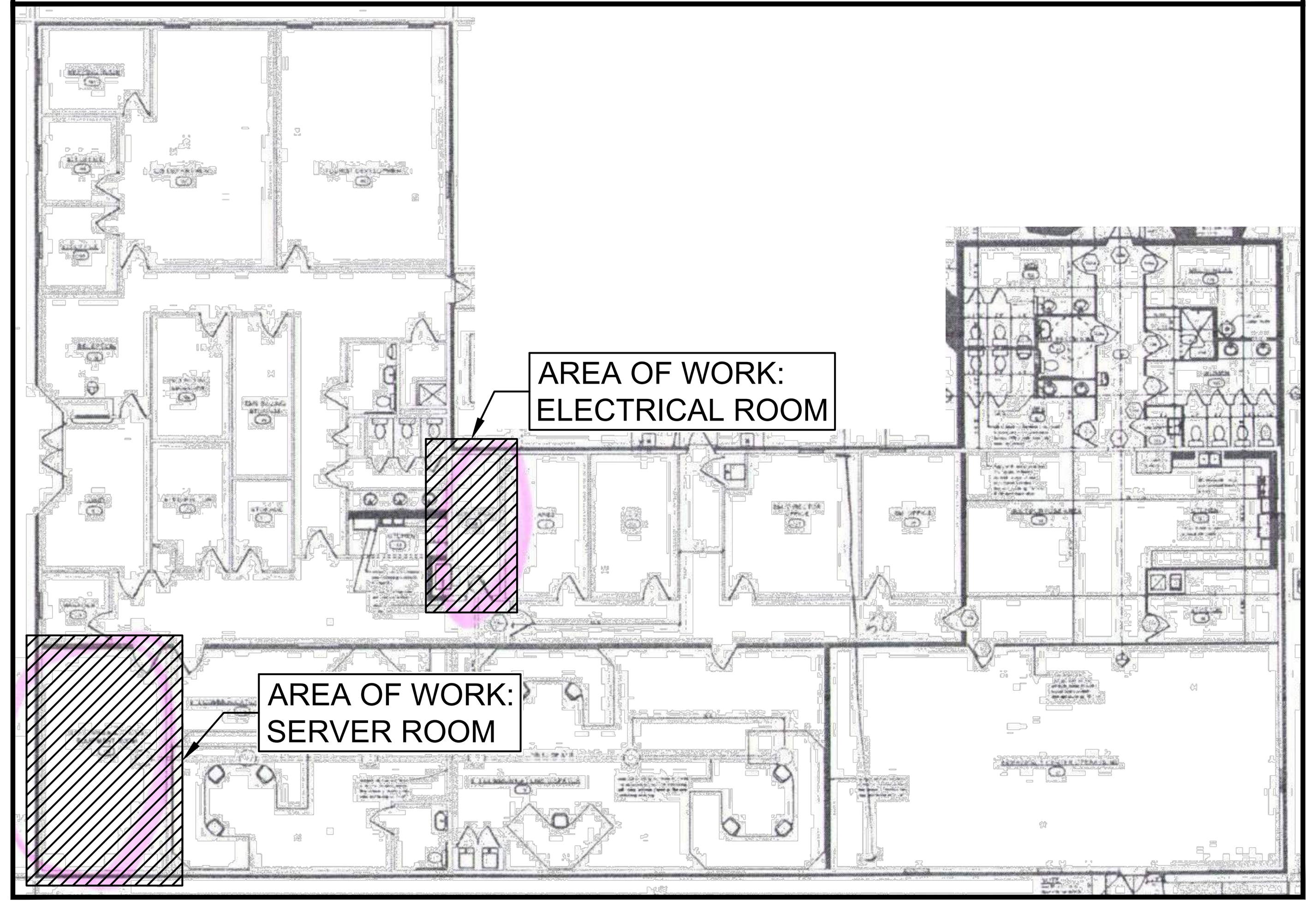
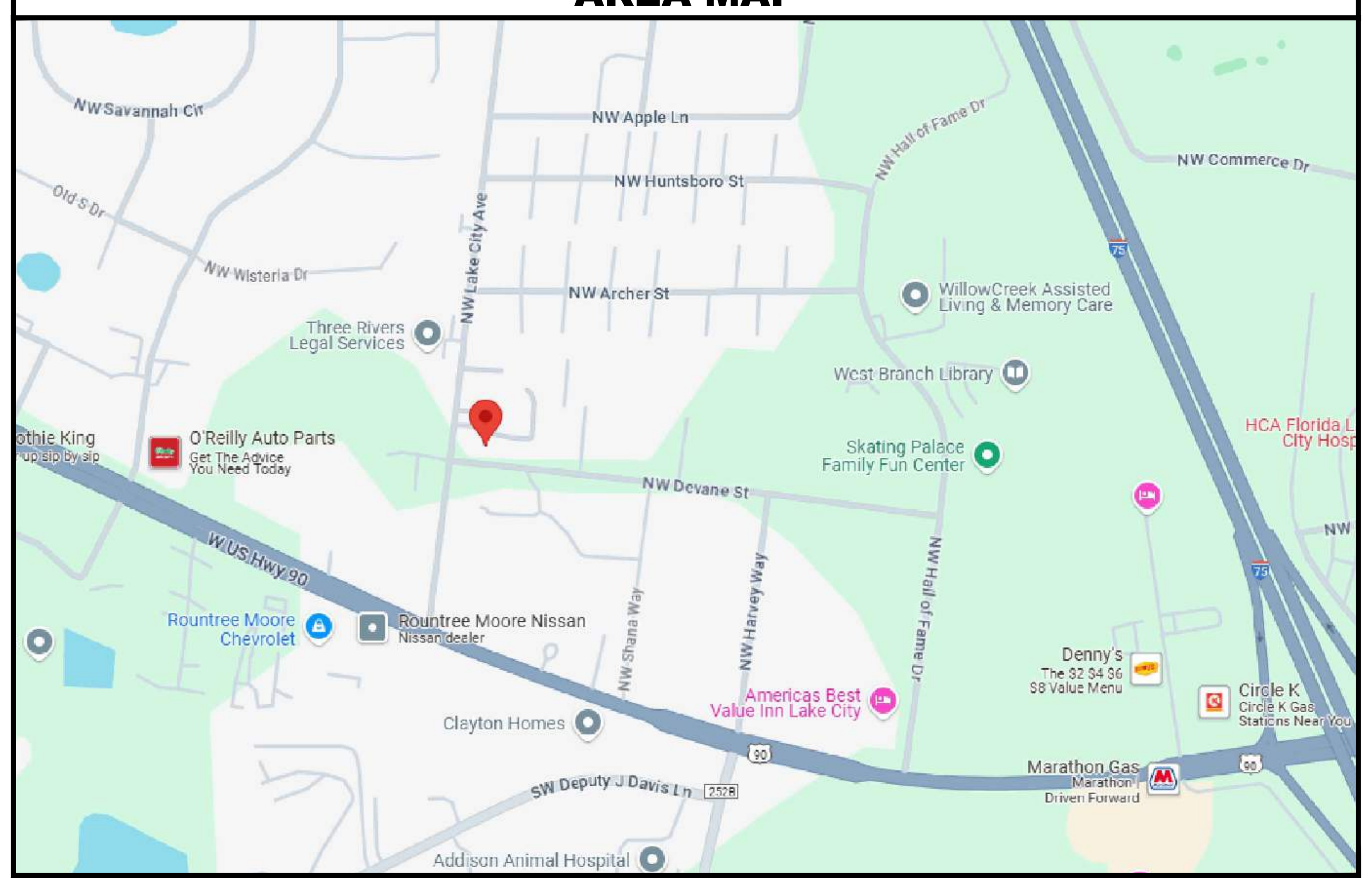
SITE MAP - NOT TO SCALE



