm (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.37 (85,6)	- (M16 x 121)	8.6 (3,9)	11.0 (5,0)
5 x 3 (125 x 80)	3.50 (88,9)	3.63 (92,1)	5.00 (127,0)	8.13 (206,5)	5.13 (130,3)	3.37 (85,6)	5/8 x 4-3/4 (M16 x 121)	12.3 (5,6)	12.5 (5,7)
139,7mm x 1-1/2 (125 x 40)	2.00 (50,8)	2.13 (54,0)	4.63 (117,6)	8.13 (206,5)	3.56 (90,4)	3.37 (85,6)	- (M16 x 121)	7.7 (3,5)	9.2 (4,2)

- a. Proper outlet hole preparation is required for effective sealing and performance. Inspect the pipe seal surface within 5/8 inch (15,9 mm) of the hole to ensure it is free from conditions that would adversely affect proper gasket sealing. Remove any sharp or rough edges from the hole or upper housing contact area that might affect assembly, proper seating of the locating collar or flow from the outlet. For Mechanical Crosses, ensure double outlet holes are aligned on opposite sides of the pipe.
- b. Gold color coded metric bolt sizes are available upon request.
- c. Refer to Table C for pipe O.D. cross-reference.

FIGURE 2 (PART 1 OF 2)
FIGURE 730 MECHANICAL TEES AND CROSSES
GROOVED OUTLETS

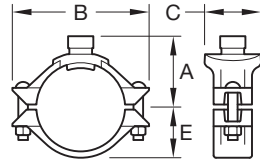


Figure 730 Tee
Grooved Branch Outlet

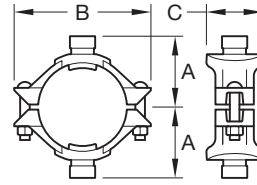


Figure 730 Cross
Grooved Branch Outlet

Nominal Size ^c Run x Branch ANSI Inches (DN)	Hole Diameter ^a		Nominal Dimensions				Bolt ^b Size Inches (metric)	Tee Approx. Weight Lbs. (kg)	Cross Approx. Weight Lbs. (kg)
	Min. Inches (mm)	Max. Inches (mm)	A Inches (mm)	B Inches (mm)	C Inches (mm)	E Inches (mm)			
139,7mm x 2 (125 x 50)	2.50 (63,5)	2.63 (66,7)	4.63 (117,6)	8.13 (206,5)	4.06 (103,1)	3.37 (85,6)	— (M16 x 121)	7.6 (3,4)	9.0 (4,1)
139,7mm x 2-1/2 (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.37 (85,6)	— (M16 x 121)	8.6 (3,9)	11.0 (5,0)
139,7mm x 76,1mm (125 x 65)	2.75 (69,9)	2.88 (73,0)	4.75 (120,7)	8.13 (206,5)	4.38 (111,3)	3.37 (85,6)	— (M16 x 121)	8.6 (3,9)	11.0 (5,0)
139,7mm x 3 (125 x 80)	3.50 (88,9)	3.63 (92,1)	5.00 (127,0)	8.13 (206,5)	5.13 (130,3)	3.37 (85,6)	— (M16 x 121)	12.3 (5,6)	12.5 (5,7)
6 x 1-1/4 (150 x 32)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	7.7 (3,5)	9.5 (4,3)
6 x 1-1/2 (150 x 40)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	7.6 (3,4)	9.3 (4,2)
6 x 2 (150 x 50)	2.50 (63,5)	2.63 (66,7)	5.13 (130,3)	9.25 (235,0)	4.06 (103,1)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	8.0 (3,6)	9.1 (4,1)
6 x 2-1/2 (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	8.8 (4,0)	10.8 (4,9)
6 x 76,1mm (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	8.8 (4,0)	10.8 (4,9)
6 x 3 (150 x 80)	3.50 (88,9)	3.63 (92,1)	5.50 (139,7)	9.25 (235,0)	5.13 (130,3)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	10.1 (4,6)	13.3 (6,0)
6 x 4 (150 x 100)	4.50 (114,3)	4.63 (117,5)	5.38 (136,7)	9.25 (235,0)	6.13 (155,7)	3.90 (99,1)	5/8 x 4-3/4 (M16 x 121)	11.6 (5,3)	16.3 (7,4)
165,1mm x 1-1/4 (150 x 32)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	3.90 (99,1)	— (M16 x 121)	7.7 (3,5)	9.5 (4,3)
165,1mm x 1-1/2 (150 x 40)	2.00 (50,8)	2.13 (54,0)	5.13 (130,3)	9.25 (235,0)	3.56 (90,4)	3.90 (99,1)	— (M16 x 121)	7.6 (3,4)	9.3 (4,2)
165,1mm x 2 (150 x 50)	2.50 (63,5)	2.63 (66,7)	5.13 (130,3)	9.25 (235,0)	4.06 (103,1)	3.90 (99,1)	— (M16 x 121)	8.0 (3,6)	9.1 (4,1)
165,1mm x 2-1/2 (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	3.90 (99,1)	— (M16 x 121)	8.8 (4,0)	10.8 (4,9)
165,1mm x 76,1mm (150 x 65)	2.75 (69,9)	2.88 (73,0)	5.13 (130,3)	9.25 (235,0)	4.38 (111,3)	3.90 (99,1)	— (M16 x 121)	8.8 (4,0)	10.8 (4,9)
165,1mm x 3 (150 x 80)	3.50 (88,9)	3.63 (92,1)	5.50 (139,7)	9.25 (235,0)	5.13 (130,3)	3.90 (99,1)	— (M16 x 121)	10.1 (4,6)	13.3 (6,0)
165,1mm x 4 (150 x 100)	4.50 (114,3)	4.63 (117,5)	5.38 (136,7)	9.25 (235,0)	6.13 (155,7)	3.90 (99,1)	— (M16 x 121)	11.6 (5,3)	16.3 (7,4)
8 x 2 (200 x 50)	2.50 (63,5)	2.63 (66,7)	6.25 (158,8)	12.50 (317,5)	4.06 (103,1)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	12.1 (5,5)	14.1 (6,4)
8 x 2-1/2 (200 x 65)	2.75 (69,9)	2.88 (73,0)	6.25 (158,8)	12.50 (317,5)	4.38 (111,3)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	12.3 (5,6)	14.5 (6,6)
8 x 76,1mm (200 x 65)	2.75 (69,9)	2.88 (73,0)	6.25 (158,8)	12.50 (317,5)	4.38 (111,3)	4.90 (124,5)	— (M20 x 121)	12.3 (5,6)	14.5 (6,6)
8 x 3 (200 x 80)	3.50 (88,9)	3.63 (92,1)	6.50 (165,1)	12.50 (317,5)	5.13 (130,3)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	13.2 (6,0)	16.1 (7,3)
8 x 4 (200 x 100)	4.50 (114,3)	4.63 (117,5)	6.38 (162,1)	12.50 (317,5)	6.13 (155,7)	4.90 (124,5)	3/4 x 4-3/4 (M20 x 121)	14.7 (6,7)	19.0 (8,6)

- a. Proper outlet hole preparation is required for effective sealing and performance. Inspect the pipe seal surface within 5/8 inch (15,9 mm) of the hole to ensure it is free from conditions that would adversely affect proper gasket sealing. Remove any sharp or rough edges from the hole or upper housing contact area that might affect assembly, proper seating of the locating collar or flow from the outlet. For Mechanical Crosses, ensure double outlet holes are aligned on opposite sides of the pipe.
- b. Gold color coded metric bolt sizes are available upon request.
- c. Refer to Table C for pipe O.D. cross-reference.

FIGURE 2 (PART 2 OF 2)
FIGURE 730 MECHANICAL TEES AND CROSSES
GROOVED OUTLETS

Nominal Pipe Sizes ANSI Inches	Pipe Schedule ^b	Pressure Rating psi (bar)		
		UL	ULC	FM
2 x: 1/2; 3/4; 1; 1-1/4; 1-1/2 2-1/2 x: 1/2; 3/4; 1; 1-1/4; 1-1/2; 2 3 x: 1/2; 3/4; 1; 1-1/4; 1-1/2; 2 4 x: 1/2; 3/4; 1; 1-1/4; 1-1/2; 2; 2-1/2; 3 5 x: 1-1/2; 2; 2-1/2; 3 6 x: 1-1/4; 1-1/2; 2; 2-1/2 8 ^a x: 2; 2-1/2; 3; 4	10	300 (20,7)	300 (20,7)	300 (20,7)
	40	300 (20,7)	300 (20,7)	300 (20,7)
6 x: 3; 4	10	250 (17,2)	250 (17,2)	300 (20,7)
	40	250 (17,2)	250 (17,2)	300 (20,7)
4 x 76,1 mm	10	300 (20,7)	300 (20,7)	300 (20,7)
	40	300 (20,7)	300 (20,7)	300 (20,7)

Pipe O.D. mm	Pipe Specification ^b	Pressure Rating psi (bar)	
		UL	FM
76,1 x: 21,3; 26,7; 33,7; 42,4; 48,3 139,7 x: 60,3; 76,1 165,1 x: 48,3; 60,3; 88,9; 114,3	ISO 4200 Type D, E, and F EN 10255 Medium EN 10255 Heavy	—	300 (20,7)
139,7 x: 48,3; 88,9 165,1 x 42,4	ISO 4200 Type D and E	300 (20,7)	300 (20,7)
	ISO 4200 Type F	300 (20,7)	300 (20,7)
	EN 10255 Heavy EN 10255 Medium	—	300 (20,7)
165,1 x 76,1	ISO 4200 Type D, E, and F	—	300 (20,7)
	EN 10255 Heavy EN 10255 Medium	300 (20,7)	300 (20,7)

Pipe O.D. Sizes mm	Pipe Specification ^c	Pressure Rating psi (bar)	
		LPCB	VdS
60,3 x: 21,3; 26,7; 33,7; 42,4; 48,3 76,1x: 21,3; 26,7; 33,7; 42,4; 48,3; 60,3 88,9 x: 21,3; 26,7; 33,7; 42,4; 48,3; 60,3 114,3 x: 21,3; 26,7; 33,7; 42,4; 48,3; 60,3; 76,1; 88,9 165,1 x: 42,2; 48,3; 60,3; 76,1; 88,9; 114,3	ISO 65 Medium	290 (20)	—
168,3 x: 42,4; 48,3; 60,3; 76,1; 88,9; 114,3 219,1 x: 76,1; 88,9; 114,3	ISO 4200 Wall Thickness 5,4 mm	290 (20)	—
60,3 x: 21,3; 26,7; 33,7; 42,4; 48,3 76,1 x: 21,3; 26,7; 33,7; 42,4; 48,3; 60,3 88,9 x: 21,3; 26,7; 33,7; 42,4; 48,3; 60,3 114,3 x: 21,3; 26,7; 33,7; 42,4; 48,3; 60,3; 76,1; 88,9 168,3 x: 42,4; 48,3; 60,3; 76,1 219,1 x: 60,3; 76,1	DIN 2448 or 2548	—	232 (16)

- a. For 8 inch sizes, minimum allowed pipe wall thickness is 0.188.
b. See Agency website for Listing/Approvals of other pipe specifications:
UL Website - see Online Certificate Directory, www.ul.com
FM Global Website - www.approvalguide.com
c. See Agency website for Listing/Approvals of other pipe specifications:
LPCB Website - see Search Our Listings - Automatic Sprinklers, Water Spray and Deluge Systems, www.redbooklive.com
VdS Website - see certifications, www.vds.de

TABLE A
FIGURE 730 MECHANICAL TEES AND CROSSES - THREADED OUTLETS
LISTED/APPROVED PRESSURE RATINGS

Nominal Pipe Sizes ANSI Inches	Pipe Schedule ^b	Pressure Rating psi (bar)		
		UL	ULC	FM
2 x: 1-1/4; 1-1/2 2-1/2 x: 1-1/4; 1-1/2; 2 3 x: 1-1/4; 1-1/2; 2 4 x: 1-1/4; 1-1/2; 2; 2-1/2 5 x: 1-1/2; 2; 2-1/2; 3 6 x: 1-1/4; 1-1/2; 2; 2-1/2 8 ^a x: 2; 2-1/2	10	300 (20,7)	300 (20,7)	300 (20,7)
	40	300 (20,7)	300 (20,7)	300 (20,7)
4 x 3	10	175 (12)	175 (12)	300 (20,7)
	40	175 (12)	175 (12)	300 (20,7)
6 x: 3; 4 8 ^a x: 3; 4	10	250 (17,2)	250 (17,2)	300 (20,7)
	40	250 (17,2)	250 (17,2)	300 (20,7)

Pipe O.D. mm	Pipe Specification ^b	Pressure Rating psi (bar)	
		UL	FM
76,1 x: 42,4; 48,3; 60,3 165,1 x: 42,4; 48,3; 60,3	ISO 4200 Type D, E, and F	—	300 (20,7)
	EN 10255 Heavy EN 10255 Medium	250 (17,2)	300 (20,7)
139,7 x: 48,3; 88,9;	ISO 4200 Type D and E	300 (20,7)	300 (20,7)
	ISO 4200 Type F		300 (20,7)
	EN 10255 Heavy EN 10255 Medium		300 (20,7)
139,7 x: 60,3; 76,1 165,1 x: 88,9; 114,3	ISO 4200 Type D, E, and F	—	300 (20,7)
	EN 10255 Heavy EN 10255 Medium		
165,1 x 42,4	ISO 4200 Type D and E	300 (20,7)	300 (20,7)
	ISO 4200 Type F	—	300 (20,7)
	EN 10255 Heavy EN 10255 Medium	250 (17,2)	300 (20,7)
165,1 x 76,1	ISO 4200 Type D, E, and F	—	300 (20,7)
	EN 10255 Heavy EN 10255 Medium	300 (20,7)	300 (20,7)

- a. For 8 inch sizes, minimum allowed pipe wall thickness is 0.188.
b. See Agency website for Listing/Approvals of other pipe specifications:
UL Website - see Online Certificate Directory, www.ul.com
FM Global Website - www.approvalguide.com

TABLE B (PART 1 OF 2)
FIGURE 730 MECHANICAL TEES AND CROSSES – GROOVED OUTLETS
LISTED/APPROVED PRESSURE RATINGS

Pipe O.D. Size mm	Pipe Specification ^c	Pressure Rating psi (bar)	
		LPCB	VdS
60,3 x: 42,4; 48,3 76,1 x: 42,4; 48,3; 60,3 88,9 x: 42,4; 48,3; 60,3 114,3 x: 42,4; 48,3; 60,3; 76,1; 88,9 165,1 x: 42,2; 48,3; 60,3; 76,1; 88,9; 114,3	ISO 65 Medium	290 (20)	—
168,3 x: 42,4; 48,3; 60,3; 76,1; 88,9; 114,3 219,1 x: 76,1; 88,9; 114,3	ISO 4200 Wall Thickness 5,4 mm	290 (20)	—
60,3 x: 42,4; 48,3 76,1 x: 42,4; 48,3; 60,3 88,9 x: 42,4; 48,3; 60,3 114,3 x: 42,4; 48,3; 60,3; 76,1; 88,9 168,3 x: 42,4; 48,3; 60,3; 76,1; 88,9; 114,3 219,1 x: 60,3; 76,1; 88,9; 114,3	DIN 2448 or 2548	—	232 (16)

c. See Agency website for Listing/Approvals of other pipe specifications:
LPCB Website - see Search Our Listings - Automatic Sprinklers, Water Spray and Deluge Systems, www.redbooklive.com
VdS Website - see certifications, www.vds.de

TABLE B (PART 2 OF 2)
FIGURE 730 MECHANICAL TEES AND CROSSES – GROOVED OUTLETS
LISTED/APPROVED PRESSURE RATINGS

Pipe Size		Pipe Size		Pipe Size	
Nominal ANSI Inches (DN)	O.D. Inches (mm)	Nominal ANSI Inches (DN)	O.D. Inches (mm)	Nominal ANSI Inches (DN)	O.D. Inches (mm)
1/2 (15)	0.840 (21,3)	2 (50)	2.375 (60,3)	— (125)	5.500 (139,7)
3/4 (20)	1.050 (26,7)	2-1/2 (65)	2.875 (73,0)	5 (125)	5.563 (141,3)
1 (25)	1.315 (33,7)	— (65)	3.000 (76,1)	— (150)	6.500 (165,1)
1-1/4 (32)	1.660 (42,4)	3 (80)	3.500 (88,9)	6 (150)	6.625 (168,3)
1-1/2 (40)	1.900 (48,3)	4 (100)	4.500 (114,3)	8 (200)	8.625 (219,1)

TABLE C
PIPE SIZE CROSS REFERENCE

Care and Maintenance

The GRINNELL Figure 730 Mechanical Tees and Crosses must be maintained in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to

shut down the affected fire protection system from the proper authorities and notify all personnel who may be affected by this action.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to

the standards of any other authorities having jurisdiction. Contact the installing contractor or sprinkler manufacturer regarding any questions.

Automatic sprinkler systems should be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national code.

