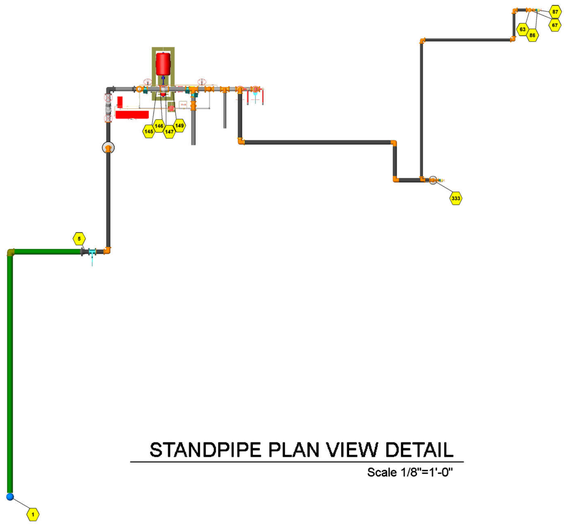
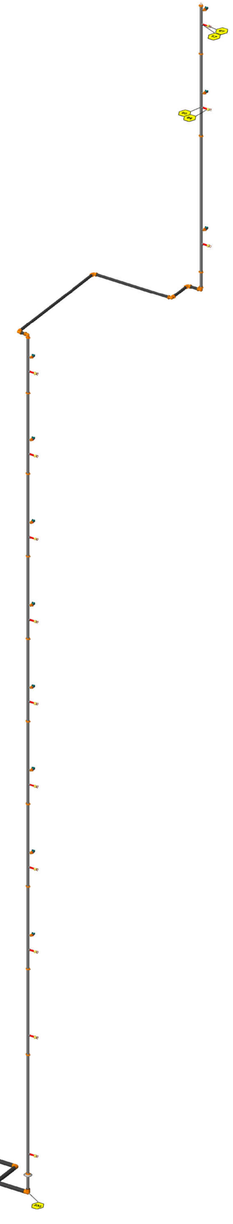
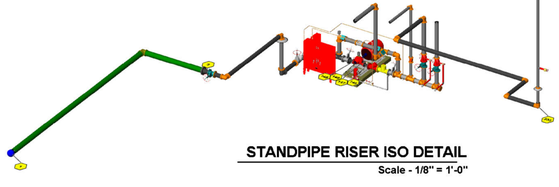


STANDPIPE PLAN VIEW DETAIL

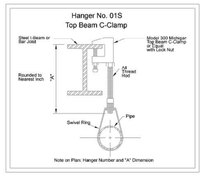
Scale 1/8"=1'-0"

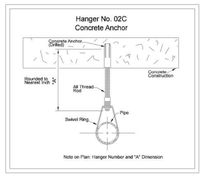


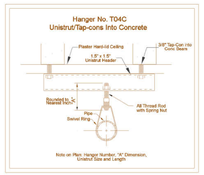


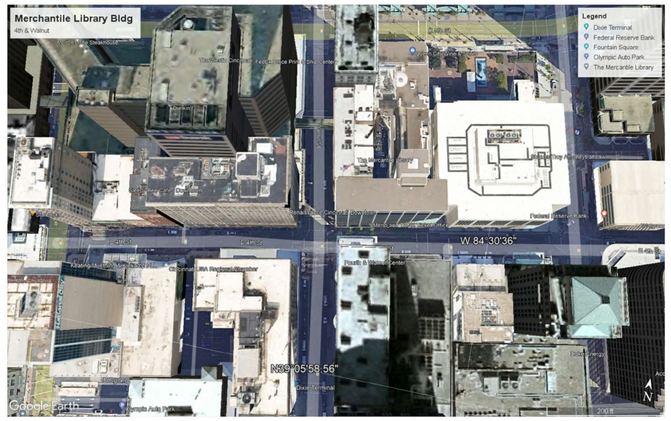
STANDPIPE RISER ISO DETAIL

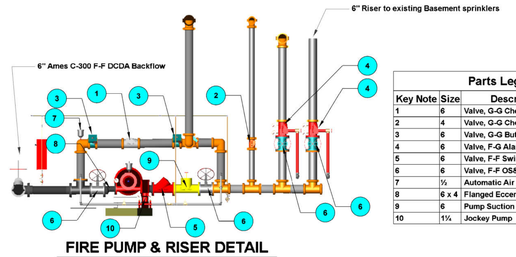
Scale - 1/8" = 1'-0"