AREA MAP



DRAWING INDEX

PAGE	DESCRIPTION
FS1.0	COVER SHEET
FS2.0	PIPING FLOOR PLAN & TANK DETAILS
FS3.0	SERVER ROOM SYSTEM ISO. DRAWING & CALCS.
FS3.1	ELECTRIC ROOM SYSTEM ISO. DRAWING & CALCS.
FS4.0	DETECTION & CONTROLS FLOOR PLAN
FS5.0	DEVICE WIRING DETAILS
FS6.0	HANGER & MOUNTING DETAILS

SEQUENCE OF OPERATIONS

INPUTS AND ACTIONS / OUTPUTS AND CONTROLS

OUTPUTS AND CONTROLS	SINGLE DETECTOR ZONE IN ALARM	2ND SMOKE DETECTOR ZONE IN ALARM	EXPIRATION OF THE 30 SEC. TIME DELAY	MANUAL AGENT RELEASE STATION	ABORT STATION	TROUBLE	BATTERY FAULT	GROUND FAULT	OPEN CIRCUIT FAULT	LOSS OF PRIMARY POWER FAULT	ACTIVATION OF LOW PRESSURE SWITCH	DISCHARGE PRESSURE SWITCH	DISABLE SWITCH IN DISABLE POSITION	CONTROL HEAD DISCONNECTED FROM CYLINDER
ACTIVATE ALARM BELL IN THE PROTECTED AREA	●											●		
ACTIVATE PRE-DISCHARGE HORN/STROBES IN THE PROTECTED AREA		●		●								●		
ACTIVATE DISCHARGE STROBE OUTSIDE THE PROTECTED AREA			●	●								●		
SOUND LOCAL PIEZO	●	●		●	●	●	●	●	●	●	●	●	●	●
INDICATE THE DEVICE ZONE AT THE CONTROL PANEL	●	●		●							●	●	●	●
SEND ALARM SIGNAL TO BUILDING FIRE ALARM/REMOTE MONITORING (IF APPLICABLE)	●			●								●		
SEND TROUBLE SIGNAL TO BUILDING FIRE ALARM/REMOTE MONITORING (IF APPLICABLE)					●	●	●	●	●	●			●	
SEND SUPERVISORY SIGNAL TO BUILDING FIRE ALARM/REMOTE MONITORING (IF APPLICABLE)											●		●	●
ILLUMINATE LED ON THE SMOKE DETECTOR	●	●												
ACTIVATE 30 SEC. TIME DELAY		●												
HOLD THE AGENT RELEASE UNTIL THE ABORT IS RELEASED					●									
RELEASE THE GAS INTO THE PROTECTED AREA			●	●										
SHUT DOWN ALL AIR HANDLERS IN THE AREA (AS REQUIRED)		●		●								●		
SHUT DOWN ALL SMOKE DAMPERS IN THE AREA (AS REQUIRED)		●		●								●		
SHUT DOWN ALL EXHAUST FANS IN THE AREA (BY OTHERS, AS REQUIRED)		●		●								●		

PROJECT NOTES

PROJECT GENERAL INFORMATION

SYSTEM TYPE	TOTAL FLOOD SUPPRESSION SYSTEM.
DESCRIPTION	FIKE FIRE SUPPRESSION SYSTEM, UTILIZING A POWER LIMITED, FULLY SUPERVISED, MANUAL AND AUTOMATIC INITIATION/DETECTION SYSTEM. THIS SYSTEM SHALL BE MONITORED BY THE BUILDING FIRE ALARM SYSTEM.

DESIGN STANDARDS

1	MANUFACTURES GUIDELINES
2	NFPA 72 (2019)
3	NFPA 70 (2020)
4	NFPA 2001 (2018)
5	FBC (2023,8TH EDITION) AS AMENDED BY THE AHJ
6	FFPC (2023,8TH EDITION) AS AMENDED BY THE AHJ

PROTECTED AREAS		SQ. FT.
SERVER ROOM	SF-1230 CLEAN AGENT SUPPRESSION SYSTEM	386
ELECTRICAL ROOM	SF-1230 CLEAN AGENT SUPPRESSION SYSTEM	98

SCOPE OF WORK:

1. INSTALL TWO (2) NEW CLEAN AGENT TOTAL FLOOD FIRE SUPPRESSION SYSTEM TO PROVIDE INDEPENDENT PROTECTION FOR THE AREAS DESCRIBED ABOVE.
2. THE FIRE SUPPRESSION SYSTEM SHALL SEND AUTOMATIC SIGNALS TO THE BUILDING FIRE ALARM SYSTEM. REFER TO THE RISER DIAGRAM AND THE SEQUENCE OF OPERATIONS FOR THE SPECIFIC SIGNALS TO BE TRANSMITTED.
3. THE FIRE SUPPRESSION SYSTEM SHALL PROVIDE BATTERY BACKUP AS A SECONDARY POWER SOURCE. REFER TO THE BATTERY CALCULATIONS LOCATED ON THESE DRAWINGS FOR THE STANDBY TIME AND SIZE OF BATTERIES REQUIRED.
4. THIS PROJECT'S FIRE SUPPRESSION SYSTEM SHALL BE DESIGNED UTILIZING THE STANDARDS LOCATED IN THE "DESIGN STANDARDS" SECTION ON THESE DRAWINGS.