Nominal Size Run x Branch ANSI Inches (DN)	Equivalent Length of Sch. 40 Steel Pipe, Feet (Meters)		Nominal Size Run x Branch ANSI Inches (DN)	Equivalent Length of Sch. 40 Steel Pipe, Feet (Meters)	
	Threaded	Grooved		Threaded	Grooved
2 x 1/2 (DN50 x DN15)	8.5**	N/A	5 x 2 (DN125 x DN50)	5 (1,52)	
2 x 3/4 (DN50 x DN20)	20**	N/A	5 x 2-1/2 (DN125 x DN65)	10 (3,05)	
2 x 1 (DN50 x DN25)	2 (0,60)	N/A	5 x 76,1mm* (DN125 x DN65)	11 (3,35)	
2 x 1-1/4 (DN50 x DN32)	4 (1,22)		5 x 3 (DN125 x DN80)	13 (3,96)	
2 x 1-1/2 (DN50 x DN40)	13 (3,96)		139,7mm x 1-1/2 (DN125 x DN40)	3 (0,91)	
2-1/2 x 1 (DN65 x DN25)	2 (0,60)	N/A	139,7mm x 2 (DN125 x DN50)	5 (1,52)	
2-1/2 x 1-1/4 (DN65 x DN32)	4 (1,22)		139,7mm x 2-1/2 (DN125 x DN65)	10 (3,05)	
2-1/2 x 1-1/2 (DN65 x DN40)	3 (0,91)		139,7mm x 76,1mm* (DN125 x DN65)	11 (3,35)	
2-1/2 x 2 (DN65 x DN50)	26 (7,92)		139,7mm x 3 (DN125 x DN80)	13 (3,96)	
76,1mm x 1/2 (DN65 x DN15)	8.5**	N/A	6 x 1-1/4 (DN150 x DN32)	4 (1,22)	
76,1mm x 3/4 (DN65 x DN20)	20**	N/A	6 x 1-1/2 (DN150 x DN40)	3 (0,91)	
76,1mm x 1 (DN65 x DN25)	2 (0,60)	N/A	6 x 2 (DN150 x DN50)	5 (1,52)	
76,1mm x 1-1/4 (DN65 x DN32)	4 (1,22)		6 x 2-1/2 (DN150 x DN65)	10 (3,05)	
76,1mm x 1-1/2 (DN65 x DN40)	3 (0,91)		6 x 76,1mm* (DN150 x DN65)	11 (3,35)	
76,1mm x 2 (DN65 x DN50)	26 (7,92)		6 x 3 (DN150 x DN80)	9 (2,74)	
3 x 1/2 (DN80 x DN15)	8.5**	N/A	6 x 4 (DN150 x DN100)	14 (4,27)	
3 x 3/4 (DN80 x DN20)	20**	N/A	165,1mm x 1-1/4 (DN150 x DN32)	4 (1,22)	
3 x 1 (DN80 x DN25)	2 (0,60)		165,1mm x 1-1/2 (DN150 x DN40)	3 (0,91)	
3 x 1-1/4 (DN80 x DN32)	4 (1,22)		165,1mm x 2 (DN150 x DN50)	5 (1,52)	
3 x 1-1/2 (DN80 x DN40)	3 (0,91)		165,1mm x 2-1/2 (DN150 x DN65)	10 (3,05)	
3 x 2 (DN80 x DN50)	5 (1,52)		165,1mm x 76,1mm* (DN150 x DN65)	11 (3,35)	
4 x 1/2 (DN100 x DN15)	8.5**	N/A	165,1mm x 3 (DN150 x DN80)	9 (2,74)	
4 x 3/4 (DN100 x DN20)	20**	N/A	165,1mm x 4 (DN150 x DN100)	14 (4,27)	
4 x 1 (DN100 x DN25)	2 (0,60)	N/A	8 x 2 (DN200 x DN50)	5 (1,52)	
4 x 1-1/4 (DN100 x DN32)	4 (1,22)		8 x 2-1/2 (DN200 x DN65)	10 (3,05)	
4 x 1-1/2 (DN100 x DN40)	3 (0,91)		8 x 76,1mm* (DN200 x DN65)	11 (3,35)	
4 x 2 (DN100 x DN50)	5 (1,52)		8 x 3 (DN200 x DN80)	N/A	9 (2,74)
4 x 2-1/2 (DN100 x DN65)	10 (3,05)		8 x 4 (DN200 x DN100)	N/A	14 (4,27)
4 x 76,1mm* (DN100 x DN65)	11 (3,35)				
4 x 3 (DN100 x DN80)	13 (3,96)				
5 x 1-1/2 (DN125 x DN40)	3 (0,91)				

* Note: Equivalent Length of EN10255:2004 Heavy Pipe
**Minimum Discharge Coefficient (k)
Hazen Williams coefficient = 120
N/A = Not Available

TABLE D
FIGURE 730 MECHANICAL TEES AND CROSSES
LOSS AS EQUIVALENT PIPE LENGTH

Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

GRINNELL Products are available globally through a network of distribution centers. Visit www.tyco-fire.com for the nearest distributor.

When placing an order indicate the full product name. Specify the quantity, Figure 730, fitting type (specify), size (ANSI inch or pipe OD), outlet type (specify), thread specification (as applicable, specify), and gasket type (specify):

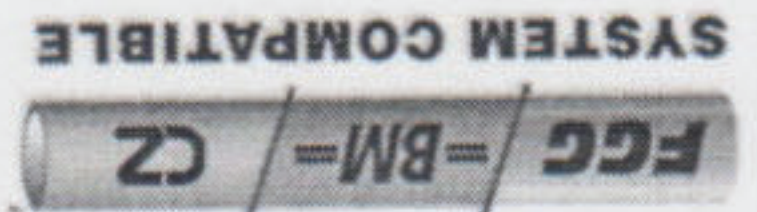
Fitting Type
Tee
Cross

Outlet Type
Threaded
Grooved

Thread Specification
NPT
ISO 7-1

Gasket Type
Grade "E" EPDM

Effective February 23, 2009



700 South Dock Street, Sharon, PA 16146
 Ph 800.257.8182 Fax 724.346.7260
 www.wheatland.com

Wheatland Tube Company



Coated Black Sprinkler Pipe



* The CRF is a ratio value used to measure the ability of a pipe to withstand corrosion. Threaded Schedule 40 steel pipe is used as the benchmark (value of 1.0).

* Calculated using Standard UL CRF formula, UL Fire Protection Directory, Category VIZY

NPS	Nominal O.D.		Nominal I.D.		Nominal Wall		Nominal Weight		UL CRF*	Pieces Lift
	in.	mm	in.	mm	in.	mm	lbs./ft.	kg/m		
1 1/4	1.660	42.2	1.442	36.6	.109	2.77	1.81	2.69	7.3	61
1 1/2	1.900	48.3	1.682	42.7	.109	2.77	2.09	3.11	5.8	61
2	2.375	60.3	2.157	54.8	.109	2.77	2.64	3.93	4.7	37
2 1/2	2.875	73.0	2.635	66.9	.120	3.05	3.53	5.26	3.5	30
3	3.500	88.9	3.260	82.8	.120	3.05	4.34	6.46	2.6	19
4	4.500	114.3	4.260	108.2	.120	3.05	5.62	8.37	1.6	19
5	5.563	141.3	5.295	134.5	.134	3.40	7.78	11.58	1.5	13
6	6.625	168.3	6.357	161.5	.134	3.40	9.30	13.85	1.0	10

Specifications

Wheatland's schedule 10 Sprinkler Pipe is made from the highest quality steel in one of the nation's most modern and most complete pipe manufacturing plants. Our proprietary mill coating offers you a clean, corrosion and heat resistant surface that outlasts and outperforms standard lacquer coatings. Plus, this coating can be quickly and easily painted without special preparation. Or it may be hot-dipped galvanized to meet FM requirements for dry systems in accordance with the zinc coating specification of ASTM A795 or A53.

Please refer to appropriate documentation for up-to-date listing and approval information. Specifications and descriptions are accurate as known at time of publication and are subject to change without notice.

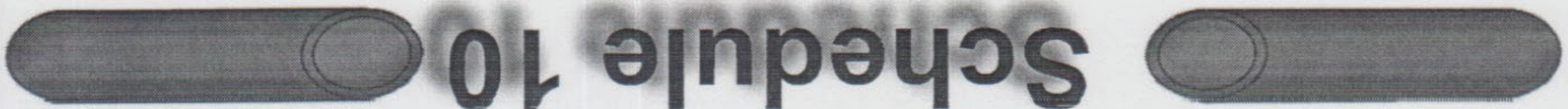
- UL & C-UL Listed
- FM Approved
- ASTM A135, Grade A

Wheatland's Schedule 10 Lightwall Sprinkler Pipe meets or exceeds the following:

Made in the U.S.A. by Wheatland Tube Company means made to the highest standards for consistent quality.

Wheatland's Schedule 10 Sprinkler Pipe is a high quality sprinkler pipe offering you the full range of assurances you require. Schedule 10 Sprinkler Pipe has passed some of the toughest lab tests ever created for sprinkler pipe.

Sprinkler Pipe



Wheatland's



Designation: B 6 - 03

American Association of State Highway and Transportation Officials Standard AASHTO No: M120-77

Standard Specification for Zinc¹

This standard is issued under the fixed designation B 6; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript (e) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This specification covers zinc metal made from ore or other material by a process of distillation or by electrolysis in three grades as follows:

- 1.1.1 Special High Grade,
- 1.1.2 High Grade,
- 1.1.3 Prime Western.

Note 1—Certain continuous galvanizing grades are specified in Specification B 852. Other continuous galvanizing and controlled lead grades are not included in this specification but are covered by specific user purchasing specifications.

1.2 This specification does not cover zinc produced by "sweating" or remelting of secondary zinc.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to become familiar with all hazards including those identified in the appropriate Material Data Sheet for this product/material as provided by the manufacturer, to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 The following documents of the issue in effect on the date of material purchase form a part of this specification to the extent referenced herein.

2.2 ASTM Standards:²

B 852 Specification for Continuous Galvanizing Grade (CGG) Zinc Alloys for Hot-Dip Galvanizing of Sheet Steel

¹This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.04 on Zinc and Cadmium. Current edition approved Nov. 1, 2003. Published November 2003. Originally approved in 1911. Last previous edition approved in 2000 as B 6 - 00. ²For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

*A Summary of Changes section appears at the end of this standard.

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B 899 Terminology Relating to Non-ferrous Metals and Alloys

B 914 Practice for Color Codes on Zinc and Zinc Alloy Ingot for Use in Hot-Dip Galvanizing of Steel

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E 47 Test Methods for Chemical Analysis of Zinc Die-Casting Alloys³

E 88 Practice for Sampling Nonferrous Metals and Alloys in Cast Form for Determination of Chemical Composition

E 527 Practice for Numbering Metals and Alloys (UNS)

E 536 Test Methods for Chemical Analysis of Zinc and Zinc Alloys

3.1 Terms shall be defined in accordance with Terminology B 899.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 Special High Grade, *n*—a high purity grade of zinc containing a minimum of 99.990% zinc, with controlled impurity levels, as specified in Table 1.

3.2.2 High Grade, *n*—a grade of zinc containing a minimum of 99.90% zinc, with controlled impurity levels, as specified in Table 1.

3.2.3 Prime Western, *n*—a grade of zinc containing 0.5–1.4% lead, a minimum of 98.0% zinc, with controlled impurity levels, as specified in Table 1.

3.3 Abbreviations:

3.3.1 SHG—Special High Grade Zinc

3.3.2 HG—High Grade Zinc

3.3.3 PW—Prime Western Zinc

4. Ordering Information

4.1 Orders for zinc metal under this specification shall include the following information:

4.1.1 ASTM designation and year of issue,

4.1.2 Quantity (weight),

4.1.3 Name of material (zinc metal),

4.1.4 Size (see Section 7), and

³Withdrawn.

TABLE 2 Methods of Analysis

Method	Designation
Chemical analysis (for tin)	E 47
Chemical analysis	E 536

10.1 The chemical compositions enumerated in this specification shall, in case of disagreement, be determined by methods mutually agreed upon or the methods listed in Table 2

10. Methods of Chemical Analysis

9.4 Aspects of sampling and sample preparation not covered specifically in this specification shall be carried out in accordance with Practice E 88.

9.3 If the zinc is in shapes other than standard slabs, the sampling procedure shall be agreed upon between the manufacturer or seller and the purchaser.

9.2.5 *Size of Sample and Storage*—The prepared sample shall weigh at least 1600 g for Special High Grade zinc, and at least 300 g for other grades of zinc. The properly mixed sample shall be split into three equal parts, each of which shall be placed in a sealed package, one for the manufacturer, one for the purchaser, and one for a referee, if necessary. Tight, leak-proof, paper sample envelopes or cardboard cartons may be used to hold the sample.

9.2.4 *Sawing*—Using, preferably, a heat treated high-speed steel saw, make two cuts completely across and through the slab from one long side to the other. Each cut shall be approximately halfway between the center and each end. The width of the saw cut shall be sufficient to give the weight of sample prescribed in 9.2.5, and cuttings from all the slabs shall be mixed thoroughly to form a uniform sample.

9.2.3 *Drilling*—Two holes shall be drilled, preferably from the bottom or brand side of each slab, at two points located from smaller lots, five slabs shall be taken. From smaller lots, one slab shall be taken from every 10 000 lb (4530 kg) of zinc, one slab containing at least 60 000 lb (27 300 kg) of zinc, one slab shall be taken during loading or unloading. The portion preferably shall be taken during loading or total shipment or order shall be selected at random for the final sample. The portion shall be taken during loading or unloading. From lots containing at least 60 000 lb (27 300 kg) of zinc, one slab shall be taken from every 10 000 lb (4530 kg).

9.2.2 *Preparation of Sample*—Each slab shall be cleaned thoroughly to rid the surface of extraneous material and drilled or sawed, without lubricant in accordance with 9.2.3 or 9.2.4. The drillings or sawings shall be subjected to the action of a strong magnet to remove any adventitious iron with which the sample may have become contaminated from the drill or saw. Note 2—Sampling by sawing is not recommended for Special High Grade zinc because complete removal of the final traces of adventitious iron from sawings is difficult.

9.2.1 *Selection of Portion*—A portion representative of the total shipment or order shall be selected at random for the final sample. The portion preferably shall be taken during loading or unloading. From lots containing at least 60 000 lb (27 300 kg) of zinc, one slab shall be taken from every 10 000 lb (4530 kg).

9.2 If the zinc is in the form of standard slabs at the customer's plant, the sample for chemical analysis shall be taken in accordance with 9.2.1-9.2.5, inclusive.

9.1 The producer may obtain representative samples from the molten metal during casting, and all or part of these samples may be cast into shapes suitable for use in spectrochemical methods.

8. Appearance

8.1 The zinc metal shall be reasonably free of surface corrosion and adhering foreign matter.

7. Sizes and Shapes

7.1 Slabs varying in weight from 40 to 60 lb (18 to 27 kg) are all considered standard slabs.

6. Chemical Composition

6.1 The zinc metal shall conform to the requirements prescribed in Table 1.

5. Materials and Manufacture

5.1 The manufacturer shall use care to have each lot of zinc metal of as uniform quality as possible.

4.1.5 Grade (see Table 1).

3. UNS designations were established in accordance with Practice E 527. Refer to Practice B 914.

TABLE 1 Chemical Requirements

Grade (UNS) ^a	Color ^b	Lead	Iron, min.	Cadmium, max.	Aluminum, num. per. Cop.	Tin, max.	Total Non-Zinc, max.	Zinc, min. by difference
Special High Grade (Z13001)	Yellow	0.003, max	0.003	0.002	0.002	0.001	0.010	99.990
High Grade (Z15001)	Green	0.03, max	0.02	0.01	0.10	99.90
Prime Western (Z19001)	Black	0.5-1.4	0.05	0.20	0.01	0.20	2.0	98.0

Note 1—The following applies to all specified limits in this table: For purposes of determining conformance with this specification, an observed value obtained from analysis shall be rounded off "to the nearest unit" in the last right-hand place of figures used in expressing the limiting value, in accordance with the rounding method of Practice E 29.

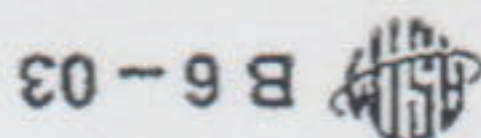


TABLE 1 Chemical Requirements



Address: 5790 NW 165 TER
Folio #: 3220130010058
MDC Process #: M2024026378
MDC Tracking #: 3224026378
Job Description: REVISION TO LAYOUT

Master Permit #: BLC2022-1704

Sub Permit #: SME2023-3299

Revision #: REV2024-2343

OFFICE USE ONLY

ZONING	Approved	Date	Disapproved	BUILDING	Approved	Date	Disapproved	STRUCT.	Approved	Date	Disapproved
	Date				Date				Date		
	Initials				Initials				Initials		
ROOFING	Approved	Date	Disapproved	ELECT.	Approved	Date	Disapproved	MECH.	Approved	Date	Disapproved
	Date				Date				Date		
	Initials				Initials				Initials		
PLUMBING	Approved	Date	Disapproved	FLOOD	Approved	Date	Disapproved		Approved	Date	Disapproved
	Date				Date				Date		
	Initials				Initials				Initials		

PLANS CHECKED-OUT

DATE	NAME

PLANS CHECKED-IN

DATE	NAME

	AMOUNTS
BASE PERMIT	
ZONING FEE	
CODE COMPLIANCE FEE	
TECHNOLOGY FEE	
DBPR SURCH. STATE	
DBPR SURCH. BUILDING	
SCANNING FEE	
WORK W/O PERMIT FEE	
UPFRONT FEE PAID	
BALANCE DUE:	



6601 Main St • Miami Lakes, Florida, 33014
 Office: (305) 827-4015 • Fax: (305) 558-9884
 Website: www.miamilakes-fl.gov

BUILDING PERMIT APPLICATION

Job Address: 5790 NW 165th Terrace, Miami Lakes, FL 33014

Unit #:

Folio #: 32- 2013-001-0058 Owner-Builder:

Master Permit #: BLC2022-1704

Sub Permit #: SME2023-3299

Revision #: REV 2024-2313

OWNER INFORMATION	NAME : 16401 NW 58TH SP LLC	LEGAL USE/ WORK	Current Use of Property: <u>Vacant land for new storage</u>
	Address: 100 Wilshire Blvd #400		Job Description _____
	City, State, Zip Santa Monica, CA 90401		Prov _____
	Phone #: _____ Cell #: _____		<u>Re-work fire sprinkler layout</u>
	Email Address: _____		JOB COST \$ <u>276,500.00</u> AREA/LENGTH: _____ SF/LF
CONTRACTOR INFORMATION	Company Name: Southern Fire Control, Inc.	ARCHITECT/ ENGINEER	Residential <input type="checkbox"/> Multi-Family <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/>
	Qualifier Name: Christopher Johnson		Code in Effect: _____
	License # FPC16-000018		Occupancy: _____
	Address 6861 SW 196th Ave #304		Construction Type: _____
	City, State, Zip Pembroke Pines, FL 33332		Flood Zone/B.F.E.: _____ F.F.E.: _____
	Phone #: 954-858-1600 Cell #: _____		Firm Name: _____
	Email Address: Office@SouthernFireControl.com		A/E of record: _____

Permit Type -- Check only One <input type="checkbox"/> Building <input type="checkbox"/> Electrical <input checked="" type="checkbox"/> Mechanical <input type="checkbox"/> Plumbing/Gas <input type="checkbox"/> Paving/Drainage <input type="checkbox"/> Sign <input type="checkbox"/> Roofing <input type="checkbox"/> P/W	Change to Permit -- Check only One <input type="checkbox"/> Extension <input type="checkbox"/> Renewal <input checked="" type="checkbox"/> Revision <input type="checkbox"/> Change Contractor <input type="checkbox"/> Shop Drawing <input type="checkbox"/> Cancellation
---	--

Application is hereby made to obtain a permit to do work and installation as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards, of all laws regulating construction in this jurisdiction. I understand that a separate permit must be secured for ELECTRICAL WORK, MECHANICAL, PLUMBING, SIGNS, WELLS, POOLS, RE-ROOFING, SHUTTERS, WINDOWS, FURNACES, BOILERS, HEATERS, TANKS, and AIR CONDITIONERS, etc. I understand that in signing this application I am responsible for the supervision and completion of the construction including scheduling of inspections and obtaining final inspections in accordance with the plans and specification WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR ATTORNEY OR LENDER BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT. OWNER/CONTRACTOR AFFIDAVIT: I Certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.