FIRE PUMP & RISER DETAIL

Scale - 1/4" = 1'-0"

Parts Legend

Key Note	Size	Description	Quantity
1	6	Valve, G-G Check	1
2	4	Valve, G-G Check	1
3	6	Valve, G-G Butterfly	2
4	6	Valve, F-G Alarm	1
5	6	Valve, F-F Swing Check	1
6	6	Valve, F-F OS&Y, 175lb	3
7	½	Automatic Air Release	1
8	6 x 4	Flanged Eccentric Reducer	1
9	6	Pump Suction Control Valve	1
10	1½	Jockey Pump	1

	SPRINKLER SYSTEM GENERAL NOTES
1	Project scope is to renovate floors 3 thru 13 of an existing high rise building to residential use.
2	Hazard is an existing 13 story building of cast in place concrete construction covering approximately 8,950 sq ft per floor on 3rd thru 12th flooors. Penthouse covers 4,009 sq. ft.
3	Hazard upper floors are Use Group R and of non-combustible construction.
4	Renovated areas of the building to be fully protected by a hydraulically design fire protection sprinkler system configured in accordance with the provisions of NFPA-13, 2016 Edition & OBC.
5	The central stairwell to be equiped with a new combined automatic standpipe configured to the provisions of NFPA-13, 2016 Edition, NFPA-14, 2016 Edition and the OFC.
6	Sprinkler and standpipe systems are to be supplied by a new SPP electrically driven fire pump rated at 500 GPM @ 175 PSI, taking supply from the local city water main.
7	All wet standpipe system piping to be schedule 10 black steel pipe with rolled grooved ends and grooved cast iron fittings.
8	All residential wet system piping 2" and smaller to be CPVC plastic with CPVC fittings.
9	All steel piping demisions are cut, all CPVC pipe deminsions are center to center.
10	All hanger material, configurations and spacing to be in accordance with NFPA-13, 2016 Ed. requirements.
11	System monitoring points to be electronically supervised by a proprietary building fire alarm system provided by others.
12	A spare head cabinet with at least 3 of each type of sprinkler used on the project to be installed in the pump room.
13	All piping systems to be hydrostatically tested at 200 PSI for 2 hours in accordance with NFPA-13 and NFPA-25.
14	Floors Basement, First, Second 11th and 12th are not included in the scope of this contract.

Merchantile Library Bldg Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
▷	Tyco	TY1334	LF-II QR Res HSW K4.2	321	4.2	Sidewall	½	Quick	White	135°F	
◉	Tyco	TY2234	TY-FRB	208	4.2	Pendent	½	Quick	White	155°F	
◯	Tyco	Ty-3231	TY-FRB	42	5.6	Upright	½	Quick	Brass	155°F	
				Total = 571							

John Paulsen
Cert. #3016 State of Ohio
Automatic Sprinkler Systems Designer

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Owner's Responsibilities:
In localities subject to freezing conditions, it is the Owner's responsibility to provide adequate heat throughout the wet pipe sprinkler system's area and in enclosures for dry pipe, deluge and other types of valves controlling sprinkler system water supplies.

JOB INFORMATION

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Installer Information
Fire License #
#54-25-2230
STATE OF OHIO