WORK BY OTHER TRADES:

1. THE ITEMS WITHIN THIS SECTION ARE NOT PART OF THE SCOPE OF WORK AND ARE CONSIDERED TO BE PROVIDED BY OTHERS.
2. ALL 120VAC DEDICATED POWER CIRCUIT, CONDUIT, AND WIRING.
3. ALL AIR HANDLING UNIT SHUTDOWN CONDUIT AND WIRING.
4. ALL DUCT SMOKE DETECTORS, DETECTOR HOUSING, DETECTOR POWER, RELATED INSTALLATION LABOR, CONDUIT, AND WIRING.
5. DUCT SMOKE MANOMETER TESTING AND DOCUMENTATION.
6. DUCT SMOKE DETECTORS AND REMOTE LED/TEST STATIONS.
7. DAMPER CONTROLS INSTALLATION, CONDUIT, AND WIRING.
8. SEALING THE ROOM TO MAINTAIN PROPER INTEGRITY OF THE ROOM.
9. THE BUILDING FIRE ALARM SYSTEM.

GENERAL NOTES:

1. THIS PROJECT'S FIRE SUPPRESSION SYSTEM SHALL BE INSTALLED IN A "WORKMAN LIKE MANOR" UTILIZING "GOOD COMMERCIAL PRACTICE".
2. TO ENSURE THE PROPER OPERATION OF THE FIRE SUPPRESSION SYSTEM, A COMPLETE FUNCTIONAL TEST SHALL BE PERFORMED PRIOR TO THE FINAL INSPECTION BY THE AUTHORITY HAVING JURISDICTION (A.H.J.).
3. THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL TESTING WITH THE LOCAL A.H.J., GENERAL CONTRACTOR AND ANY ASSOCIATED CONTRACTORS.
4. UPON COMPLETION OF THE PROJECT, THE INSTALLING CONTRACTOR SHALL PROVIDE INSPECTION REPORTS, OPERATIONS MANUALS, AND SHOP DRAWINGS TO THE OWNER REPRESENTATIVE.
5. ALL OF THE FIRE SUPPRESSION SYSTEM PROGRAMMING THAT IS REQUIRED SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR.
6. ALL OF THE FIRE SUPPRESSION CONTROL PANEL TERMINATIONS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR.
7. THE FIRE SUPPRESSION INSTALLATION SHALL BE IN ACCORDANCE WITH THESE PLANS. CHANGES IN DEVICES, LOCATIONS, AND/OR CIRCUITS MUST BE APPROVED. IF THE CHANGES ARE SUFFICIENT TO REQUIRE RE-ENGINEERING A FEE MAY BE CHARGED TO THE CONTRACTOR REQUESTING THE CHANGES.
8. THE DISCHARGE TIME OF THE CLEAN AGENT SYSTEM SHALL BE WITHIN 10 SECONDS OR LESS. THE PROTECTED VOLUME SHALL BE TOTALLY FLOODED AT A MINIMUM OF 4.5% CONCENTRATION. THE PROTECTED VOLUME SHALL MAINTAIN THIS CONCENTRATION FOR A PERIOD OF 10 MINUTES.
9. ALL DOORS WITHIN THE PROTECTED AREA SHALL REQUIRE DOOR CLOSURES, DOOR SEALS AND DOOR SWEEPS TO PREVENT LEAKAGE AND MAINTAIN THE PROPER CLEAN AGENT CONCENTRATION LEVEL.
10. A DOOR FAN TEST SHALL BE PERFORMED TO VERIFY THE INTEGRITY OF THE ROOM. ALL PENETRATIONS, HOLES, CABLE TRAYS, AND TRENCHES THAT LEAVE THE PROTECTED AREA SHALL BE SEALED.

ELECTRICAL INSTALLATION NOTES:

1. THE FIRE SUPPRESSION SYSTEM WIRING SHALL BE INSTALLED UTILIZING THE STANDARDS LOCATED IN THE "DESIGN STANDARDS" ON THESE DRAWINGS.
2. REFER TO THE "WIRE CHART" LOCATED ON THESE DRAWINGS FOR QUANTITY, TYPE & SIZE OF THE WIRE.
3. ALL INDICATING DEVICE CIRCUITS (IDC) SHALL BE CLASS "B".
4. ALL NOTIFICATION APPLIANCE CIRCUITS (NAC) SHALL BE CLASS "B".
5. THE FIRE SUPPRESSION SYSTEM WIRING SHALL BE INSTALLED IN A MINIMUM OF 1/2" (EMT) CONDUIT.
6. A LICENSED ELECTRICAL CONTRACTOR SHALL PROVIDE THE INSTALLATION, LABOR, CONDUIT, AND WIRING FOR ALL 120VAC POWER CIRCUITS CONNECTED TO THE FIRE ALARM SYSTEM.

MOUNTING INSTRUCTIONS:

1. ALL DEVICES SHALL BE INSTALLED UTILIZING THE STANDARDS LOCATED IN THE "DESIGN STANDARDS" ON THESE DRAWINGS.
2. SMOKE DETECTORS SHALL BE MOUNTED AS FOLLOWS:
   - 2.1. CENTER OF CEILING TILES.
   - 2.2. NO CLOSER THAN THREE (3) FEET FROM AN AIR MOVING REGISTER.
   - 2.3. NO LESS THAN 4" FROM A SIDE WALL.
3. MANUAL RELEASE & ABORT STATIONS SHALL BE MOUNTED AS FOLLOWS:
   - 3.1. 48" TO THE TOP OF THE DEVICE ABOVE THE FINISHED FLOOR.
   - 3.2. WITHIN 5" OF THE EXIT DOOR WHERE POSSIBLE.
4. DISCHARGE HORN/STROBE UNITS SHALL BE MOUNTED AS FOLLOWS:
   - 4.1. SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" ABOVE THE FINISHED FLOOR.
   - 4.2. WHEN CEILING HEIGHTS ARE LESS THAN 80", MOUNT THE DEVICE 6" BELOW THE CEILING.
   - 4.3. ALL CEILING MOUNT DEVICES SHALL BE IN THE CENTER OF THE TILE.
   - 4.4. SET ALL HORN STROBES TO HIGH dBA SETTING.
   - 4.5. SET CANDELA RATING AS NOTED ON PLANS.
5. EXIT DISCHARGE STROBE ONLY UNITS SHALL BE MOUNTED AS FOLLOWS:
   - 5.1. AT EVERY DOOR EXITING THE PROTECTED AREA.