X Timothy B. Hobin
 Signature of Owner or Owner's Agent Date 9/23/24
 Timothy B. Hobin
 Print Name of Owner or Owner's Agent

X Christopher Johnson
 Signature of Qualifier Date 09/19/24
 Christopher Johnson
 Print Name of Qualifier

STATE OF _____ COUNTY OF _____
 Sworn to and subscribed before me this _____ 20____
 by _____ (SEAL)
 Personally known or I.D. _____

STATE OF Florida COUNTY OF Broward
 Sworn to and subscribed before me this 19th Day of September 2024
 by Christopher Johnson
 Personally known or I.D. _____
 ZACHARY NORRIS (SEAL)
 Commission # HH 564945
 Expires June 24, 2028

NOTICE: In addition to the requirements of this permit, there may be additional deed restrictions enforced by the homeowner's associations that may be applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies.

CALIFORNIA ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of Orange }
On Oct 23, 2023 before me, Michelle D. Carbone, Notary.
Date Here Insert Name and Title of the Officer
personally appeared Timothy B. Hobin
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Place Notary Seal and/or Stamp Above

Signature Michelle D. Carbone
Signature of Notary Public

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Building Permit App.
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____
Capacity(ies) Claimed by Signer(s)
Signer's Name: _____ Signer's Name: _____
 Corporate Officer - Title(s): _____ Corporate Officer - Title(s): _____
 Partner - Limited General Partner - Limited General
 Individual Attorney in Fact Individual Attorney in Fact
 Trustee Guardian or Conservator Trustee Guardian or Conservator
 Other: _____ Other: _____
Signer is Representing: _____ Signer is Representing: _____

Victaulic® FireLock™ Series FL-ECOH

Extended Coverage, Standard and Quick Response Upright, Pendent and Recessed Pendent Sprinklers K11.2 (16.2), K14.0 (20.2)



1.0 PRODUCT DESCRIPTION

EXTENDED COVERAGE UPRIGHT SPRINKLERS		
SIN	V1121	V3425
ORIENTATION	UPRIGHT	UPRIGHT
K-FACTOR ¹	11.2 Imp./16.1 S.I.	14.0 Imp./20.2 S.I.1
CONNECTION	¾" NPT/ 20mm BSPT	¾" NPT/ 20mm BSPT/IGS Grooved
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL1121	-

EXTENDED COVERAGE PENDENT SPRINKLERS		
SIN	V1113	V3421
ORIENTATION	PENDENT	PENDENT
K-FACTOR ¹	11.2 Imp./16.1 S.I.	14.0 Imp./20.2 S.I.
CONNECTION	¾" NPT/ 20mm BSPT	¾" NPT/ 20mm BSPT/IGS Grooved
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL1113	-

EXTENDED COVERAGE RECESSED PENDENT SPRINKLERS		
SIN	V1113	V3421
ORIENTATION	RECESSED PENDENT	RECESSED PENDENT
K-FACTOR ¹	11.2 Imp./16.1 S.I.	14.0 Imp./20.2 S.I.
CONNECTION	¾" NPT/ 20mm BSPT	¾" NPT/ 20mm BSPT
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL1113	-

AVAILABLE WRENCHES					
SPRINKLER	V11 Recessed	V11 Open End	V34 Recessed	V34 Open End	⅜ Hex-Bit (V9)
Upright	■	■	■	■	■
Pendent	■	■	■	■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: UL: 7psi/48 kPa/.5 bar

Temperature Rating: See tables in section 2.0

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



2.0 CERTIFICATION/LISTINGS



SIN		V1121						
Nominal K Factor Imperial		11.2						
Nominal K Factor S.I. ²		16.2						
Installation Type		UPRIGHT						
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 x 14 4.3 x 4.3	UL	QR	30 114	7.2 50	39 148	12.1 83	155°F/68°C 200°F/93°C	11 3.4
16 x 16 4.9 x 4.9	UL	SR	39 148	12.1 83	51 196	20.7 143	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	49 185	19.1 132	65 246	33.7 232	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	60 227	28.7 198	80 303	51 352	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

SIN		V3425						
Nominal K Factor Imperial		14.0						
Nominal K Factor S.I. ²		20.2						
Installation Type		UPRIGHT						
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 x 14 4.3 x 4.3	UL	SR	39 148	7.8 54	51 193	13.3 92	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	8 2.4
16 x 16 4.9 x 4.9	UL	SR	39 149	7.8 54	51 196	13.3 92	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	49 186	12.3 85	65 246	21.6 149	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	60 227	18.4 127	80 303	32.7 226	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

² For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

NOTES

- Listings and approval as of printing.



2.0 CERTIFICATION/LISTINGS (CONTINUED)



SIN		V1113							
Nominal K Factor Imperial		11.2							
Nominal K Factor S.I. ²		16.2							
Installation Type		Pendent/Recessed Pendent							
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	Adjustment In mm	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 x 14 4.3 x 4.3	UL	QR	½ and ¾ 15 and 20	30 114	7.2 50	39 148	12.1 83	155°F/68°C 200°F/93°C	9 2.7
16 x 16 4.9 x 4.9	UL	SR	½ and ¾ 15 and 20	39 148	12.1 83	51 196	20.7 143	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	½ and ¾ 15 and 20	49 185	19.1 132	65 246	33.7 232	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	½ and ¾ 15 and 20	60 227	28.7 198	80 303	51 352	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

SIN		V3421							
Nominal K Factor Imperial		14.0							
Nominal K Factor S.I. ²		20.2							
Installation Type		Pendent/Recessed Pendent							
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	Adjustment In mm	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 X 14 4.3 X 4.3	UL	SR	½ and ¾ 15 and 20	39.0 148	7.8 54	51.0 193	13.3 92	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	12 3.7
16 X 16 4.9 X 4.9	UL	SR	½ and ¾ 15 and 20	39.0 149	7.8 55	51 196	13.3 93	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	½ and ¾ 15 and 20	49.0 186	12.3 85	65 246	21.6 149	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	½ and ¾ 15 and 20	60 227	18.4 127	80.0 303	32.7 226	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

² For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

NOTES

- Listings and approval as of printing.



3.0 SPECIFICATIONS – MATERIAL

Deflector: Bronze

Bulb Nominal Diameter: 3.0mm

Load Screw: Bronze

Pip Cap: Bronze

Spring Seal Assembly: PTFE coated Beryllium nickel alloy

Frame: Brass

Lodgement Spring: Stainless Steel

Installation Wrench: Ductile iron

Sprinkler Frame Finishes:

- Plain brass
- Chrome plated
- White polyester painted^{3, 4}
- Flat black polyester painted^{3, 4}
- Custom polyester painted^{3, 4}
- VC-250⁵

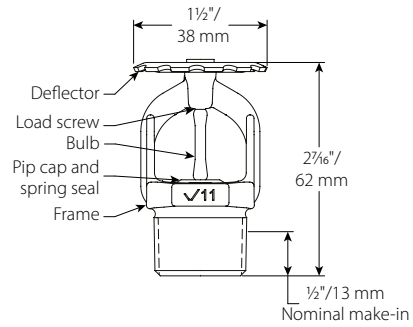
³ Not available on the Intermediate Level Style Pendant.

⁴ UL Listed for corrosion resistance.

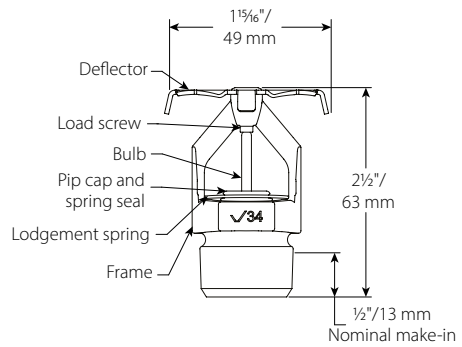
⁵ UL Listed and FM Approved for corrosion resistance.

NOTE

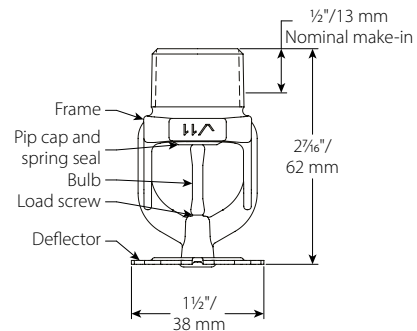
- For cabinets and other accessories refer to separate sheet.



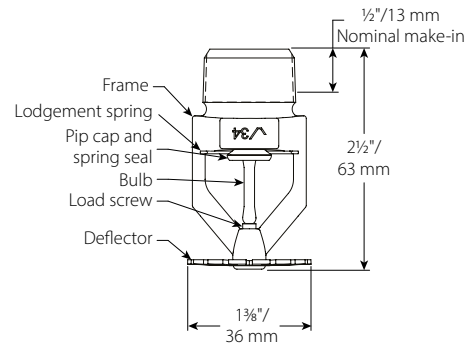
V1121



V3425

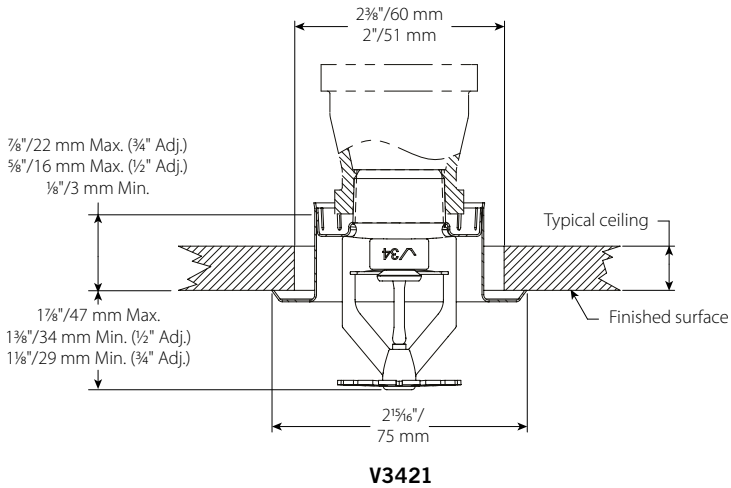
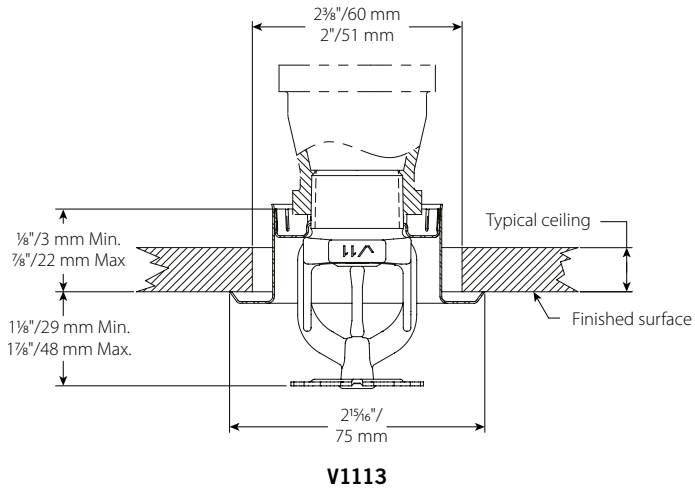


V1113



V3421


4.0 DIMENSIONS



5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

6.0 NOTIFICATIONS

⚠ WARNING	
	<ul style="list-style-type: none"> • Read and understand all instructions before attempting to install any Victaulic products. • Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products. • Wear safety glasses, hardhat, and foot protection. <p>Failure to follow these instructions could result in death or serious personal injury and property damage.</p>
<ul style="list-style-type: none"> • These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc. • The installer shall understand the use of this product and why it was specified for the particular application. • The installer shall understand common industry safety standards and potential consequences of improper product installation. • It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment. • The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service. <p>Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.</p>	

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from -67°F/-55°C.

[1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[1-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.

Victaulic® FireLock™ Series FL-QR/SW

Standard Coverage, Quick Response

Horizontal Sidewall and Recessed Horizontal Sidewall Sprinklers K2.8 (4.0), K4.2 (6.1), K5.6 (8.1), K8.0 (11.5)



1.0 PRODUCT DESCRIPTION

QUICK RESPONSE HORIZONTAL SIDEWALL				
SIN	V2826	V4226	V2710	V3410
ORIENTATION	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall
K-FACTOR ¹	2.8 Imp./4.0 S.I.	4.2 Imp./6.1 S.I.	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	½" NPT/15mm BSPT	½" NPT/15mm BSPT	½" NPT/15mm BSPT/IGS	¾" NPT/ 20mm BSPT/IGS
MAX. WORKING PRESSURE	175 psi/1200 kPa	175 psi/1200 kPa	175 psi/1200 kPa	175 psi/1200 kPa
GLOBE RE-DESIGNATION	GL2826	GL4226		
GLOBE EQUIVALENT			GL5626	GL8127

QUICK RESPONSE RECESSED HORIZONTAL SIDEWALL				
SIN	V2826	V4226	V2710	V3410
ORIENTATION	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall
K-FACTOR ¹	2.8 Imp./4.0 S.I.	4.2 Imp./6.1 S.I.	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	½" NPT/15mm BSPT	½" NPT/15mm BSPT	½" NPT/15mm BSPT	¾" NPT/ 20mm BSPT
MAX. WORKING PRESSURE	175 psi/1200 kPa	175 psi/1200 kPa	175 psi/1200 kPa	175 psi/1200 kPa
ESCUTCHEON	Recessed	Recessed	Recessed	Recessed
GLOBE RE-DESIGNATION	GL2826	GL4226		
GLOBE EQUIVALENT			GL5626	GL8127

AVAILABLE GUARDS				
SPRINKLER	V28	V42	V27	V34
Horizontal Sidewall			■	

AVAILABLE WRENCHES							
Sprinkler	V56-2 Recessed	V56 Open End	V27-2 Recessed	V27 Open End	V34-2 Recessed	V34 Open End	¾ Hex-Bit
V2826 and V4226	■	■					
V2710			■	■			■
V3410					■	■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: UL/FM: 7psi/48 kPa/.5 bar

Temperature Rating: See tables in section 2.

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



2.0 CERTIFICATION/LISTINGS



HORIZONTAL SIDEWALL APPROVALS/LISTINGS				
SIN	V2826	V4226	V2710	V3410
Nominal K Factor Imperial	2.8	4.2	5.6	8
Nominal K Factor S.I. ²	4.0	6.1	8.1	11.5
Orientation	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall
Escutcheon	Flush Extended	Flush Extended	Flush Extended	Flush Extended
Approved Temperature Ratings F°/C°				
cULus 4" – 12" Deflector Distance	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C
FM	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	-
LPCB	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	-
CE, UKCA	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	-

RECESSED HORIZONTAL SIDEWALL APPROVALS/LISTINGS				
SIN	V2826	V4226	V2710	V3410
Nominal K Factor Imperial	2.8	4.2	5.6	8
Nominal K Factor S.I. ²	4.0	6.1	8.1	11.5
Orientation	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall	Horizontal Sidewall
Escutcheon	RECESSED	RECESSED	RECESSED	RECESSED
Approved Temperature Ratings F°/C°				
cULus 4" – 12" Deflector Distance ½" and ¾" Adjustment Escutcheon "	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C
FM ½" Adjustment Escutcheon Only	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	-

² For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.

NOTES

- Listings and approval as of printing.
- Where cULus Listed, Polyester and VC-250 Coatings Listed as Corrosion Resistant
- Where FM Approved, VC-250 Coating Approved as Corrosion Resistant
- New York City Acceptance - All UL Listed and/or FM Approved sprinklers acceptable to NYC per section 28-113 of the Administrative Code and the OTCR Rule

3.0 SPECIFICATIONS – MATERIAL

Deflector: Bronze

Bulb Nominal Diameter: 3.0mm

Load Screw: Bronze

Pip Cap: Bronze

Spring Seal: PTFE coated Beryllium nickel alloy

Frame: Brass

Lodgement Spring: Stainless steel

Installation Wrench: Ductile iron

Sprinkler Frame Finishes:

- Plain brass
- Chrome plated
- White polyester painted^{3, 4}
- Flat black polyester painted^{3, 4}
- Custom polyester painted^{3, 4}
- VC-250⁵

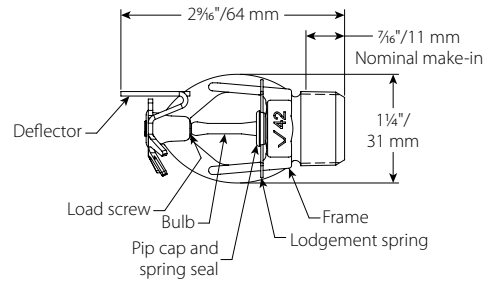
³ Not available on the Intermediate Level Style Pendant.

⁴ UL Listed for corrosion resistance.