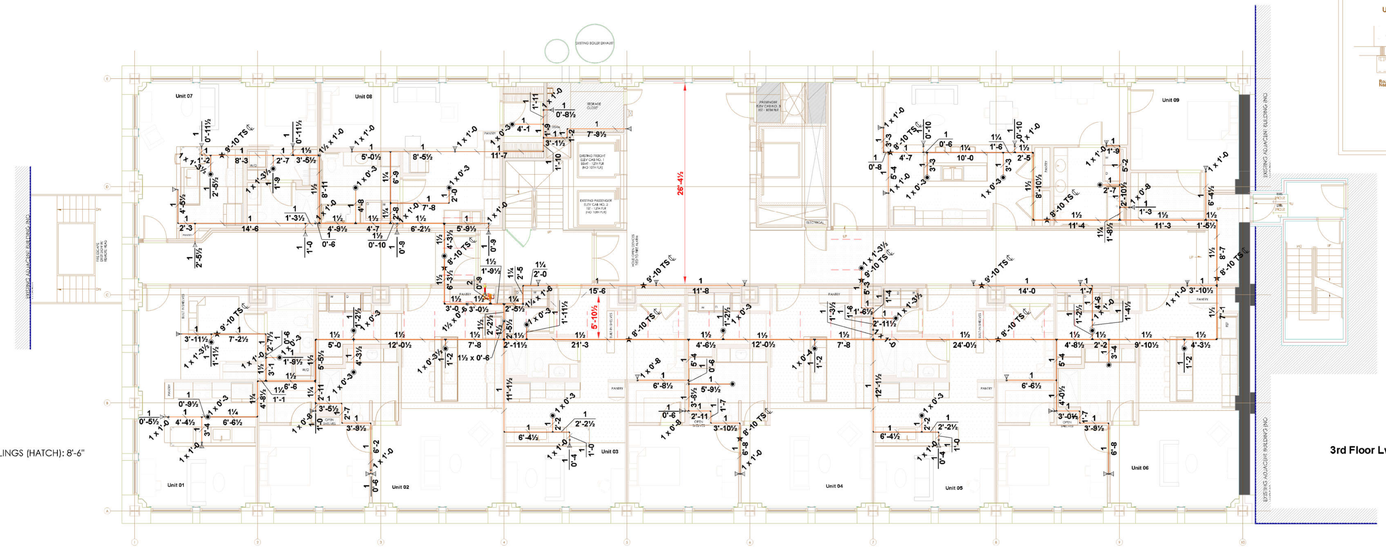
Designer Information
JOHN PAULSEN
STATE OF OHIO A.S.S.D.
DESIGNER ID# 3016

Project Name and Address

Fire Sprinkler Install
Drawings for:

MERCANTILE LIBRARY
BUILDING
414 WALNUT STREET
CINCINNATI, OHIO
45202

DRAWN BY: J. Paulsen
CHECKED BY: J. Paulsen
DATE 12/15/2022
Scale AS NOTED
Sheet FP-1



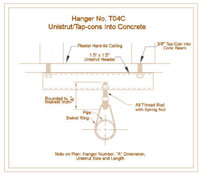
CEILING: 10'-5"
WDW SILL: 2'-2"
WDW HGHT: 7'-5"
NEW LOWERED CEILINGS (HATCH): 8'-6"

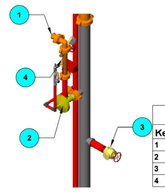
3rd Floor Lvl 30'-8 1/2"

SPRINKLER PIPING PLAN - FLOORS 3-9

Scale 1/8" = 1'-0"

Floor Sprinkler Legend												
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
	Tyco	TY2234	TY-FRB	26	4.2	Pendent	½	Quick	White	155°F	
	Tyco	TY1334	LF-8 QR Res HSW K4.2	40	4.2	Sidewall	½	Quick	White	139°F	
				Total = 66							