CLEAN AGENT PIPING REQUIREMENTS:

1. REFER TO SYSTEM DRAWINGS AND HYDRAULIC CALCULATIONS FOR THE LOCATION AND LAYOUT OF THE AGENT DISTRIBUTION PIPING SYSTEM. EXAMINE THE CONFIGURATION OF THE PIPING SYSTEM TO ENSURE THE PIPING AND DISCHARGE NOZZLES DO NOT INTERFERE WITH SOLID STRUCTURE OBJECTS OR EQUIPMENT WITHIN THE HAZARD AREA BEFORE THE PIPING CONSTRUCTION BEGINS. SHOULD ANY CONFLICTS OCCUR NOTIFY THE FIRE SUPPRESSION CONTRACTOR TO MAKE THE APPROPRIATE CHANGES ON THE SYSTEM DRAWINGS AND THE HYDRAULIC CALCULATIONS BEFORE ANY PIPING CONSTRUCTION BEGINS.
2. PIPING MATERIAL SHALL CONFORM TO THE REQUIREMENTS AS OUTLINED IN NFPA 2001, SECTION 4-2.1 OF THE CURRENT EDITION. SCHEDULE 40 OR SCHEDULE 80 PIPE (BLACK OR GALVANIZED) SHALL CONFORM TO ASTM A53 OR A106 SHALL BE THE ONLY ACCEPTABLE PIPE USED IN THE AGENT DISTRIBUTION PIPING SYSTEM. ORDINARY CAST IRON PIPE, STEEL PIPE CONFORMING TO ASTM A-120, OR NON-METALLIC PIPE SHALL NOT BE PERMITTED IN THE AGENT DISTRIBUTION PIPING SYSTEM.
3. PIPE FITTINGS SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN NFPA 2001, SECTION 4-2.1 OF THE CURRENT EDITION. MALLEABLE IRON FITTINGS (BLACK OR GALVANIZED) SHALL BE 300 LB (135 KG) CLASS FITTINGS CONFORMING TO ASTM SPECIFICATION A-197. ORDINARY CAST IRON FITTING AND 150 LB (68 KG) CLASS FITTINGS SHALL NOT BE PERMITTED. VICTALIC 77 OR GEM 7000 GROOVED FITTINGS SHALL BE PERMITTED AS LONG AS THEY ARE UL LISTED FOR THIS APPLICATION. THREADED, WELDED OR FLANGED FITTINGS SHALL BE PERMITTED AS LONG AS THEY CONFORM TO THE ABOVE REQUIREMENTS. ALL FITTINGS SHALL BE THREADED FITTINGS UNLESS OTHERWISE NOTED ON THE SYSTEM DRAWINGS. HOLE-CUT OR SIMILAR TYPE FITTINGS SHALL NOT BE USED.
4. THE METHOD OF JOINING ALL PIPING SHALL BE IN ACCORDANCE WITH NFPA 2001. TEFLON TAPE IS RECOMMENDED AND SHALL BE APPLIED ON THE MALE PIPE THREADS. ALL GROOVED COUPLINGS SHALL BE LUBRICATED PER MANUFACTURERS SPECIFICATIONS. THREADS ON ALL PIPE AND FITTINGS SHALL BE TAPERED CONFORMING TO ANSI SPECIFICATION B-20.1.
5. REDUCTIONS IN PIPE SIZE SHALL BE DIRECTLY AFTER A TEE, UTILIZING A CONCENTRIC BELL REDUCER, WITH THE TEE BEING THE SAME PIPE SIZE AS THE INLET LINE TO THE TEE. REDUCTIONS IN PIPE SIZE MAY ALSO BE MADE USING A CONCENTRIC BELL REDUCER AFTER A UNION, PROVIDED THE NEXT CHANGE IN DIRECTION (TEE) IS LOCATED A MINIMUM OF 10 PIPE DIAMETERS DOWNSTREAM OF THE CONCENTRIC BELL REDUCER. CONCENTRIC BELL REDUCERS OR CONCENTRIC REDUCING COUPLINGS SHALL BE USED TO MAKE ALL REDUCTIONS IN PIPE SIZE. REDUCING BUSHINGS, WELD-O-LET, HOLE-CUT FITTINGS AND REDUCING TEE'S SHALL NOT BE PERMITTED.
6. ALL PIPING SHALL BE INSTALLED IN A PROFESSIONAL MANNER WITH "GOOD COMMERCIAL PRACTICE". ALL PIPING AND FITTINGS SHALL BE BLOWN CLEAR , SWABBED WITH A SUITABLE SOLVENT (ACETONE, TRICHLORETHANE, ECT.) AND ALL PIPE LENGTH SHALL BE REAMED TO REMOVE ALL BURRS PRIOR TO INSTALLATION. ALL PIPING SHALL BE RIGIDLY SUPPORTED BY A COMBINATION NETWORK COMPRISED OF PIPE HANGERS AND RIGID SUPPORT HANGERS. PIPE HANGERS ARE USED SUPPORT THE "DEAD LOAD" OF THE PIPING SYSTEM AND SHALL BE SPACED AT INTERVALS NOT TO EXCEED 15 FEET. RIGID PIPE SUPPORTS ARE REQUIRED TO SUPPORT THE" LIVE LOAD" OF THE PIPING SYSTEM DURING THE AGENT DISCHARGE AND IS REQUIRED AT EACH DIRECTIONAL CHANGE FITTING, TEE AND NOZZLE. ALL 180° NOZZLE REQUIRE BACK-BRACING IN THE OPPOSITE DIRECTION OF THE DISCHARGE PATTERN. EARTHQUAKE BRACING SHALL BE USED WHERE REQUIRED BY LOCAL CODE. REFER TO ANSI B31.1 FOR BRACING REQUIREMENTS.
7. CARE SHOULD BE TAKEN WHEN BRACING THE PIPING TO INSURE THE NOZZLE LOCATIONS ARE WITHIN 1 FOOT OF THE LOCATIONS ON THE SYSTEM PLANS. CORRECT NOZZLES SHALL BE INSTALLED EXACTLY IN ACCORDANCE WITH THE SYSTEM PLANS AND DEFLECTOR SET SCREWS SHALL BE IN PLACE DURING A SYSTEM DISCHARGE OR AGENT DISTRIBUTION OR THE SYSTEM'S ABILITY TO SUPPRESS A FIRE MAY ADVERSELY BE AFFECTED. NOZZLES SHALL BE INSTALLED PERPENDICULAR TO THE CEILING FOR PROPER AGENT DISTRIBUTION. 180° NOZZLES SHOULD BE ALIGNED PROPERLY WITH RESPECT TO ADJACENT WALLS (ORIFICE HOLES ORIENTED PARALLEL TO WALL SO NO DIRECT WALL IMPINGEMENT OF AGENT OCCURS).
8. FINAL INSTALLATION ACCEPTANCE SHALL BE IN ACCORDANCE WITH NFPA 2001 SECTION 7-7 OF THE LATEST EDITION.
9. ALL SYSTEM PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE TO THE SYSTEM PLANS. IF BUILDING LAYOUT CHANGES AND THE SYSTEM PIPING CHANGES ARE NECESSARY, THEY MUST BE APPROVED BY THE FIRE SUPPRESSION CONTRACTOR .
10. INSTALL PIPE, HANGARS AND BRACING IN ACCORDANCE WITH THE MOST RECENT EDITION OF NFPA 2001, NFPA 13 AND THE FSSA PIPE DESIGN HANDBOOK.