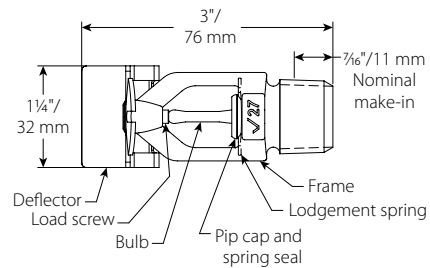
⁵ UL Listed and FM Approved for corrosion resistance.

NOTE

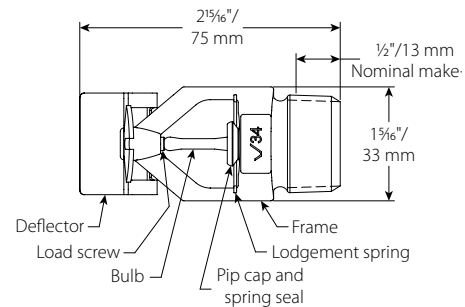
- For cabinets and other accessories refer to separate sheet.



V2826, V4226

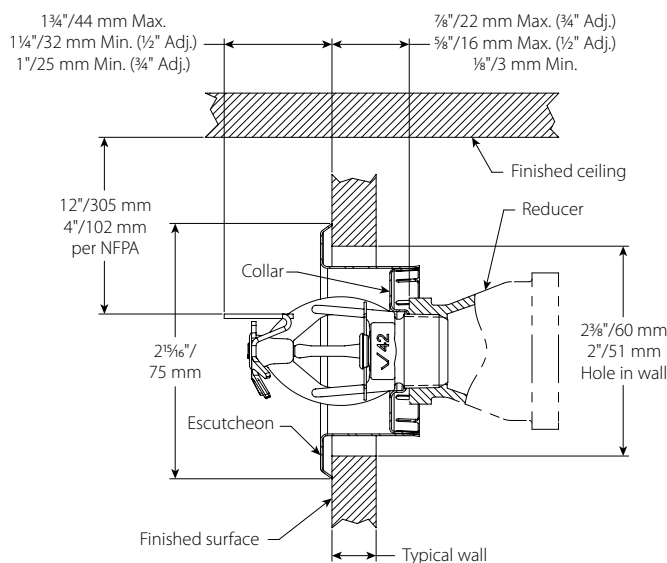


V2710



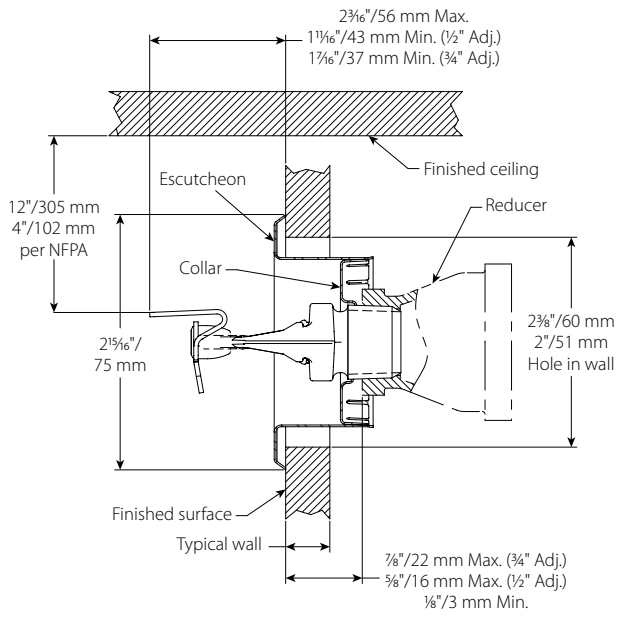
V3410

4.0 DIMENSIONS

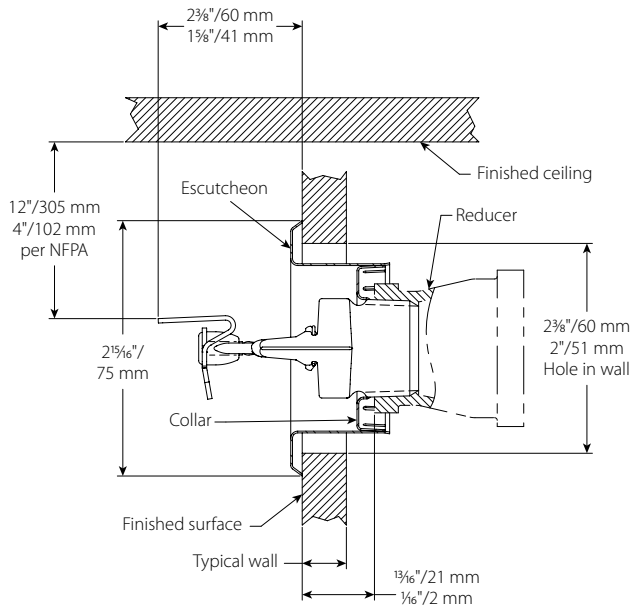


V2826, V4226

4.0 DIMENSIONS (CONTINUED)



V2710









V3410

5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

6.0 NOTIFICATIONS

 WARNING	
    	<ul style="list-style-type: none">• Read and understand all instructions before attempting to install any Victaulic products.• Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.• Wear safety glasses, hardhat, and foot protection. <p>Failure to follow these instructions could result in death or serious personal injury and property damage.</p>
<ul style="list-style-type: none">• These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.• The installer shall understand the use of this product and why it was specified for the particular application.• The installer shall understand common industry safety standards and potential consequences of improper product installation.• It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.• The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service. <p>Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.</p>	

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from -67°F/-55°C.

[1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[1-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.

Victaulic® VicFlex™ Series FL-SC/VS2

Standard Coverage, Quick/Standard Response Sprinklers

K5.6 (80)



Patent Pending

1.0 PRODUCT DESCRIPTION

The Series FL-SC/VS2 is a listed sprinkler and hose assembly that has been calibrated as a K5.6. This product does not require further calculation or use of equivalent length values.

STANDARD RESPONSE RECESSED PENDENT SPRINKLER	
SIN	V3201
ORIENTATION	PENDENT
NOMINAL K-FACTOR/METRIC K-FACTOR	5.6/80
RESPONSE	Standard
CONNECTION	1" NPT/25mm BSPT/1" IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)
ESCUTCHEON	Recessed
LENGTHS	56"/1422mm and 68"/1727mm

QUICK RESPONSE RECESSED PENDENT SPRINKLER	
SIN	V3202
ORIENTATION	PENDENT
NOMINAL K-FACTOR/METRIC K-FACTOR	5.6 / 80
RESPONSE	Quick
CONNECTION	1" NPT/25mm BSPT/1" IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)
ESCUTCHEON	Recessed
LENGTHS	56"/1422mm and 68"/1727mm

STANDARD RESPONSE CONCEALED PENDENT SPRINKLER	
SIN	V3203
ORIENTATION	CONCEALED PENDENT
NOMINAL K-FACTOR/METRIC K-FACTOR	5.6/80
RESPONSE	Standard
CONNECTION	1" NPT/25mm BSPT/1" IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)
ESCUTCHEON	Concealed
LENGTHS	56"/1422mm and 68"/1727mm

QUICK RESPONSE CONCEALED PENDENT SPRINKLER	
SIN	V3204
ORIENTATION	CONCEALED PENDENT
NOMINAL K-FACTOR/METRIC K-FACTOR	5.6/80
RESPONSE	Quick ¹
CONNECTION	1" NPT/25mm BSPT/1" IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)
ESCUTCHEON	Concealed
LENGTHS	56"/1422mm and 68"/1727mm

AVAILABLE WRENCHES	
SPRINKLER	V32 Socket
Pendent	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: 7 psi/48 kPa/.5 bar

Temperature Rating: See tables in section 2.0

¹ V3204 is a Standard Response FM sprinkler

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

victaulic.com

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2.0 CERTIFICATION/LISTINGS



APPROVALS/LISTINGS				
SIN	V3201	V3202	V3203	V3204
Nominal K Factor (gpm/(psi) ^{1/2})	5.6	5.6	5.6	5.6
Metric K-Factor (lpm/(bar) ^{1/2})	80	80	80	80
Response	Standard	Quick	Standard	Quick ²
Deflector Type	Recessed	Recessed	Concealed ³	Concealed ^{1,3}
Approved Temperature Ratings F°/C°				
cULus	155°F/68°C 200°F/93°C	155°F/68°C 200°F/93°C	155°F/68°C 200°F/93°C	155°F/68°C 200°F/93°C
FM	155°F/68°C 200°F/93°C	155°F/68°C 200°F/93°C	-	155°F/68°C 200°F/93°C

¹ The V3204 is UL-Listed as a standard response sprinkler when installed with a gasketed coverplate. Coverplate gaskets are optional and ordered separately.

² V3204 is a Standard Response FM sprinkler.

³ These sprinklers are required to be vented. Installations with a positive pressure air plenum above the housing is not permitted.

NOTES

- Listings and approval as of printing.
- For system design purposes, no equivalent length calculations are required.

MAXIMUM ALLOWABLE NUMBER OF BENDS		
Nominal Sprinkler Length inches mm	Maximum Allowable Number of 90° Bends at 2"/51mm Bend Radius for UL Listing	Maximum Allowable Number of 90° Bends at 7"/178mm Bend Radius for FM Approval
56.0 1422	4	3
68.0 1727	4	3

Agency	Approved/Listed Bracket Styles
UL	AB2, AB4, AB5, AB10
FM	AB2, AB3, AB4, AB5, AB7, Adjustable AB7, AB10, AB12, ABBA, ABMM

3.0 SPECIFICATIONS – MATERIAL

Deflector: Brass

Bulb Nominal Diameter:

Quick Response: 3.0mm

Standard Response: 5.0mm

Load Screw: Brass

Pip Cap: Brass

Spring Seal Assembly: PTFE coated Beryllium nickel alloy

Frame: Brass

Escutcheon/Plate: 1010 - 1018 mild steel and stainless steel

Concealed Cup: Carbon steel, zinc-plated

Concealed Cover Plate Gasket: White nitrile (Clean room use only)

Installation Wrench: Ductile iron

Sprinkler Frame Finishes:

Plain brass

Chrome plated

White painted

Flexible Hose

Flexible Hose: Stainless Steel

Collar/Weld Fitting: Stainless Steel

Gasket Seal: Victaulic EPDM

Nut Isolation Ring: Nylon

Coupling Isolation Ring: Polyethelene

Tamper Cover: Polyethelene/Polypropylene

Threaded Hose Fittings: Carbon steel, zinc-plated

Coupling

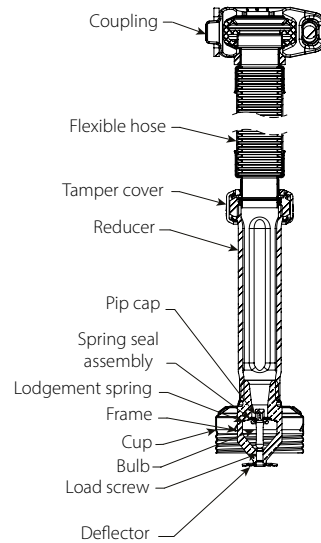
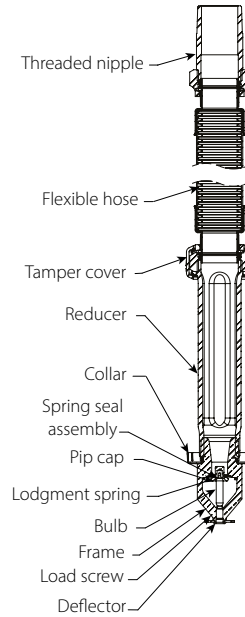
Coupling Housing: Ductile iron

Coupling Gasket: Grade “E” EPDM (Type A) Vic-Plus™
Pre-lubricated Gasket

Coupling Bolts/Nut: Carbon steel, zinc-plated

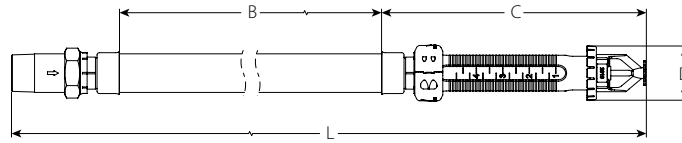
Coupling Linkage: Alloy Steel, zinc-plated

Brackets: Carbon steel, zinc-plated



4.0 DIMENSIONS

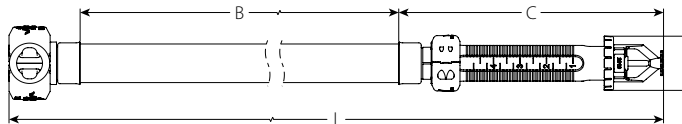
Threaded Recessed



Sprinkler	Dimensions			
Nominal Length	Overall Length L	Live Length B	Outlet End Length C	Sprinkler OD D
inches	inches	inches	inches	inches
mm	mm	mm	mm	mm
56.0	58.1	45.3	9.3	2.0
1422	1476	1147	236	49
68.0	70.1	57.3	9.3	2.0
1727	1781	1452	236	49

4.1 DIMENSIONS

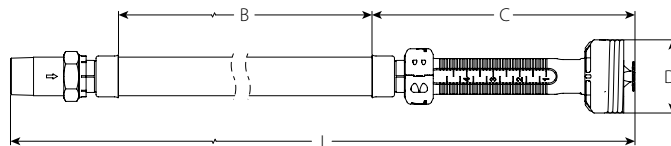
Grooved Recessed



Sprinkler	Dimensions			
Nominal Length	Overall Length L	Live Length B	Outlet End Length C	Sprinkler OD D
inches	inches	inches	inches	inches
mm	mm	mm	mm	mm
56.0	56.8	45.3	9.3	2.0
1422	1442	1147	236	49
68.0	68.8	57.3	9.3	2.0
1727	1747	1452	236	49

4.2 DIMENSIONS

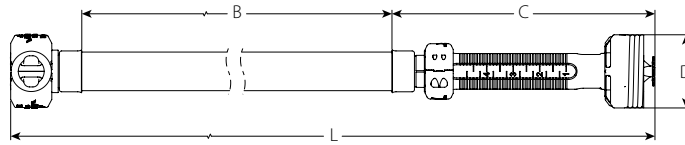
Threaded Concealed



Sprinkler	Dimensions			
Nominal Length	Overall Length L	Live Length B	Outlet End Length C	Sprinkler OD D
inches	inches	inches	inches	inches
mm	mm	mm	mm	mm
56.0	58.1	45.3	9.3	2.6
1422	1476	1147	234	65
68.0	70.1	57.3	9.3	2.6
1727	1781	1452	234	65

4.3 DIMENSIONS

Grooved Concealed



Sprinkler Nominal Length inches mm	Dimensions			
	Overall Length L inches mm	Live Length B inches mm	Outlet End Length C inches mm	Sprinkler OD D inches mm
56.0 1422	56.8 1442	45.3 1147	9.3 232	2.6 65
68.0 1727	68.8 1747	57.3 1452	9.3 232	2.6 65

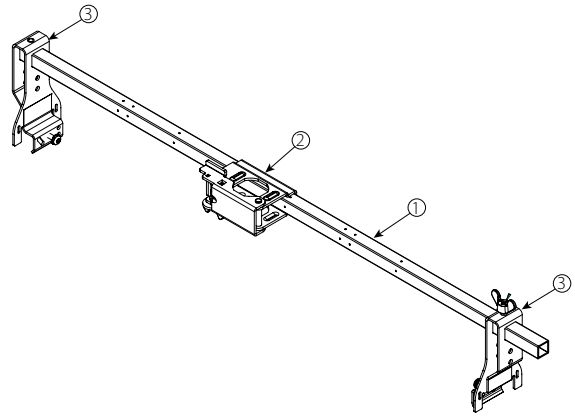
4.4 DIMENSIONS

VicFlex Brackets

Style AB2

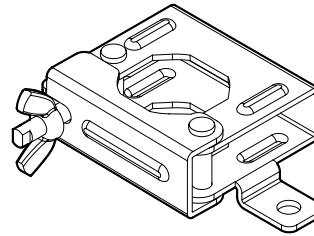
- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket



Style AB3

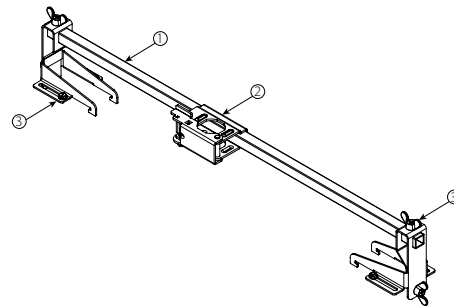
- Surface Mount Applications
- FM/LPCB Approved



Style AB4

- Hard-Lid Ceilings with Hat furring channel grid system

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket for Hat Furring Channel



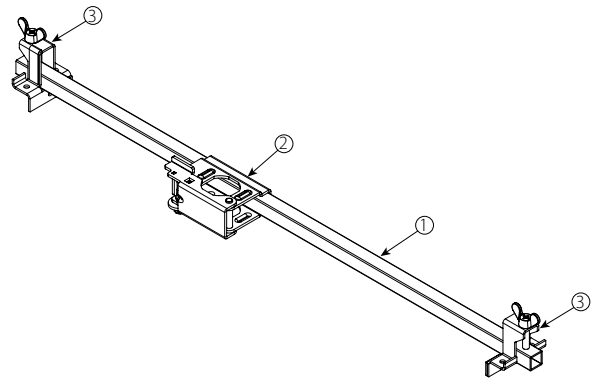
4.4 DIMENSIONS (CONTINUED)

VicFlex Brackets

Style AB5

- Hard-Lid Ceilings

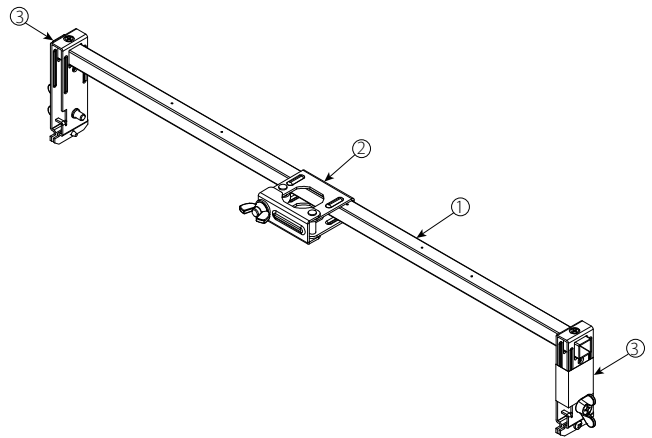
Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket



Style AB7

- Suspended Ceilings
- Hard-Lid Ceilings

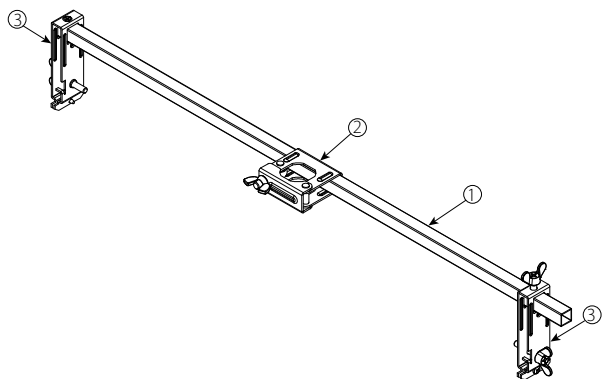
Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket



Style AB7 Adjustable

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	700 mm or 1400 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket (adjustable)



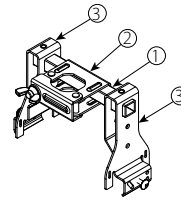
4.4 DIMENSIONS (CONTINUED)

VicFlex Brackets

Style AB10

- Suspended ceilings
- Armstrong® TechZone™

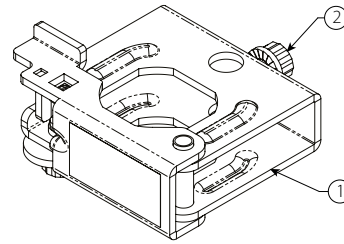
Item	Description
1	6"/152mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket



Style AB12

- Suspended ceilings
- Hard-Lid ceilings

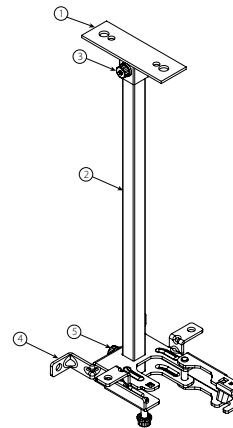
Item	Description
1	Style AB12 Bracket Body
2	#2 Square Drive Set Screw



Style ABBA

- Floor-above mount
- Cantilever mount
- Temporary mount in exposed ceilings

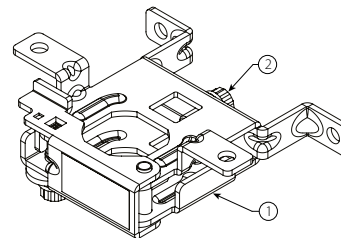
Item	Description
1	Style ABBA Mounting Plate
2	Style ABBA Square Bar
3	Cap Screw, Serated Flange, M6 x 1 x 20, T25 Torx Drive Recessed
4	Style ABMM Bracket Body
5	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed



Style ABMM

- Surface mount
- Stand-off mount

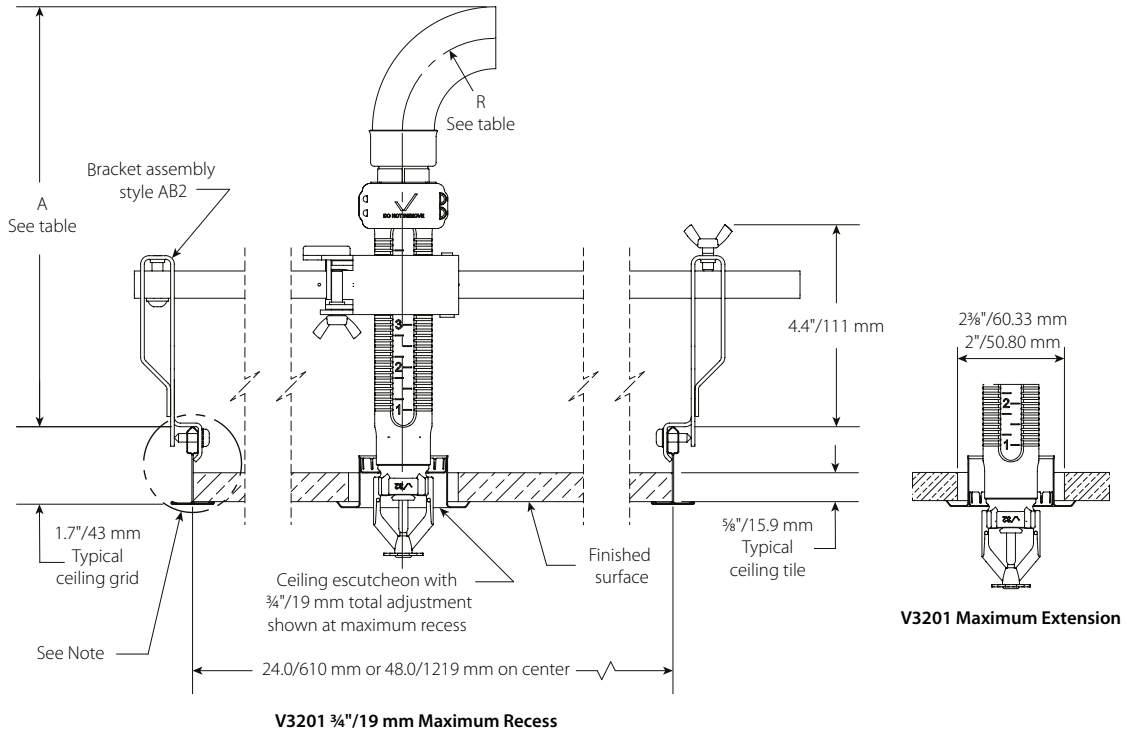
Item	Description
1	Style ABMM Bracket Body
2	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed



4.5 DIMENSIONS

Clearances

Series FL-SC/VS2 Recessed Pendant and Style AB2 Bracket



NOTE

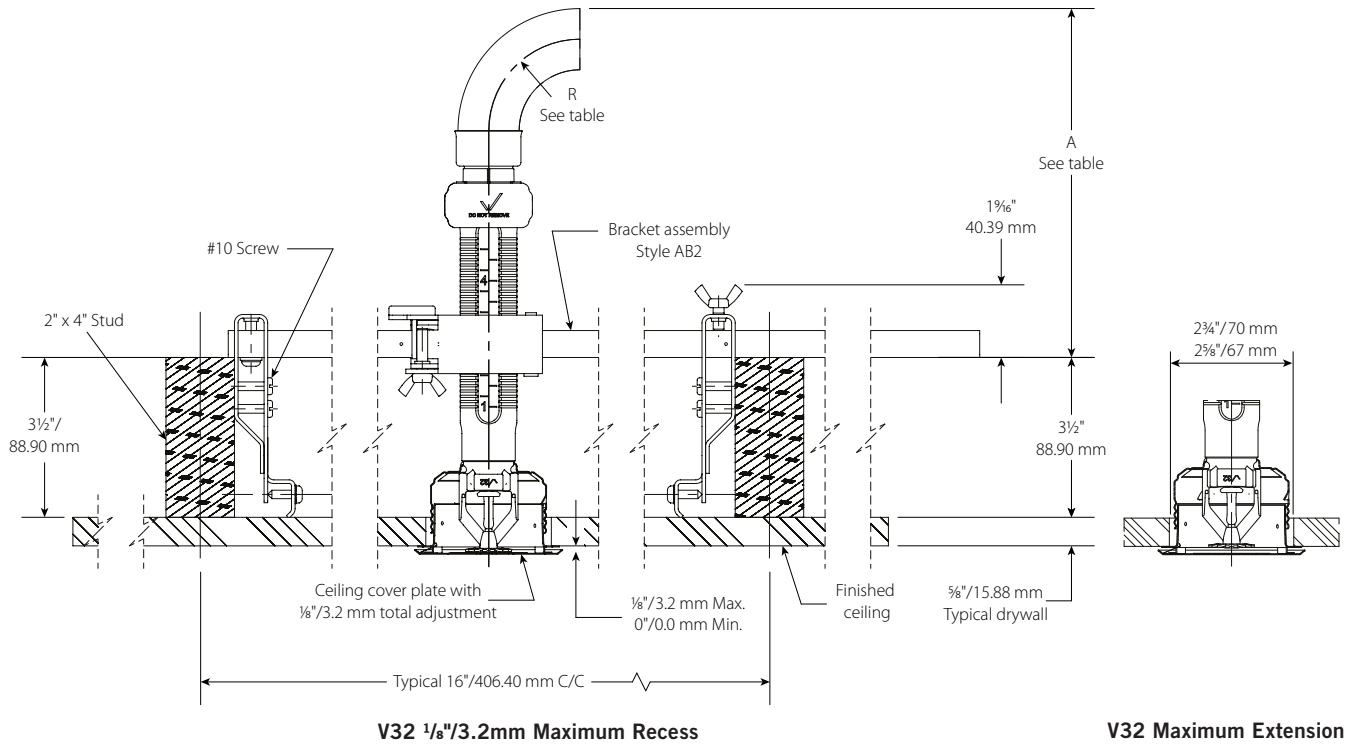
- Typical t-bar grid and ceiling tile shown. Variations of t-bar and ceiling tile may be used but may result in dimensional changes from layouts depicted in this submittal. Variations of ceiling grids and brackets are permitted but may result in clearance differences from the figures depicted.

	V3201 Recessed Pendant 3/4\"/> 			
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	9.1 231	14.1 358	10.4 261	15.4 388

4.5 DIMENSIONS (CONTINUED)

Clearances

Series FL-SC/VS2 Concealed Pendant and Style AB2 Bracket



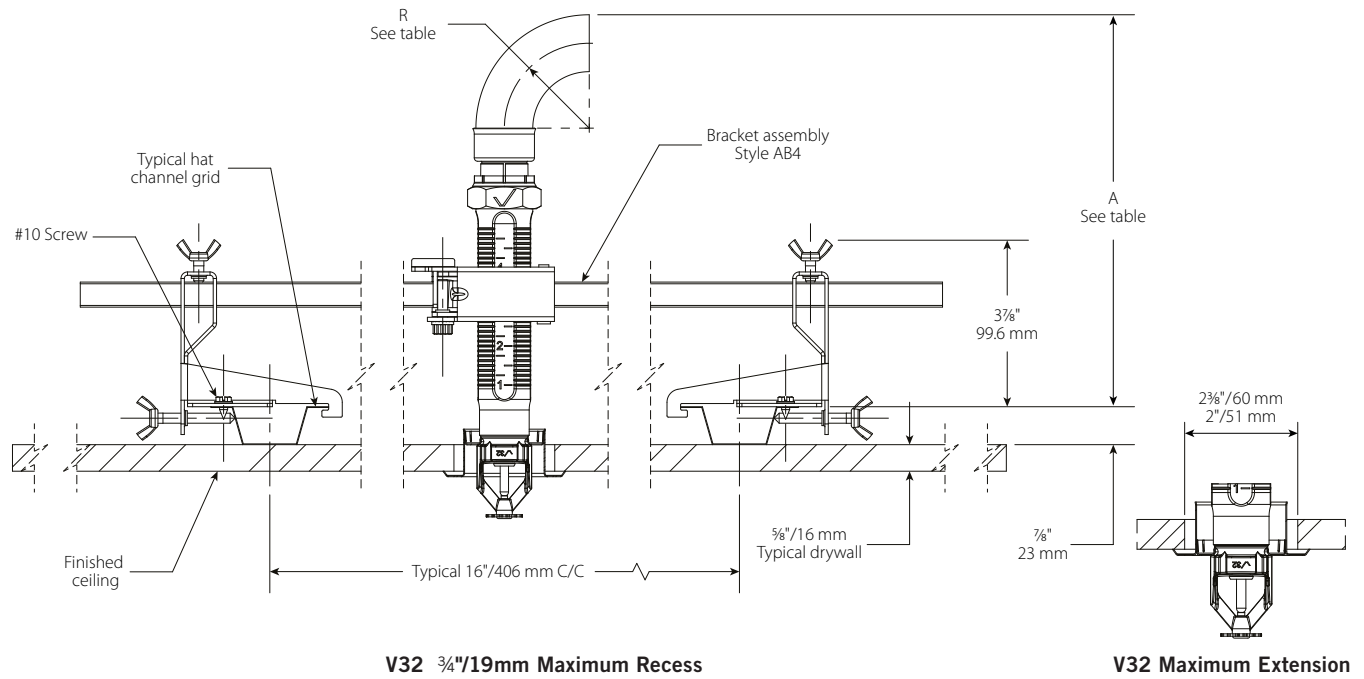
NOTE

- Variations of ceiling grids and brackets are permitted but may result in clearance differences from the figures depicted.

	V3201 Recessed Pendant 3/4\" Max Recess	V3201 Recessed Pendant 3/4\" Max Recess	V3203 Concealed Pendant 1/8\" Max Recess	V3203 Concealed Pendant 1/8\" Max Recess
	inches mm	inches mm	inches mm	inches mm
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	10.8 272	15.8 399	11.9 302	16.9 429

4.6 DIMENSIONS

AB4 Clearances



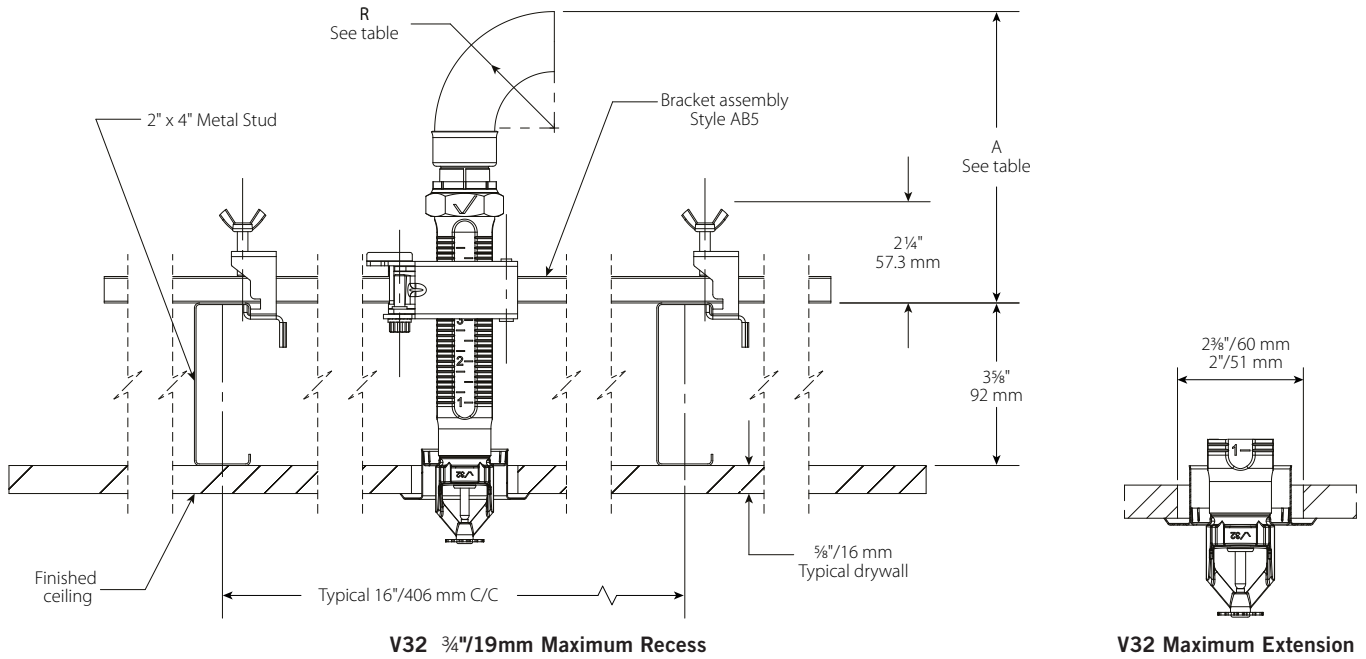
V32 3/4\"/>

V32 Maximum Extension

	V3201 Recessed Pendant 3/4\"/>			
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	9.5 242	14.5 369	10.8 272	15.8 399

4.7 DIMENSIONS

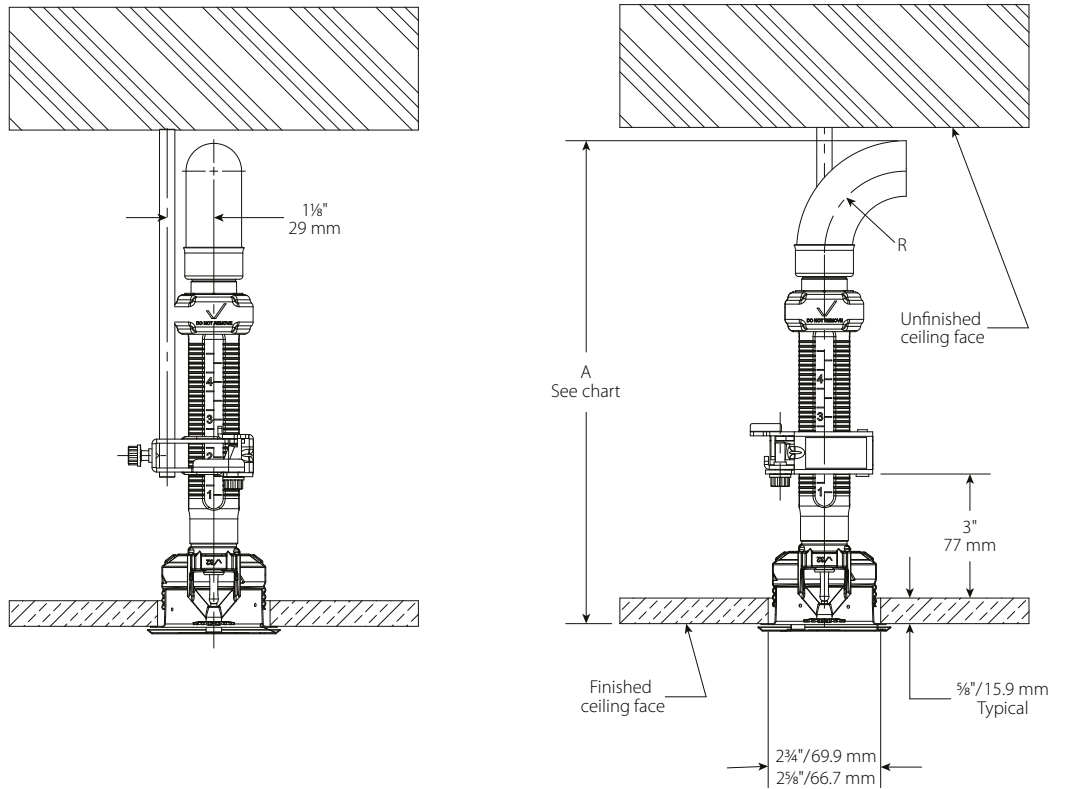
AB5 Clearances



	V3201 Recessed Pendant ¾" Max Recess inches mm	V3201 Recessed Pendant ¾" Max Recess inches mm	V3203 Concealed Pendant ½" Max Recess inches mm	V3203 Concealed Pendant ½" Max Recess inches mm
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	9.5 242	14.5 369	10.8 272	15.8 399