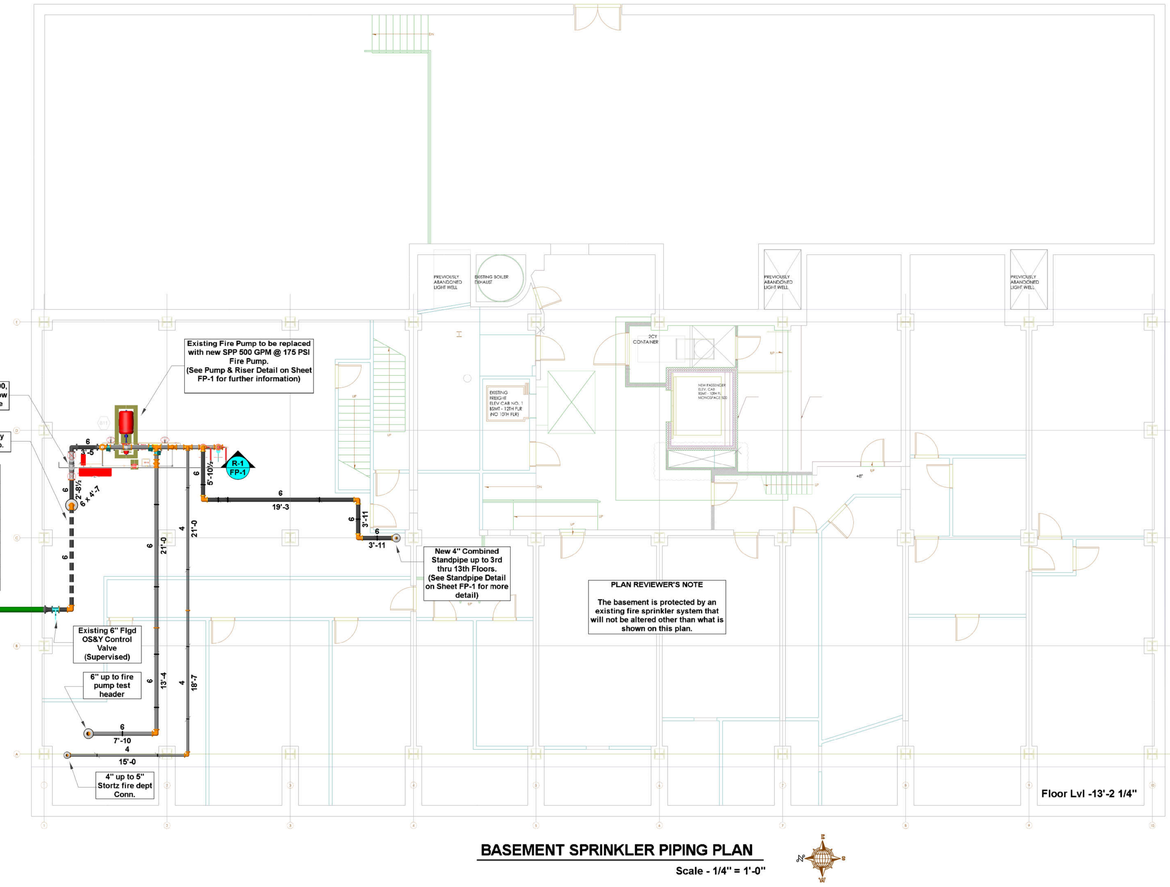




FLOOR CONTROL VALVE DETAIL

Scale 1/2" =1'-0"

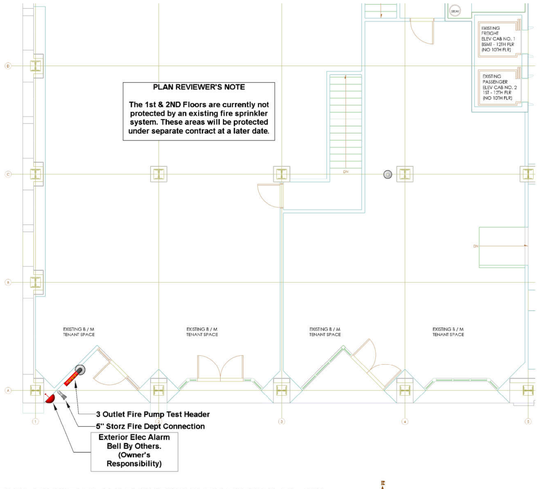
Parts Legend			
Key Note	Size	Description	Quantity
1	2	CPVC Grooved Adapter	1
2	2	Zurn ZW4104SS Valve, Pressure Reducing, T-T (angle)	1
3	2½	Hose Valve T-T	1
4	2	Grv Riser Manifold	1



Supply Flow Test Data	
Test Conducted By	Safety First Fire PRotection
Test Witnessed By	GCWW
Date of Test	9-22-2022
Time of Test	9 AM
Location	4th & Walnut
Static Pressure	52.000
Residual Pressure:	49.000
Flow	1156.00
Outside Hose Flow	100.00

BASEMENT SPRINKLER PIPING PLAN

Scale - 1/4" = 1'-0"



PARTIAL FIRST FLOOR SPRINKLER PIPING PLAN

Scale - 1/4" = 1'-0"