NFPA 72 (2019)

10.5.1 SYSTEM DESIGNER.

10.5.1.1 PLANS AND SPECIFICATIONS SHALL BE DEVELOPED IN ACCORDANCE WITH THIS CODE BY PERSONS WHO ARE EXPERIENCED IN THE DESIGN, APPLICATION, INSTALLATION, AND TESTING OF THE SYSTEMS.

10.5.2 SYSTEM INSTALLER.

10.5.2.1 INSTALLATION PERSONNEL SHALL BE QUALIFIED OR SHALL BE SUPERVISED BY PERSONS WHO ARE QUALIFIED IN THE INSTALLATION, INSPECTION, AND TESTING OF THE SYSTEM.

EQUIPMENT LIST

TYPE	MANUFACTURER	PART NUMBER	DESCRIPTION	QTY
PANEL	FIKE	10-063-1-R-1	CONVENTIONAL FIRE SUPPRESSION CONTROL PANEL (MODEL: SHP PRO)	2
PNLRLY	FIKE	10-2204	PANEL RELAY MODULE (CRM4)	2
BATTERY	POWERSONIC	PS-1270	12 VOLT 7 AMP HOUR STORAGE BATTERY	4
PHOTO	FIKE	63-1308	CONVENTIONAL PHOTOELECTRIC SMOKE DETECTOR	8
BASE	FIKE	67-1034	6" DETECTOR BASE (430 OHM MODEL: NS6-224)	8
CNTRLCMBO	FIKE	10-2975	DOUBLE COMBINATION MANUAL RELEASE(P/N:10-2982) AND ABORT (P/N:10-2981)	2
WST	FIKE	20-123-01	SELECTABLE CANDELA STROBE (MODEL: 904-1321-002)	2
WHS	FIKE	20-123-48	SELECTABLE CANDELA HORN/STROBE (MODEL: 904-1317-002)	2
BELL	FIKE	20-123-116	6" ALARM BELL (GENTEX 904-1278-2)	2
CYLINDER	FIKE	70-361	60LB AGENT STORAGE CYLINDER	1
CYLINDER	FIKE	70-363	150LB AGENT STORAGE CYLINDER	1
IRM	FIKE	70-279	AGENT RELEASE - IMPULSE RELEASING KIT	2
PRESSW	FIKE	02-12534	DISCHARGE PRESSURE SWITCH	2
LOW PRES	FIKE	02-15801	LOW PRESSURE SWITCH	2
NOZZLE	FIKE	80-122-075-3480	180 DEGREE DISCHARGE NOZZLE	1
NOZZLE	FIKE	80-122-150-6875	180 DEGREE DISCHARGE NOZZLE	1
SIGN	FIKE	02-15995	SIGN - CAUTION AREA PROTECTED BY	2
SIGN	FIKE	02-15996	SIGN - CAUTION SYSTEM DISCHARGE ALARM	2
SIGN	FIKE	02-15997	SIGN - CAUTION EXIT AREA	2
SIGN	FIKE	02-15998	SIGN - SYSTEM RELEASE	2
SIGN	FIKE	02-16000	SIGN - SYSTEM ABORT	2
HARNESS	FIKE	10-2517	WIRE ASSEMBLY 7/18 AH BATTERIES (WITH 27K RESISTOR)	2
SURGE	SPACE AGE	E120V-GT	SURGE PROTECTOR	2

SYMBOL LEGEND

SYMBOL	DESCRIPTION
FSCP	FIRE SUPPRESSION CONTROL PANEL
P XXX	PHOTOELECTRIC SMOKE DETECTOR (XXX = ADDRESS OR ZONE)
A XXX	AGENT ABORT STATION (XXX = ZONE OR ADDRESS)
P XXX	AGENT MANUAL RELEASE STATION (XXX = ZONE OR ADDRESS)
B	AGENT FIRST ALARM BELL
H S#	AGENT PRE-DISCHARGE HORN/STROBE S#=CIRCUIT #
L S#	AGENT DISCHARGE STROBE S#=CIRCUIT #
C	CLEAN AGENT CONTROL HEAD MONITOR SWITCH
R	AGENT DISCHARGE CONTROL HEAD
P	AGENT DISCHARGE PRESSURE SWITCH
L	AGENT CYLINDER LOW PRESSURE SWITCH
	AGENT 180° DISCHARGE NOZZLE
XXX	CLEAN AGENT STORAGE CYLINDER (XXX = FILL WEIGHT)

NOTE:

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA34748

This item has been digitally signed and sealed by James M. Curtis, P.E. on the date adjacent to the seal.