4.8 DIMENSIONS

AB12 Clearances

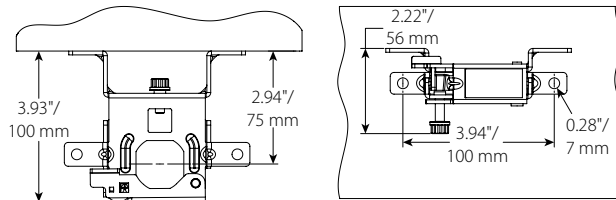


V32 1/8"/3.18mm Maximum Recess

	V3201 Recessed Pendant 3/4" Max Recess inches mm	V3201 Recessed Pendant 3/4" Max Recess inches mm	V3203 Concealed Pendant 1/8" Max Recess inches mm	V3203 Concealed Pendant 1/8" Max Recess inches mm
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	10.6 270	15.6 397	11.9 300	16.9 427

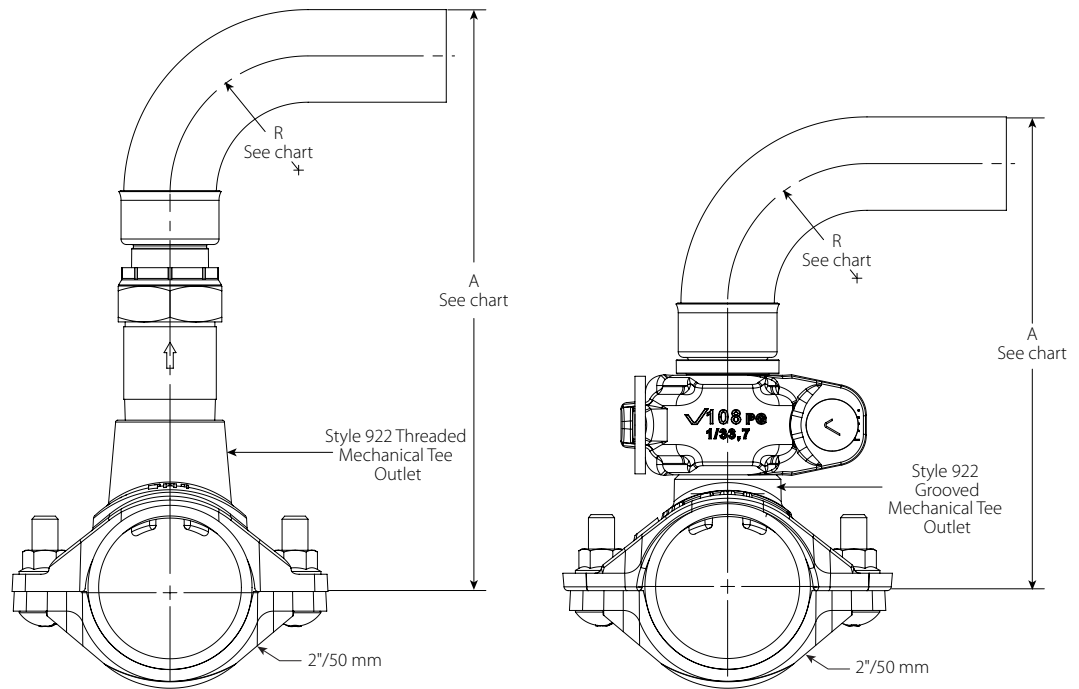
Style ABMM Bracket

Stand-off Dimensions

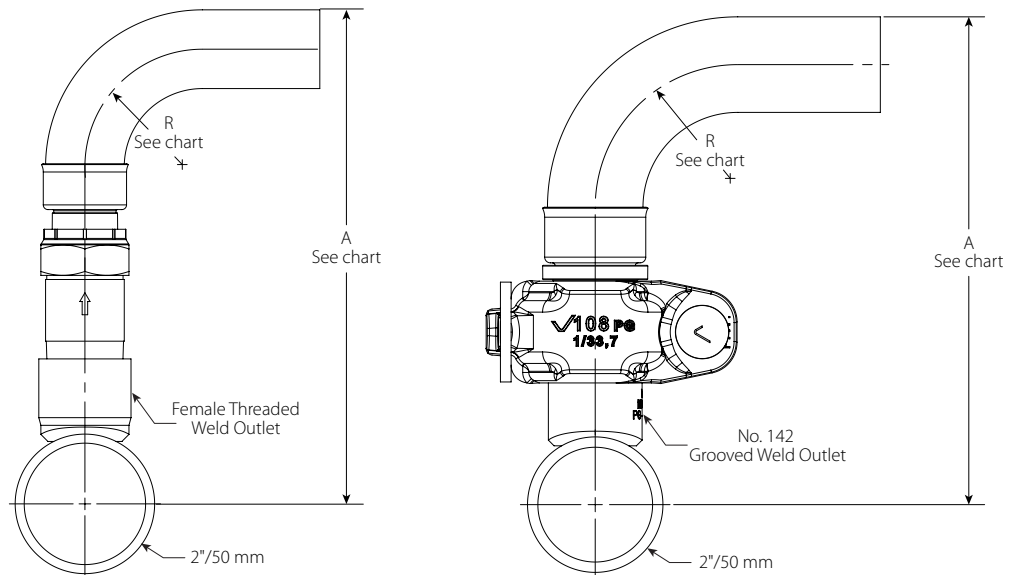


4.9 DIMENSIONS

Branchline Clearances



	Threaded Branchline into Female Threaded S/922 Outlet		S/108 Coupling Branchline into S/922 Grooved Outlet	
	inches mm	inches mm	inches mm	inches mm
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	8.5 214	13.5 341	6.8 171	11.8 298




	Threaded Branchline into Female Threaded Weld Outlet		S/108 Coupling Branchline into N/142 Grooved Weld Outlet	
	inches mm	inches mm	inches mm	inches mm
"R" Minimum Bend Radius	2.0 51	7.0 178	2.0 51	7.0 178
"A" Minimum Required Installation Space	8.5 214	13.5 341	7.1 181	12.1 308

5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA or any local standards.

6.0 NOTIFICATIONS

⚠ WARNING	
	<ul style="list-style-type: none">• Read and understand all instructions before attempting to install any Victaulic products.• Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.• Wear safety glasses, hardhat, and foot protection. <p>Failure to follow these instructions could result in death or serious personal injury and property damage.</p>
<ul style="list-style-type: none">• These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.• The installer shall understand the use of this product and why it was specified for the particular application.• The installer shall understand common industry safety standards and potential consequences of improper product installation.• It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.• The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service. <p>Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.</p>	

NOTE

- DO NOT paint, coat, or firestop the outlet/inlet portion of the Style VS2 Sprinkler Assembly. Braided hose and fitting portions of the Style VS2 Sprinkler Assembly may be painted or coated, provided that the paint or coating is compatible with stainless steel material. This includes penetrating through firestop-filled annular space of a firewall. The firestop material in direct contact with the flexible braided hose will not impede the functionality of the Style VS2 Sprinkler Assembly, provided that the components are installed in accordance with Victaulic's installation instructions.

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from -67°F/-55°C.

I-VICFLEX

7.1 CEILING LOADS

Installation		Loads	
Sprinkler Length inches mm	Bracket Length inches mm	Total Load lb N	Uniform Load lb/linear-ft N/linear-m
56 1422	24 610	6.8 30.3	3.4 49.6
68 1727	24 610	7.5 33.4	3.8 55.5
56 1422	48 1219	7.7 34.3	1.9 27.7
68 1727	48 1219	8.5 37.8	2.1 30.7

Total Load is defined as the sum of the weights of the following:

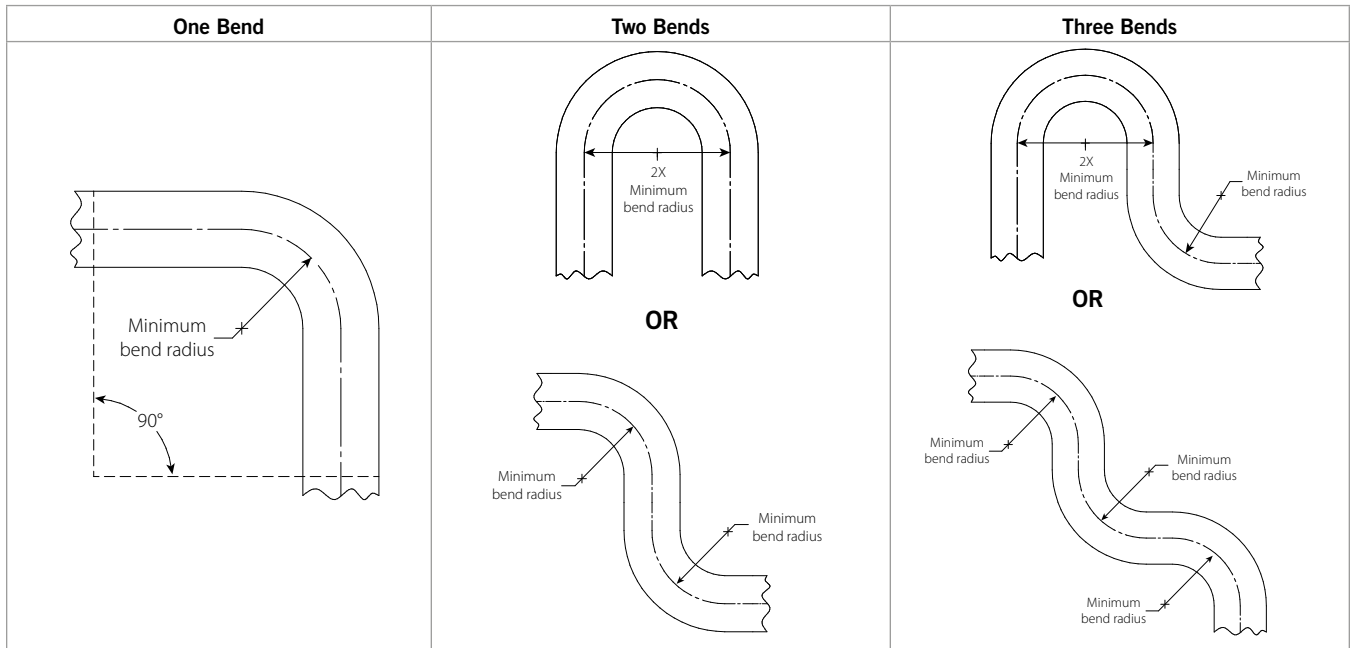
- water-filled sprinkler assembly
- bracket assembly (any applicable Victaulic bracket model of the relevant associated size)

ASTM C635

Installation		Loads
Suspension System	Duty Classification	Min. Allowable Uniform Load lb/linear-ft N/linear-m
Direct-Hung	Light	5.0 73.0
	Intermediate	12.0 175.2
	Heavy	16.0 233.6

Summary: All direct-hung suspension system duty classifications per ASTM C635 are able to withstand the maximum water-filled weight of the VicFlex sprinkler assembly and bracket.

7.2 FLEXIBLE HOSE BEND CHARACTERISTICS



For out-of-plane (three-dimensional) bends, care must be taken to avoid imparting torque on the hose.

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

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Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.

Victaulic® FireLock™ Series FL-ECOH

Extended Coverage, Standard and Quick Response Upright, Pendent and Recessed Pendent Sprinklers K11.2 (16.2), K14.0 (20.2)



1.0 PRODUCT DESCRIPTION

EXTENDED COVERAGE UPRIGHT SPRINKLERS		
SIN	V1121	V3425
ORIENTATION	UPRIGHT	UPRIGHT
K-FACTOR ¹	11.2 Imp./16.1 S.I.	14.0 Imp./20.2 S.I.1
CONNECTION	¾" NPT/ 20mm BSPT	¾" NPT/ 20mm BSPT/IGS Grooved
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL1121	-

EXTENDED COVERAGE PENDENT SPRINKLERS		
SIN	V1113	V3421
ORIENTATION	PENDENT	PENDENT
K-FACTOR ¹	11.2 Imp./16.1 S.I.	14.0 Imp./20.2 S.I.
CONNECTION	¾" NPT/ 20mm BSPT	¾" NPT/ 20mm BSPT/IGS Grooved
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL1113	-

EXTENDED COVERAGE RECESSED PENDENT SPRINKLERS		
SIN	V1113	V3421
ORIENTATION	RECESSED PENDENT	RECESSED PENDENT
K-FACTOR ¹	11.2 Imp./16.1 S.I.	14.0 Imp./20.2 S.I.
CONNECTION	¾" NPT/ 20mm BSPT	¾" NPT/ 20mm BSPT
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL1113	-

AVAILABLE WRENCHES					
SPRINKLER	V11 Recessed	V11 Open End	V34 Recessed	V34 Open End	⅜" Hex-Bit (V9)
Upright	■	■	■	■	■
Pendent	■	■	■	■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: UL: 7psi/48 kPa/.5 bar

Temperature Rating: See tables in section 2.0

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



2.0 CERTIFICATION/LISTINGS



SIN		V1121						
Nominal K Factor Imperial		11.2						
Nominal K Factor S.I. ²		16.2						
Installation Type		UPRIGHT						
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 x 14 4.3 x 4.3	UL	QR	30 114	7.2 50	39 148	12.1 83	155°F/68°C 200°F/93°C	11 3.4
16 x 16 4.9 x 4.9	UL	SR	39 148	12.1 83	51 196	20.7 143	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	49 185	19.1 132	65 246	33.7 232	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	60 227	28.7 198	80 303	51 352	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

SIN		V3425						
Nominal K Factor Imperial		14.0						
Nominal K Factor S.I. ²		20.2						
Installation Type		UPRIGHT						
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 x 14 4.3 x 4.3	UL	SR	39 148	7.8 54	51 193	13.3 92	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	8 2.4
16 x 16 4.9 x 4.9	UL	SR	39 149	7.8 54	51 196	13.3 92	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	49 186	12.3 85	65 246	21.6 149	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	60 227	18.4 127	80 303	32.7 226	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

² For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

NOTES

- Listings and approval as of printing.

2.0 CERTIFICATION/LISTINGS (CONTINUED)



SIN		V1113							
Nominal K Factor Imperial		11.2							
Nominal K Factor S.I. ²		16.2							
Installation Type		Pendent/Recessed Pendent							
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	Adjustment In mm	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 x 14 4.3 x 4.3	UL	QR	½ and ¾ 15 and 20	30 114	7.2 50	39 148	12.1 83	155°F/68°C 200°F/93°C	9 2.7
16 x 16 4.9 x 4.9	UL	SR	½ and ¾ 15 and 20	39 148	12.1 83	51 196	20.7 143	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	½ and ¾ 15 and 20	49 185	19.1 132	65 246	33.7 232	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	½ and ¾ 15 and 20	60 227	28.7 198	80 303	51 352	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

SIN		V3421							
Nominal K Factor Imperial		14.0							
Nominal K Factor S.I. ²		20.2							
Installation Type		Pendent/Recessed Pendent							
Maximum Coverage Area Width x Length Ft. x Ft m x m	Listing Agency	Response	Adjustment In mm	OH1 Flow GPM L/min	OH1 Pressure PSI kPa	OH2 Flow GPM L/min	OH2 Pressure PSI kPa	Approved Temperature Ratings F°/C°	Minimum Spacing Ft. m
14 X 14 4.3 X 4.3	UL	SR	½ and ¾ 15 and 20	39.0 148	7.8 54	51.0 193	13.3 92	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	12 3.7
16 X 16 4.9 X 4.9	UL	SR	½ and ¾ 15 and 20	39.0 149	7.8 55	51 196	13.3 93	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
18 x 18 5.5 x 5.5	UL	SR	½ and ¾ 15 and 20	49.0 186	12.3 85	65 246	21.6 149	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	
20 x 20 6.1 x 6.1	UL	SR	½ and ¾ 15 and 20	60 227	18.4 127	80.0 303	32.7 226	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	

² For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

NOTES

- Listings and approval as of printing.



3.0 SPECIFICATIONS – MATERIAL

Deflector: Bronze

Bulb Nominal Diameter: 3.0mm

Load Screw: Bronze

Pip Cap: Bronze

Spring Seal Assembly: PTFE coated Beryllium nickel alloy

Frame: Brass

Lodgement Spring: Stainless Steel

Installation Wrench: Ductile iron

Sprinkler Frame Finishes:

- Plain brass
- Chrome plated
- White polyester painted^{3, 4}
- Flat black polyester painted^{3, 4}
- Custom polyester painted^{3, 4}
- VC-250⁵

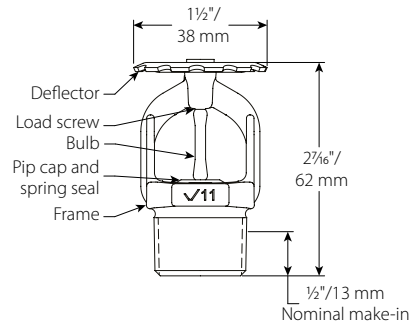
³ Not available on the Intermediate Level Style Pendant.