John Paulsen
Cert. #3016 State of Ohio
Automatic Sprinkler Systems Designer

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Ohio Cert. 53-89-1585

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Fire License #
#54-25-2230
STATE OF OHIO

Designer Information

JOHN PAULSEN
STATE OF OHIO A.S.S.D.
DESIGNER ID# 3016

Project Name and Address

Fire Sprinkler Install
Drawings for:

MERCANTILE LIBRARY
BUILDING
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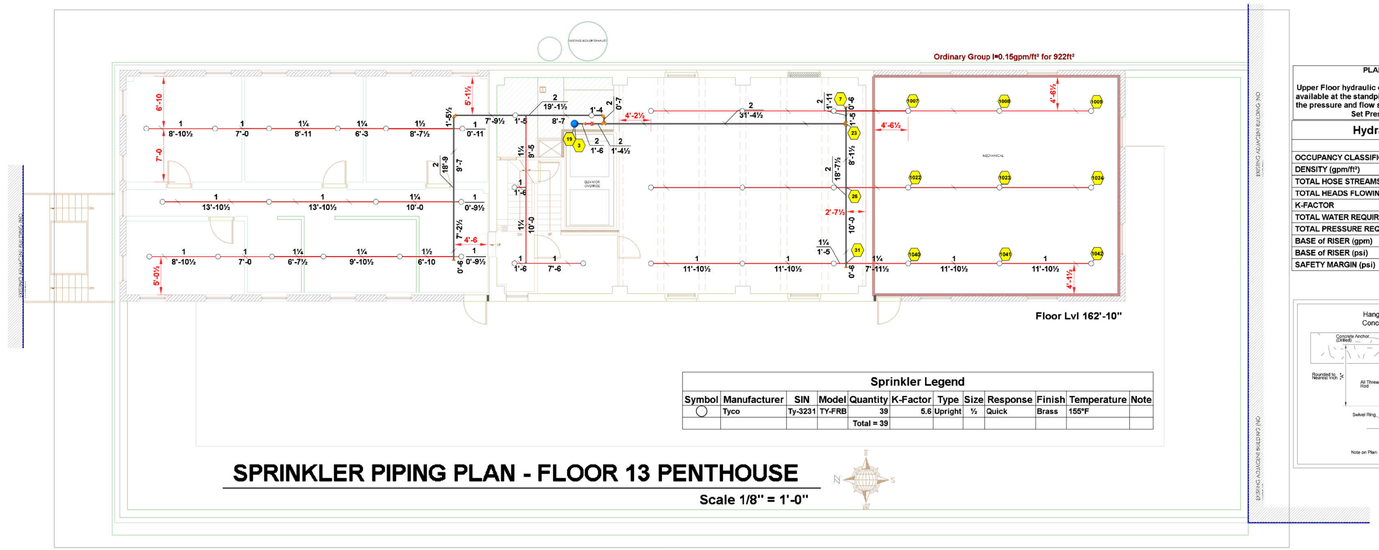
CINCINNATI, OHIO
45202

DRAWN BY:	J. Paulsen	Sheet
CHECKED BY:	J. Paulsen	FP-2
DATE	12/15/2022	
Scale	AS NOTED	



SPRINKLER PIPING PLAN - FLOOR 13 PENTHOUSE

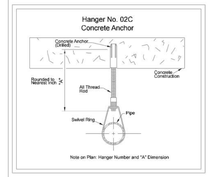
Scale 1/8" = 1'-0"

PLAN REVIEWER'S NOTE

Upper Floor hydraulic calculations asume 500 GPM @ 100 PSI available at the standpipe connection. This flow is based upon the pressure and flow settings for the Zurn ZW4104SS Factory Set Pressure Regulating Valves.