JAMES M. CURTIS LICENSE No. 37912 STATE OF FLORIDA PROFESSIONAL ENGINEER

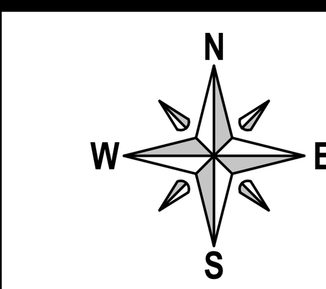
Digitally signed by James Curtis
Date: 2025.03.04 11:54:27 -05'00'

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Flagship Fire Inc.
1500 15TH AVE. DR. E., SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 787080001206 / EC13010870

REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW



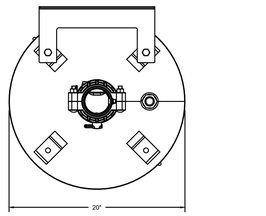
REVIEW

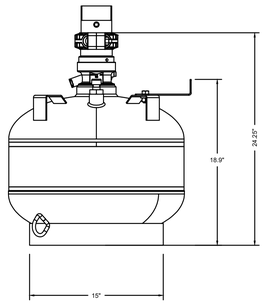
PROJECT	COLUMBIA COUNTY 911
ADDRESS	263 NW LAKE CITY AVENUE LAKE CITY, FL 32055
DESCRIPTION	FIRE SUPPRESSION SYSTEM COVER SHEET

AHJ: LAKE CITY, FL	
DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB# : 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: ----
SHEET: FS1.0 OF	TOTAL QTY OF SHEETS IN SET: 7
REV: 0	DATE: 02/05/2025

ZACHARYROGERS 2/5/2025

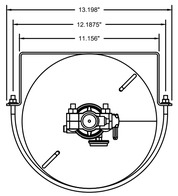
FIKE 150 LB CYLINDER

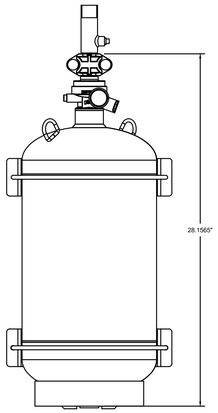




MOUNTING INSTRUCTIONS	USED FOR:
INSTALL PER MANUFACTURERS INSTRUCTION MANUAL.	FIKE 70-267 ECARO/FM200 70-363 NOVEC

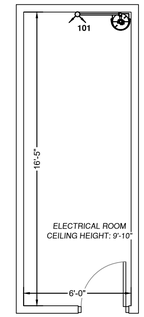
FIKE 60LB CYLINDER

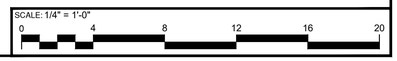




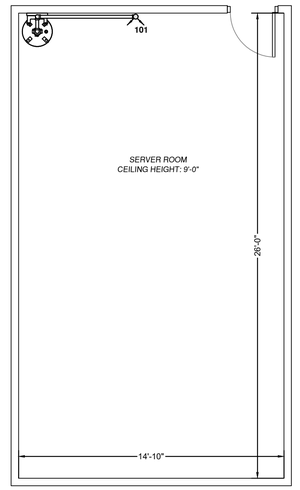
MOUNTING INSTRUCTIONS	USED FOR:
MOUNT PER MANUFACTURERS INSTRUCTION	FIKE P/N: 70-265 ECARO/FM200 70-361 NOVEC

CLEAN AGENT PIPING FLOOR PLAN - ELECTRICAL ROOM





CLEAN AGENT PIPING FLOOR PLAN - SERVER ROOM



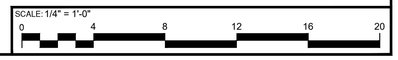


TABLE A.5.5.1(a) FK-5-1-12 TOTAL FLOODING QUANTITY (US UNITS)

		WEIGHT REQUIREMENTS OF HAZARD VOLUME, W/V (lb/ft³)[b]							
TEMP(t) (°F)[c]	SPECIFIC VAPOR VOLUME(s) (ft/lb)[d]	DESIGN CONCENTRATION (% BY VOLUME)[c]							
		3	4	5	6	7	8	9	10
-20	0.93678	0.0330	0.0445	0.0562	0.0681	0.0803	0.0928	0.1056	0.1186
-10	0.96119	0.0322	0.0433	0.0548	0.0664	0.0783	0.0905	0.1029	0.1156
0	0.98560	0.0314	0.0423	0.0534	0.0648	0.0764	0.0882	0.1003	0.1127
10	1.01001	0.0306	0.0413	0.0521	0.0632	0.0745	0.0861	0.0979	0.1100
20	1.03442	0.0299	0.0403	0.0509	0.0617	0.0728	0.0841	0.0956	0.1074
30	1.05883	0.0292	0.0394	0.0497	0.0603	0.0711	0.0821	0.0934	0.1049
40	1.08324	0.0286	0.0385	0.0486	0.0589	0.0695	0.0803	0.0913	0.1029
50	1.10765	0.0279	0.0376	0.0475	0.0576	0.0680	0.0785	0.0893	0.1003
60	1.13206	0.0273	0.0368	0.0465	0.0564	0.0665	0.0768	0.0874	0.0981
70	1.15647	0.0267	0.0360	0.0455	0.0552	0.0651	0.0752	0.0855	0.0961
80	1.18088	0.0262	0.0353	0.0446	0.0541	0.0637	0.0736	0.0838	0.0941
90	1.20529	0.0257	0.0346	0.0437	0.0530	0.0624	0.0721	0.0821	0.0922
100	1.22970	0.0252	0.0339	0.0428	0.0519	0.0612	0.0707	0.0804	0.0904
110	1.25411	0.0247	0.0332	0.0420	0.0509	0.0600	0.0693	0.0789	0.0886
120	1.27852	0.0242	0.0326	0.0412	0.0499	0.0589	0.0680	0.0774	0.0869

PIPE INSTALLATION

PIPE SIZE CHANGE

Pipe size changes, to increase or decrease the size, can be done at three different locations in the piping network:

Pipe Size Change at a Tee	When the change in pipe size is done at a tee, this is accomplished by using either a reducing tee or a standard tee and reducing fittings. All reducers must be concentric bell reducers or concentric reducing couplings.
Pipe Size Change at an Elbow	When the change in pipe size is done at an elbow, this is accomplished by using either reducing elbows or a standard elbow with concentric bell reducers or concentric reducing couplings.
Pipe Size Change at a Coupling	When the change in pipe size accomplished at a coupling, only concentric bell reducers or concentric reducing couplings can be used.

NOTE: Reducing bushings, weld-o-let, and hole-cut fittings "ARE NOT" acceptable.