⁴ UL Listed for corrosion resistance.

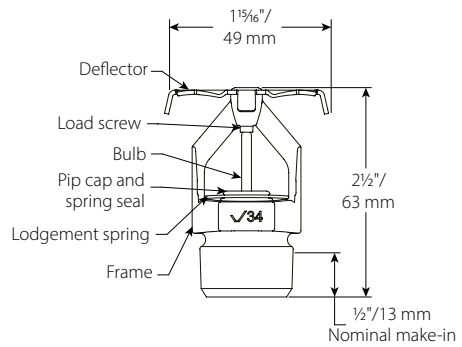
⁵ UL Listed and FM Approved for corrosion resistance.

NOTE

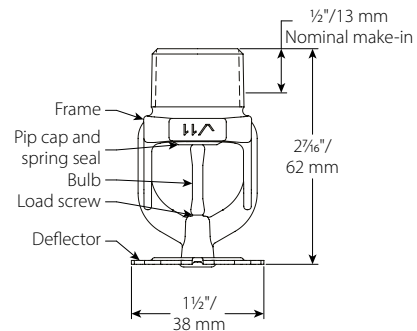
- For cabinets and other accessories refer to separate sheet.



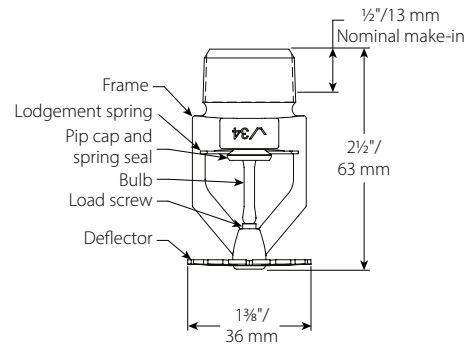
V1121



V3425

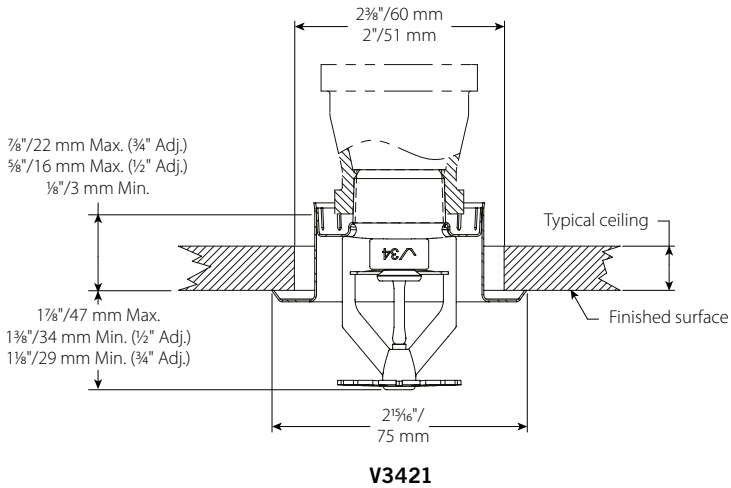
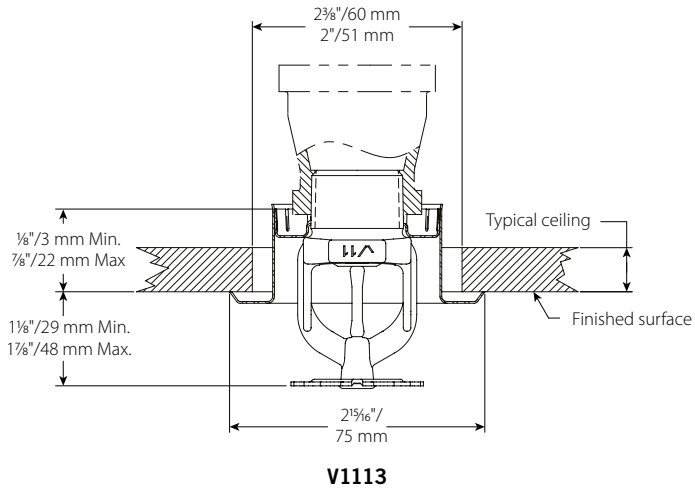


V1113



V3421







4.0 DIMENSIONS



5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

6.0 NOTIFICATIONS

 WARNING	
    	<ul style="list-style-type: none">• Read and understand all instructions before attempting to install any Victaulic products.• Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.• Wear safety glasses, hardhat, and foot protection. <p>Failure to follow these instructions could result in death or serious personal injury and property damage.</p>
<ul style="list-style-type: none">• These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.• The installer shall understand the use of this product and why it was specified for the particular application.• The installer shall understand common industry safety standards and potential consequences of improper product installation.• It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.• The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service. <p>Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.</p>	

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from -67°F/-55°C.

[1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[1-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

User Responsibility for Product Selection and Suitability

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Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.



TECHNICAL DATA SHEET

VK3021 Quick Response Pendent Sprinkler K5.6 (80.6)

1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as "sprinkler":

VK3021: Quick Response, Standard Coverage, Pendent, K5.6 (80.6) Sprinkler.

2. INTENDED USE

The sprinkler is intended to be used in automatic fire sprinkler systems as allowed by applicable approval authorities. The sprinkler must be used in accordance with:

1. the sprinkler's Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued, for example NFPA, FM, EN, VdS, or LPCB.
3. the latest revisions of all applicable manufacturer's documentation.



Governmental codes, ordinances, and standards may apply and may differ from one another.



Cancer and Reproductive Harm www.P65Warnings.ca.gov

3. LISTING AND APPROVALS

Refer to section 5 for details and requirements that must be followed.




TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
4. TECHNICAL SPECIFICATIONS
4.1 Definitions

Standard Pendent Sprinkler: A sprinkler intended to be oriented with the deflector below the frame so water flows downward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. These sprinklers are marked “SP/RP” (Standard Pendent/Recessed Pendent). When a standard pendent sprinkler is used with a recessed escutcheon, it becomes a recessed pendent sprinkler.

Recessed Sprinkler: A spray sprinkler assembly intended for installation with a concealed piping system. The assembly consists of a sprinkler installed in a decorative adjustable recessed escutcheon that minimizes the protrusion of the sprinkler beyond the ceiling or wall without adversely affecting the sprinkler distribution or sensitivity. Refer to the appropriate technical data page for allowable sprinkler models, temperature ratings, and occupancy classifications.

NOTICE: Do not recess any sprinkler not listed or approved for use with the escutcheon. Refer to Section 5.

Corrosion Resistant Sprinkler: A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers. Sprinklers can be ordered as corrosion resistant sprinklers and can be used with escutcheons when allowed by the approval body.

4.2 Ratings and Physical Characteristics

Parameter	Value
Minimum operating pressure	7 psi (0.5 bar)
Maximum rated pressure	UL: 250 psi (17 bar) FM and CE: 175 psi (12 bar)
Factory tested pressure	500 psi (35 bar)
Thread size	1/2" NPT or 15 mm BSPT
Nominal K-factor	5.6 U.S. (80.6)
Minimum temperature rating (glass bulb)	-65 °F (-55 °C)



4.3 Markings and Dimensions

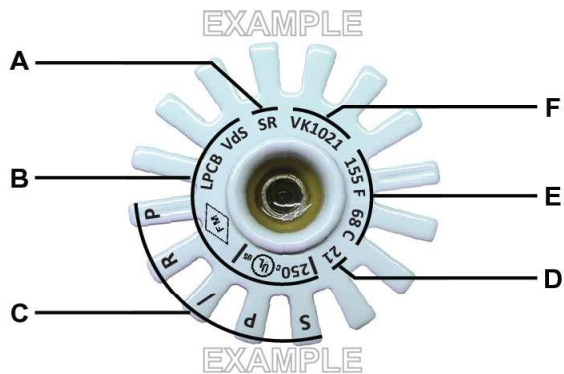


Figure - 1 Markings

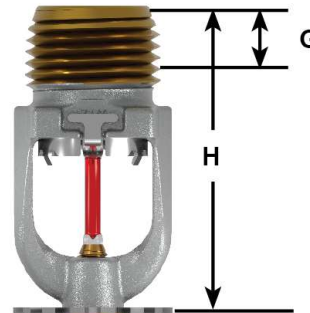


Figure - 2: Dimensions

Ref	Description	Value
A	Response type	QR: Quick Response
B	Listings and Approvals	See sections 3 and 5
C	Sprinkler type	SP/RP: Standard Pendent/Recessed Pendent
D	Manufacture date (year)	See marking
E	Nominal temperature rating	See marking
F	Manufacturers Sprinkler Identification Number (SIN)	VK3021
G	Nominal pipe engagement	7/16" (11 mm)
H	Height	1-15/16" (49 mm)

4.4 Materials of Construction

NOTICE: Do not disassemble the sprinkler.

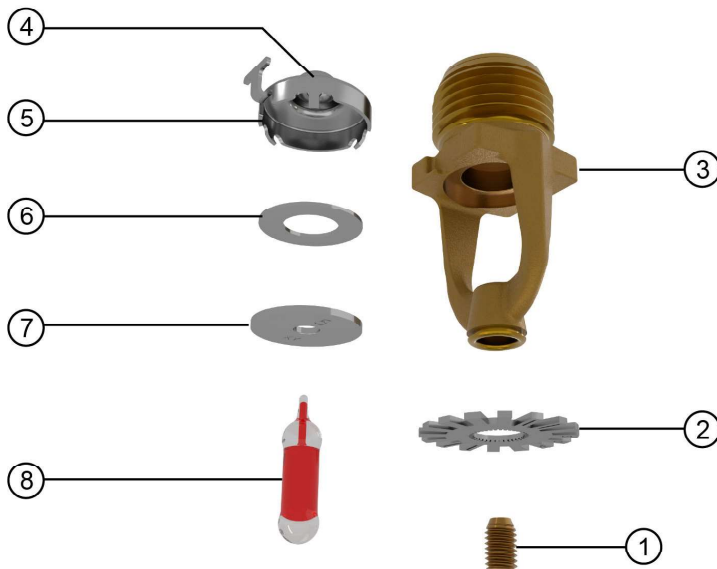


Figure – 3 Sprinkler Components

Ref	Description	Material
1	Compression screw	Brass CW612N, CW508L, UNS-C36000 or UNS-C26000
2	Deflector	Stainless steel UNS S30400
3	Sprinkler body	CW602N, UNS-C84400 or QM brass
4	Pip cap seal	Polytetrafluoroethylene (PTFE)
5	Pip cap shell	Stainless steel UNS-S44400
6	Belleville spring	Nickel alloy
7	Pip cap disc	Stainless steel UNS-S30100
8	Bulb	Glass, nominal 0.10" (3 mm) diameter


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
5. LISTING AND APPROVAL DESIGN REQUIREMENTS
5.1 Listing and Approval Specifications

Sprinkler Base Part Number ¹	Thread Size		Approval Body				
	NPT	BSPT	cULus		FM		
			Approval Specification	Maximum working water pressure	Approval Specification	Maximum working water pressure	
23870	1/2"	—	A1, A2X, A3Y	250 psi (17 bar)	A1, B2X, B3Y	175 psi (12 bar)	
23882	—	15 mm	A1, A2X, A3Y	250 psi (17 bar)	A1, B2X, B3Y	175 psi (12 bar)	
Additional Listings and Approvals Maximum WWP 175 psi (12 bar)							
			CE	LPCB	VdS	UKCA	MED
23870	1/2"	—	A1, B2X, B3Y	A1, A2X, A3Y	A1	A1, A2X, A3Y	A1, A2X, A3Y
23882	—	15 mm	A1, B2X, B3Y	A1, A2X, A3Y	A1	A1, A2X, A3Y	A1, A2X, A3Y
Approval Specification (Temperature Ratings) Key:							
A = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C) and 286 °F (141 °C)							
B = 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)							
Approval Specification (Finishes) Key:							
1 = Brass, Chrome, White Polyester ^{2,3} , Black Polyester ^{2,3} , and ENT ^{3,4}							
2 = Brass, Chrome, White Polyester ^{2,3} , and Black Polyester ^{2,3}							
3 = ENT ^{3,4}							
Approval Specification (Escutcheons) Key:							
X = Installed with Viking Recessed Escutcheons Models E-1, E-2, E-3, NP-1, NP-2, and NP-3, or Viking Standard Surface Mounted Escutcheons							
Y = Installed with Viking Recessed Escutcheons Models E-1 and NP-1, or Viking Standard Surface Mounted Escutcheons							
1 For complete part number, refer to Viking's current price list.							
2 For White Polyester and Black Polyester, other colors are available upon request and will carry the same Listings and Approvals as the standard colors.							
3 cULus Listed as corrosion resistant.							
4 FM Approved as corrosion resistant.							

5.2 cULus Listing Requirements and Details

The sprinkler is cULus Listed as indicated in Table 5.1 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers. This sprinkler is designed for use in light and ordinary hazard occupancies. Venting is not required.

5.3 FM Approval Requirements and Details

The sprinkler is FM Approved as quick response Non-Storage pendent sprinkler as indicated in the FM Approval Guide. The sprinkler is also approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207 mbar). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling. For specific application and installation requirements, refer to the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0).



5.4 Additional Approval Requirements and Details

Refer to Table 5.1 for approved configurations allowed by each of the following approvals.

- CE CPR: Standard EN 12259-1:1999 +A3:2006; Declaration of Performance DOP_XT1A.
- LPCB: Standard EN 12259-1:1999 +A3:2006; Certificate Number 096m.
- VdS: Standard EN 12259-1:1999 +A3:2006; Certificate Number G 422006.
- UKCA: Standard EN12259-1:1999 +A3:2006; Declaration of Conformity UKCA DOC_S5048.
- MED: Standard EN 12259-1:1999 +A3:2006; Declaration of Conformity DOC_MED_XT1.

For specific application and installation requirements, refer to the latest applicable governmental codes, ordinances, and standards for the installation location.

5.5 Corrosion Resistant Coatings

The corrosion resistant coatings have passed the standard corrosion tests required by the approving agencies and are listed and approved as indicated in Table 5.1. These tests do not represent all possible corrosive environments. The Electro-less Nickel PTFE (ENT) finish passed the UL 199 thirty day corrosion test and is cULus listed and FM Approved as corrosion resistant. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.

Prior to installation, verify that the coatings are compatible with, or suitable for, the proposed environment. The ENT finish has not been evaluated for environments containing chlorine, such as indoor swimming pools. It is not recommended for these applications.

5.6 Sprinkler Guards and Water Shields

The sprinkler is approved for use with the Model XG Sprinkler Guard and the Model F-1 water shield. Refer to the Guards and Water Shields for XT1 Sprinklers technical data sheet for more information.

5.7 Escutcheons

The sprinkler is approved for use with various styles of Viking escutcheons. Specific installation dimensions apply that must be observed. Refer to the sprinkler's Handling and Installation instructions for more information.

5.8 Available Temperature Ratings

Viking sprinklers are available in several temperature ratings that relate to a specific temperature classification. Applicable installation rules mandate the use and limitations of each temperature classification. In selecting the appropriate temperature classification, the maximum expected ceiling temperature must be known. When there is doubt as to the maximum temperature at the sprinkler location, a maximum-reading thermometer should be used to determine the temperature under conditions that would show the highest readings to be expected. In addition, recognized installation rules may require a higher temperature classification, depending upon sprinkler location, occupancy classification, commodity classification, storage height, and other hazards. In all cases, the maximum expected ceiling temperature dictates the lowest allowable temperature classification. Sprinklers located immediately adjacent to a heat source may require a higher temperature rating.


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
6. ORDERING PROCEDURE
6.1 Sprinkler

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to section 5):
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

NOTE: For Polyester, insert the desired temperature rating suffix where the dash (-) is shown.