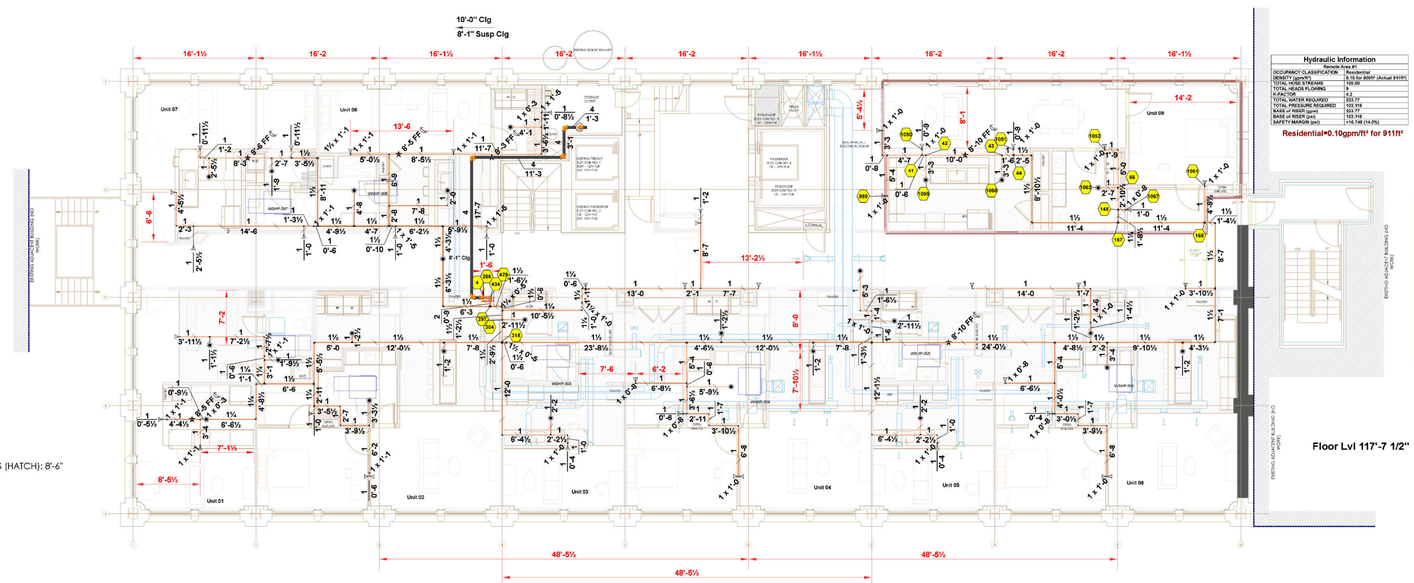
Hydraulic Information

Remote Area #2	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft²)	0.15 for 1500ft² (Actual 922ft²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	9
K-FACTOR	5.6
TOTAL WATER REQUIRED	433.03
TOTAL PRESSURE REQUIRED	39.205
BASE of RISER (gpm)	433.03
BASE of RISER (psi)	39.205
SAFETY MARGIN (psi)	+80.068 (67.1%)



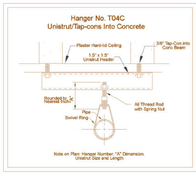
Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
◯	Tyco	Ty-3231	TY-FRB	39	5.6	Upright	½	Quick	Brass	155°F	
				Total = 39							



Hydraulic Information

Remote Area #1	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft²)	0.10 for 900ft² (Actual 911ft²)
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	8
K-FACTOR	4.2
TOTAL WATER REQUIRED	203.77
TOTAL PRESSURE REQUIRED	103.118
BASE of RISER (gpm)	203.77
BASE of RISER (psi)	103.118
SAFETY MARGIN (psi)	+14.748 (14.3%)

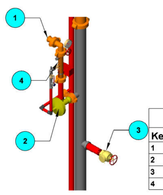


SPRINKLER PIPING PLAN - FLOOR 10

Scale 1/8" = 1'-0"

Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
▷	Tyco	TY1234	LF-II QR Res HSW K4.2	41	4.2	Sidewall	½	Quick	White	155°F	
◉	Tyco	TY2234	TY-FRB	26	4.2	Pendent	½	Quick	White	155°F	
				Total = 67							



Parts Legend

Key Note	Size	Description	Quantity
1	2	CPVC Grooved Adapter	1
2	2	Zurn ZW4104SS Valve, Pressure Reducing, T-T (angle)	1
3	2½	Hose Valve T-T	1
4	2	Grv Riser Manifold	1

FLOOR CONTROL VALVE DETAIL

Scale 1/2" =1'-0"

John Paulsen
Cert. #3016 State of Ohio
Automatic Sprinkler Systems Designer

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