INSTALLATION

The piping system should be securely supported with due allowance for agent thrust forces, thermal expansion, and contraction, and should not be subject to mechanical, chemical, vibration, or other type of damage.
The maximum horizontal spacing for screwed, welded or grooved pipe are as indicated on the following table:

Pipe Size (in.)	Distance Between Supports (feet)	Rod Diameter (in.)
3/8	7	3/8
1/2	7	3/8
3/4	7	3/8
1	7	3/8
1 1/4	7	3/8
1 1/2	9	3/8
2	10	3/8
2 1/2	11	1/2
3	12	1/2
4	14	5/8
6	17	3/4

NOTE:
- Each pipe section shall be cleaned internally before installation with a nonflammable cleaner such as Perchlorethylene in accordance with NFPA 2001, latest edition.
- Teflon tape or joint compound shall be used on all threaded joints. All grooved coupling gaskets shall be lubricated per the manufacturer's specifications.
- "C" Clamps are not acceptable to support rod hangers.
- Rigid pipe supports are required to support the "live load" of the pipe system during discharge. Rigid bracing is required at each directional change, fitting, tee and nozzle. All drops to 180° nozzles require back bracing in the opposite direction of the discharge. Earthquake bracing shall be used where required by local code. (Refer to ANSI B31.1 Power Piping Code for additional information)
- For additional information on pressure rating of pipe and fittings, plus recommended pipe supports and hangers, refer to FSSA's Pipe Design Handbook, FSSA PDH-01.
- All system piping shall be installed in strict accordance to system plans. If piping changes are necessary, they must be recalculated on Fike's Flow Calculation program for container size and actual fill weight being supplied.

CONNECTION – CONTAINER TO PIPING NETWORK

The container discharge valve outlet is connected to the piping network using the following items:

Discharge Valve Size	Fittings Required	Comments
1" Discharge Valve	1" Victaulic Coupling (p/n 02-9964) 1" Adapter Nipple (p/n 70-2164) x 3" (76 mm) lg.	Supplied w/ Container (5, 10, 20, 35, 60 & 100 lb.)
	1" Coupling or Union (not shown)	Supplied by Others
3" Discharge Valve	3" Victaulic Coupling (p/n 02-1987)	Supplied w/ Container (150, 150i, 215, 375, 650 & 1000)
	3" Adapter Nipple (p/n 70-2163) NPT to Victaulic x 4" (114 mm) lg.	Standard Item – Supplied w/ Container (150, 150i, 215, 375, 650 & 1000)
	3" Adapter Nipple (p/n 70-2175) Victaulic to Victaulic x 4" (114 mm) lg. (not shown)	Optional Item
	3" Coupling or Union (not shown)	Supplied by Others

CYLINDER FLOOR LOADING CHART

Floor loading must be considered when selecting a container location.

The floor must be able to support the total weight of the Fike container(s) as they are moved into position. Consult raised floor manufacturer for floor loading limitation.

The following guidelines are recommended:

- Raised floor loading is a function of the manufacturer's load specification and the positioning of the container(s) on the raised floor grid.

NOTE: Fike cannot assume responsibility for determining the suitability of a particular raised floor system; the following does provide information to help determine installation requirements.

- When clean agent containers are located on a raised floor, floor integrity must be considered to determine if the type of tile and vertical floor support can handle the increased load. If necessary additional floor supports can be added.

Option:
To help distribute the container weight over a greater area, a ¼" steel plate can be placed under the container(s), sized to span multiple floor supports. If container spans multiple floor tiles, add additional floor supports (Minimum of 4 floor supports, 1 per corner, must be used). Excessive floor loading may require relocating the container(s) to a more suitable location.

For floor loading information refer to Table 1 or to Fike's Flow Calculation program for container size and actual fill weight being supplied.

TABLE 1 - FLOOR LOADING / AREA BY CONTAINER SIZE

Container Size	Total Container Weight (See Note 1)		Container Floor Area		Container Floor Loading		Container Floor Area w/ Plate (See Note 2)		Container Floor Loading w/ Plate (See Note 3)	
lb. (L)	lbs.	kg	ft2	m2	lbs/ft2	kg/m3	ft2	m2	lbs/ft2	kg/m3
1000 (423)	1580	717	3.14	0.29	**503**	**2472**	4.0	0.36	**401**	**2020**
650 (267)	1033	468	3.14	0.29	**329**	**1614**	4.0	0.36	**264**	**1328**
375 (153)	591	269	2.18	0.2	**271**	**1345**	4.0	0.36	**153**	**776**
215 (88)	362	164	2.18	0.2	**166**	**820**	4.0	0.36	**96**	**484**
150 (61)	268	122	2.18	0.2	**123**	**610**	4.0	0.36	**73**	**367**
100 (44)	185	84	0.63	0.06	**294**	**1400**	4.0	0.36	**52**	**262**
60 (27)	121	55	0.63	0.06	**192**	**917**	4.0	0.36	**36**	**181**
35 (15)	71	32	0.27	0.03	**263**	**1067**	4.0	0.36	**23**	**117**
20 (8.5)	43	20	0.27	0.03	**159**	**667**	4.0	0.36	**16**	**84**
10 (4)	25	12	0.10	0.009	**250**	**1333**	4.0	0.36	**12**	**62**
5 (2)	16	8	0.10	0.009	**160**	**889**	4.0	0.36	**10**	**51**

NOTES:

1) Total container weight is based on container tare weight + maximum fill weight.

2) Plate size = 1/4" x 2' x 2' plate (6.4mm x 0.6m x 0.6m)

3) Total container weight + 22.5 lbs. (10.2 kg) for plate used to calcuate container w/ plate floor loading.

ACCEPTABLE PIPING CHART

PIPING MATERIALS
Piping materials must conform to the requirements as outlined in NFPA 2001, latest edition. The thickness of the piping wall shall be calculated in accordance with ASME B31.1 Power Piping Code.

Caution: Cast iron pipe, steel pipe conforming to ASTM A120, or nonmetallic pipe shall not be used.

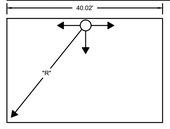
The following piping materials and configurations are acceptable:
Schedule 40 Threaded, Welded & Grooved Schedule 80
Threaded & Welded

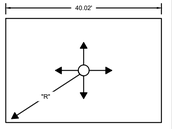
The following piping types and grades are acceptable for pipe confi gurations utilizing threaded, welded or grooved end connections:

Pipe Schedule	NPS Pipe Size	Wall Thickness	Grade / Type					
			A-106C	A-53B A-106B	A-63B	A-53A A-106A	A-53A	A-53F
			Seamless	Seamless	ERW	Seamless	ERW	Furnace
40	3/8	0.091	✔	✔	✔	✔	✔	✔
	1/2	0.109	✔	✔	✔	✔	✔	✔
	3/4	0.113	✔	✔	✔	✔	✔	✔
	1	0.133	✔	✔	✔	✔	✔	✔
	1 1/4	0.140	✔	✔	✔	✔	✔	✔
	1 1/2	0.145	✔	✔	✔	✔	✔	✔
	2	0.154	✔	✔	✔	✔	✔	✔
	2 1/2	0.203	✔	✔	✔	✔	✔	✔
	3	0.216	✔	✔	✔	✔	✔	✔
	4	0.237	✔	✔	✔	✔	✔	✔
	6	0.280	✔	✔	✔	✔	✔	✔