EXAMPLE: 23870MB/W = VK3021 with white polyester finish and 155 °F (68 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

1. Sprinkler Base Part Number		2. Finish		3. Temperature Rating			
See Section 5		Description	Suffix	Nominal Temperature Rating	Bulb Color	Maximum Ambient Ceiling Temperature	Suffix
23870	1/2" NPT	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
23882	15 mm BSPT	Chrome	F	155 °F (68 °C)	Red	100 °F (38 °C)	B
		White Polyester	M-/W	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
		Black Polyester	M-/B	200 °F (93 °C)	Green	150 °F (65 °C)	E
		ENT	JN	286 °F (141 °C)	Blue	225 °F (107 °C)	G
				OPEN	—	—	Z



TECHNICAL DATA SHEET

VK3021 Quick Response Pendent Sprinkler K5.6 (80.6)

6.2 Sprinkler Accessories



Figure – 4: Sprinkler Accessories

Image Reference	Part Number	Description
1)	23559MB	Straight wrench: required for proper installation
2)	23560MB	Recessed socket wrench
3)	01724A	Sprinkler cabinet: holds up to 6 sprinklers
4)	01725A	Sprinkler cabinet: holds up to 12 sprinklers (not shown)
5)	06419A	Model E-1 Slip-on style recessed escutcheon
	07902	Model E-1 Slip-on style recessed escutcheon (stainless steel)
6)	11038	Model E-2 Threaded recessed escutcheon
7)	18347	Model E-3 Threaded recessed escutcheon (large diameter outer cup)
8)	01960A	Large standard flat surface mount escutcheon (steel)
	09488	Large standard flat surface mount escutcheon (stainless steel)
9)	02960A	Small standard flat surface mount escutcheon (steel)
	07526	Small standard flat surface mount escutcheon (stainless steel)
10)	01961B	Large standard raised surface mount escutcheon (brass)


TECHNICAL DATA SHEET
**VK3021 Quick Response
Pendent Sprinkler K5.6 (80.6)**
7. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA):
www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 - 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



Handling and Installation Instructions

Model XT-1 Pendent Sprinklers

bg	Инсталирайте и пуснете продукта в експлоатация само ако следната инструкция е ясно разбрана.	lv	Produkta iemontēšanu un ekspluatācijas sākšanu veikt tikai tad, ja dotā instrukcija ir pilnībā saprasta.
cs	Namontujte a spusťte do provozu produkt pouze tehdy, když jste jasně pochopili tento návod.	lt	Produktą montuokite ir pradėkite eksploatuoti tik tuomet, jei aiškiai suprantate šią instrukciją.
de	Du må kun montere og idriftsætte produktet, hvis du har forstået følgende vejledning til fulde.	mt	Installa u f'hadem il-prodott biss jekk l-istruzzjonijiet li ġejjin jinftiehm b'mod ċar.
de	Produkt nur einbauen und in Betrieb nehmen, wenn die nachfolgende Anleitung klar verstanden wird.	nl	Product alleen installeren en in gebruik nemen, als de volgende instructies begrepen zijn.
el	Η εγκατάσταση και θέση σε λειτουργία του προϊόντος επιτρέπονται μόνο εάν οι ακόλουθες οδηγίες έχουν γίνει κατανοητές.	no	Ikke installer og ta i bruk produktet uten at følgende anvisninger er tydelig forstått.
en	Do not install and commission the product unless you have clearly understood the instructions below.	pl	Produkt należy montować i uruchamiać tylko wtedy, gdy poniższe instrukcje są w pełni zrozumiałe.
es	Instalar el producto y ponerlo en funcionamiento solo cuando se hayan comprendido claramente las siguientes instrucciones.	pt	Instalar e colocar o produto em funcionamento somente se as instruções a seguir forem claramente compreendidas.
et	Paigaldage toode ja kasutage seda ainult siis, kui saate alljärgnevast juhendist selgelt aru.	ro	Montați produsul și puneți-l în funcțiune numai dacă instrucțiunea următoare este înțeleasă clar.
fi	Tuotteen saa asentaa ja ottaa käyttöön vain, jos jäljempänä oleva ohje ymmärretään selvästi.	ru	Не устанавливайте и не принимайте оборудование в эксплуатацию, если вы четко не поняли инструкции ниже
fr	N'installer et ne mettre en service le produit que si les instructions suivantes ont été clairement comprises.	sk	Namontujte a spusťte do prevádzky výrobok iba vtedy, pokiaľ ste jasne pochopili tento návod.
ga	Ná déan an táirge a shuiteail agus a choimisiunu mura dtuigeann tu na teoracha thíos go soileir.	sl	Izdelek vgradite in zaženite samo, če ste dobro razumeli navodila v nadaljevanju.
hr	Ne instalirajte i ne puštajte proizvod u rad ako niste jasno razumjeli donje upute.	sr	Не инсталирајте и не пуштајте производ у рад ако нисте јасно разумели упутства у наставку.
hu	Csak akkor építse be a terméket és helyezze üzembe, ha a következő útmutatót egyértelműen megértette.	sv	Montera och driftsätt produkten endast om du förstår den efterföljande instruktionen.
is	Settu ekki upp eða taktu vöruna í notkun nema þú hafir skilið greinilega leiðbeiningarnar hér að neðan.	tr	Aşağıdaki talimatları açıkça anlamadan ürünü kurmayın ve devreye almayın.
it	Montare il prodotto e metterlo in funzione solo se si sono comprese appieno le seguenti istruzioni.		

1. PRODUCT IDENTIFICATION

This document covers the following products, hereafter referred to as “sprinkler”:

- VK1021 Standard Response Pendent Sprinkler K5.6 (80.6)
- VK2021 Standard Response Pendent Sprinkler K8.0 (115)
- VK2022 Standard Response Pendent Sprinkler K8.0 (115)
- VK3021 Quick Response Pendent Sprinkler K5.6 (80.6)
- VK3521 Quick Response Pendent Sprinkler K8.0 (115)
- VK3522 Quick Response Pendent Sprinkler K8.0 (115)

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler refer to the appropriate *Technical Data Sheet*.

3. TRANSPORT AND HANDLING

⚠ WARNING

A damaged or compromised sprinkler poses the risk of fatal consequences.

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

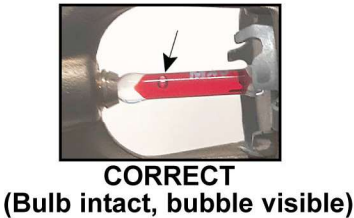
- NEVER use a sprinkler that has been exposed to temperatures exceeding the maximum allowed ambient temperature.
- NEVER use a sprinkler with a loss of liquid from the glass bulb or damage to the fusible element. A small bubble should be visible within the glass bulb; rotate the sprinkler to a horizontal position while observing the bulb to see the bubble.
- NEVER use a sprinkler that has been dropped or damaged.
- ALWAYS Protect the sprinkler from mechanical damage during storage, transport, and handling.
- NEVER use sprinklers that have been painted by anyone other than the manufacturer.
- ALWAYS protect sprinklers from being painted during installation or replacement in accordance with the installation standards.
- NEVER clean sprinklers with anything other than 7 psi or lower compressed air.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- Destroy every damaged or compromised sprinkler.

NOTICE

Protect sprinklers during transport and handling.

- ALWAYS handle the sprinkler with care.
- ALWAYS keep the protective cap on the sprinkler during transport and handling.
- NEVER remove the protective cap until the fire sprinkler system is placed in service and the potential for mechanical damage no longer exists.
- ALWAYS protect the sprinkler from direct sunlight during transport and handling.
- ALWAYS store sprinkler in a cool, dry, protected area.
- ALWAYS use original manufacturer's shipping containers.
- NEVER store a sprinkler loose in a box, bin, bucket, or other type of container.
- ALWAYS keep the sprinkler separated from other sprinklers.
- NEVER allow metal parts to contact the sprinkler operating elements.

NOTE: If the glass bulb included on the sprinkler has been exposed to ultraviolet light, the color inside the bulb may fade. This color change does not affect the operation of the sprinkler.



4. INSTALLATION

⚠ WARNING

Installation by insufficiently qualified personnel poses the risk of fatal consequences.

- This sprinkler must be installed properly by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

⚠ WARNING

Incorrect recessed installation poses the risk of fatal consequences.

- For recessed applications, this sprinkler must be installed according to the dimensions shown in Figure 1.

⚠ CAUTION

Cutting Hazard.

Sprinklers, accessories, cabinets, and packaging can have sharp edges that can cause cuts.

- Wear appropriate personal protective equipment (gloves) while handling product.

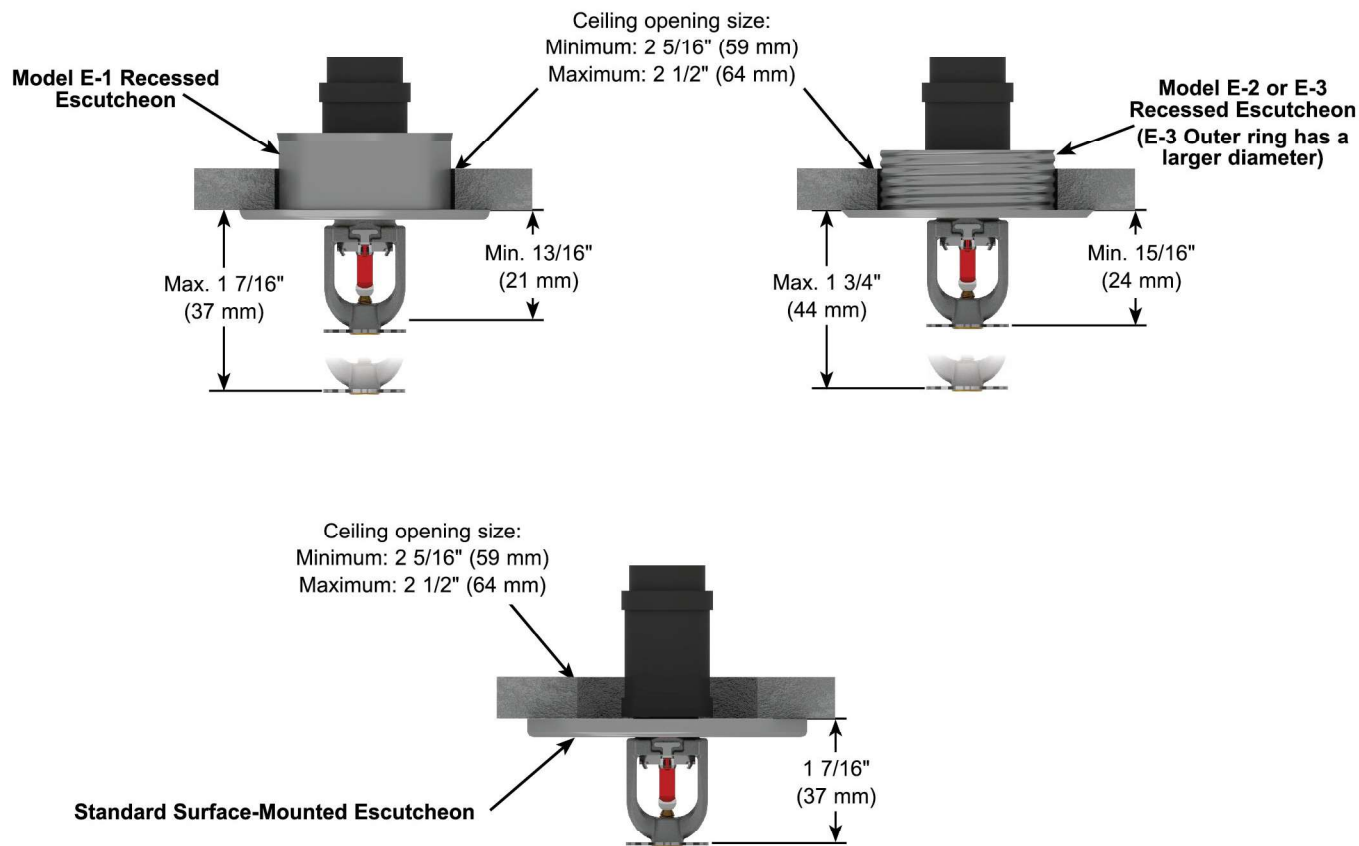


Figure – 1 Installation Dimensions with Viking Escutcheons

Optional Guards, Shields, and Escutcheons: If the sprinkler shall be installed together with a guard, shield, or escutcheon refer to the applicable documents for the products used.

1. Install all required piping in the intended installation location.
2. Verify that the sprinkler model/style, K-factor, temperature rating, and response characteristics are appropriate for the intended installation location. See Table 1 and Figure 5.
3. Inspect the sprinkler for damage. Destroy every damaged or compromised sprinkler. The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:
 - Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
 - Sprinklers that have been field painted, caulked, or mechanically damaged.
 - Sprinklers showing signs of corrosion.
4. Verify that the sprinkler is protected with the protective cap or clip.
5. Apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler only. Do not allow a build-up of compound inside the sprinkler inlet (Figure 2).

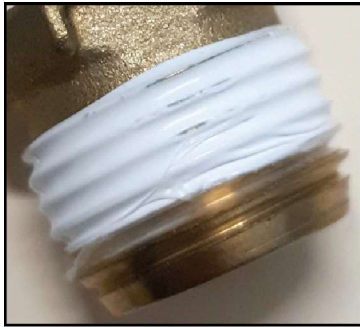


Figure – 2

6. If applicable, Install the escutcheon on the sprinkler threads.
7. **NOTICE: Do not use the deflector to start threading the sprinkler into a fitting. Use ONLY the approved wrench to install the sprinkler. Refer to the sprinkler's *Technical Data Sheet*.**
 - a) **For recessed sprinkler wrench (Figure 3a):** Carefully slide the wrench sideways around the protective cap and push upwards to engage with the sprinkler wrench flats.
 - b) **For the standard sprinkler wrench (Figure 3b):** Carefully slide the wrench onto the sprinkler wrench flats.

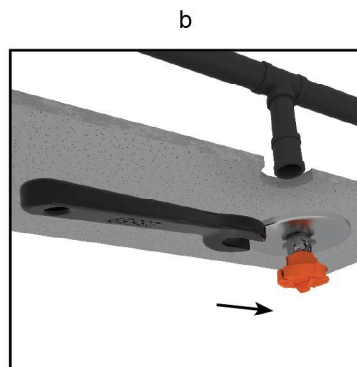
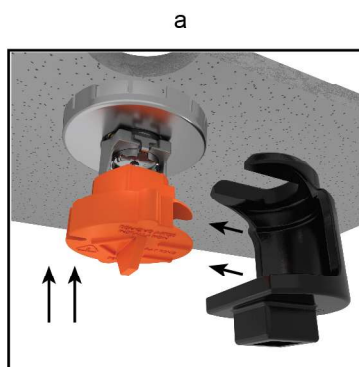


Figure – 3



Handling and Installation Instructions

Model XT-1 Pendent Sprinklers

5. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
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Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as “sprinkler” (SR=Standard Response, QR=Quick Response):

- VK1001 SR Upright Sprinkler K5.6 (80.6)
- VK2001 SR Upright Sprinkler K8.0 (115)
- VK2002 SR Upright Sprinkler K8.0 (115)
- VK3001 QR Upright Sprinkler K5.6 (80.6)
- VK3501 QR Upright Sprinkler K8.0 (115)
- VK3502 QR Upright Sprinkler K8.0 (115)
- VK1021 SR Pendent Sprinkler K5.6 (80.6)
- VK2021 SR Pendent Sprinkler K8.0 (115)
- VK2022 SR Pendent Sprinkler K8.0 (115)
- VK3021 QR Pendent Sprinkler K5.6 (80.6)
- VK3521 QR Pendent Sprinkler K8.0 (115)
- VK3522 QR Pendent Sprinkler K8.0 (115)
- VK1181 SR Conventional Sprinkler K5.6 (80.6)
- VK1201 SR Conventional Sprinkler K8.0 (115)
- VK1202 SR Conventional Sprinkler K8.0 (115)
- VK3101 QR Conventional Sprinkler K5.6 (80.6)
- VK3541 QR Conventional Sprinkler K8.0 (115)
- VK3542 QR Conventional Sprinkler K8.0 (115)

WARNING

Cancer and Reproductive Harm www.P65Warning.ca.gov

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler, refer to the appropriate Technical Data Sheet. In case an installed sprinkler needs to be replaced, refer to the appropriate Handling and Installation Instructions for the installation of the new sprinkler.

3. MAINTAINING OPERATIONAL READINESS

Functionality

During fire conditions, the operating element fuses or shatters (depending on the type of sprinkler), releasing the pip cap and sealing assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to control or extinguish the fire.

WARNING

This section contains important safety information. Read and follow all information.

Damaged or Compromised Sprinklers

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

- NEVER clean, paint, or caulk sprinklers.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- NEVER expose sprinklers to temperatures exceeding the maximum allowed ambient ceiling temperature. See the Technical Data Sheet.
- ALWAYS replace a compromised or damaged sprinkler.
- NEVER attempt to repair or reassemble a sprinkler.
- ALWAYS replace operated sprinklers and cover assemblies and sprinklers exposed to corrosive products of combustion.
- Replacement of sprinklers must only be performed following the instructions in section 4.

The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:

- Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
- Sprinklers or cover plate assemblies that have been field painted, caulked, or mechanically damaged.
- Sprinklers showing signs of extraordinary corrosion.



Obstructions and obstacles

Obstructions and obstacles may compromise sprinkler discharge patterns which are critical for proper fire protection.

- NEVER attach items to sprinklers or hang items from the ceiling in an area protected with sprinklers.
- NEVER install walls in areas protected with sprinklers without having a specialized company verifying the design of the sprinkler system.
- ALWAYS remove obstructions and obstacles to sprinkler spray patterns.

Sprinkler systems that have been subjected to a fire

Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible.

- After an event of fire, the entire sprinkler system must be inspected for damage and repaired as necessary.
- Refer to the minimum requirements of the Authority Having Jurisdiction for replacement of sprinklers.
- Consider the employment of a fire patrol as long as the sprinkler system is out of service.

Inspections and testing

The owner is responsible for having the sprinklers inspected and tested according to standards of the applicable approval body and to the requirements of the Authority Having Jurisdiction to maintain proper operating condition of the system.

- Sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. Frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the sprinkler.

The applicable approval body or Authority Having Jurisdiction may require sprinklers to be replaced after a specified term of service.

- Refer to the standards of the applicable approval body, such as NFPA, FM, VdS, or LPCB, and the requirements of the Authority Having Jurisdiction for detailed inspection, testing and replacements requirements.

Sprinklers removed from the system for testing or for any other purpose must be replaced according to section 4.

4. REMOVAL AND REPLACEMENT

WARNING

Removal and replacement of sprinklers by insufficiently qualified personnel poses the risk of fatal consequences in case of fire.

- Removal or replacement of sprinklers must be performed by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

WARNING

Removal and replacement of sprinklers will temporarily eliminate the fire protection capabilities of the sprinkler system.

- Consider the employment of a fire patrol in the affected area.
- Prior to proceeding, notify all Authorities Having Jurisdiction.


⚠ WARNING

Re-installation of a removed sprinkler may compromise the operational safety of the sprinkler system.

- NEVER reinstall a removed sprinkler.
 - ALWAYS use new sprinklers for replacement.
1. Select new sprinklers with identical performance characteristics as well as respective accessories such as escutcheons, cover plates, and protective caps. A stocked spare sprinkler cabinet may be provided for this purpose on site.
 2. According to appropriate system description and/or valve instructions, remove the system from service, drain all water, and relieve all pressure on the piping.
 3. Only for flush and concealed style sprinklers: Remove the ceiling ring or cover plate assembly of the old sprinkler by gently unthreading or pulling it off the sprinkler body (depends on the sprinkler model used).
 4. Use the proper sprinkler wrench for the old sprinkler according to its Technical Data Sheet.
 5. Only for flush and concealed style sprinklers, but not for domed concealed sprinklers: Replace the plastic protective cap over the old sprinkler and fit the wrench over the cap.
 6. Use the wrench to remove the old sprinkler by turning it counterclockwise to unthread it from the piping.
 7. Install the new sprinkler by following its Handling and Installation Instructions.
 8. Place the system back in service and secure all valves.
 9. Check for and repair all leaks.

5. DISPOSAL

At end of use the product described here should be disposed of via the national recycling system.

6. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

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Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
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Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

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vikingAPAC@vikingcorp.com