FIKE SF-1230 ENGINEERED NOZZLES

Nozzle Size - 1/2" - 2" (10 - 50 mm)		
Nozzle Type	Radius "R" Dimensions ft. (m)	Ceiling Height Range ft. (m)
180°	44.91 (13.69)	1.32 to 16.0
360°	28.41 (8.66)	1.32 to 16.0





Maximum Distance	180° Nozzle	360° Nozzle
Below Ceiling	1.0 (0.3 m)	1.0 (0.3 m)
Away from Sidewall	1.0 (0.3 m)	-

MOUNTING INSTRUCTIONS	USED FOR:
MOUNT PER MANUFACTURERS INSTRUCTIONS.	FIKE SF-1230 ENGINEERED NOZZLES

SYMBOL LEGEND

SYMBOL	DESCRIPTION
FSCP	*FIRE SUPPRESSION CONTROL PANEL*
P XXX	*PHOTOELECTRIC SMOKE DETECTOR (XXX = ADDRESS OR ZONE)*
A XXX	*AGENT ABORT STATION (XXX = ZONE OR ADDRESS)*
P XXX	*AGENT MANUAL RELEASE STATION (XXX = ZONE OR ADDRESS)*
B	*AGENT FIRST ALARM BELL*
H S#	*AGENT PRE-DISCHARGE HORN STROBE* — *S#=CIRCUIT #*
L S#	*AGENT DISCHARGE STROBE* — *S#=CIRCUIT #*
	CLEAN AGENT CONTROL HEAD MONITOR SWITCH
	AGENT DISCHARGE CONTROL HEAD
	AGENT DISCHARGE PRESSURE SWITCH
	AGENT CYLINDER LOW PRESSURE SWITCH
	AGENT 180° DISCHARGE NOZZLE
XXX	*CLEAN AGENT STORAGE CYLINDER (XXX = FILL WEIGHT)*

NOTE

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA34748

This item has been digitally signed and sealed by James M. Curtis, P.E. on the date adjacent to the seal.

JAMES M. CURTIS — No. 37912 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by James Curtis
Date: 2025.03.04 11:53:08 -05'00'

Flagship Fire Inc.
1500 15TH AVE. DR. E. , SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 7870080001206 / EC13010870

REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW

REVIEW

PROJECT	ADDRESS	DESCRIPTION
COLUMBIA COUNTY 911	263 NW LAKE CITY AVENUE LAKE CITY, FL 32055	FIRE SUPPRESSION SYSTEM PIPING FLOOR PLAN & TANK DETAILS

AHJ: LAKE CITY, FL

DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB# : 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: ----
SHEET: FS2.0	TOTAL QTY OF SHEETS IN SET: 7
REV: 0	DATE: 02/05/2025

ZACHARY ROGERS
2/3/2025

1010-25003 COLUMBIA COUNTY 911

Fike

Flow Calculation Report

06-873 Fike Flow Calculation Version 3.0.4.0

SF1230 Calculation Engine Version 1.00.0000

UL Ex4623 FM 3059379

Date Printed: 2/5/2025

Project Setup

Selected Agent Type:	SF1230
Selected Hardware Group:	Fike US
Ambient Room Temperature:	70 °F
Discharge Time:	10 s

Project Information

Description:	Columbia County 911
Designer:	ZMR
Account Number:	25003

Hazard Information

Description:	SERVER ROOM
Protecting Agent:	SF1230
Length:	26.00 ft
Width:	14.83 ft
Height:	9.00 ft
Added Volume:	0.00 ft^3
Removed Volume:	0.00 ft^3
Protected Volume:	3470.22 ft^3
Minimum Temperature:	70 °F
Maximum Temperature:	70 °F
Relative Humidity:	38.00 %
Altitude:	0 ft
Minimum Agent Concentration:	4.5 %
Agent Design Concentration:	4.5 %
Maximum Agent Concentration:	4.5 %
Agent Required:	142.0 lb

Total Agent Required

Agent Required for all Hazards:	142.0 lb

Cylinder Information

Description	Agent Qty	Pressure	Volume	Diameter	Height
70-363-X-X 150 lb Upright	142.0 lb	500 psi	2.1559 ft^3	1.6670 ft	2.0210 ft

Nozzle Information

Description	Requested Agent	Orifice	Thread	Dispersion Angle
80-122-150-X 1-1/2 in (40 mm)	142.0 lb	0.6875 in	NPT	180

Table Input Data

Start Id	End Id	Length	Elevation Change	Diameter	Schedule	Cylinder	90° Elbows	45° Elbows	Thru Branch	Side Branch	Unions	Equiv Length	Agent Quantity	Nozz Type	Nozz Orifice
1	2	2.0210 ft	2.0210 ft	3 in	Schedule 10T	1	0	0	0	0	0	28.8790 ft			
2	3	1.0000 ft	1.0000 ft	1-1/2 in	Schedule 40T	0	0	0	0	0	0				
3	101	10.3300 ft	5.0000 ft	1-1/2 in	Schedule 40T	0	4	0	0	0	0		142.0000 lb	180	0.6875 in

Table Results Data

Start Id	End Id	Pipe Type	Equivalent Length	Start Pressure	End Pressure	Agent Rate	Flow	Nozzle Agent	Nozzle Size	Orifice	Initial Time	Vapor	Liquid Discharge Time	End of Time	Liquid
1	2	3 SCH 40	30.0000 ft	231.0000 psi	231.0000 psi	16.3203 lb / s									
2	3	1 1/2-SCH 40	1.0000 ft	231.0000 psi	229.0000 psi	16.3203 lb / s									
3	101	1 1/2 SCH 40	28.4300 ft	225.0000 psi	205.0000 psi	16.3203 lb / s		142.0000 lb	0.6875 in		0.2411 s		8.5427 s	8.7572 s	

Table Results Messages

SF1230 Flow Calculation Engine Version 1.00.0000

Actual cylinder fill density is 65.8951lb/cu ft

NOTE: Liquid arrival time imbalance limit is 1.15 second difference

0 sec between longest and shortest time for nozzles to reach liquid flow

Flow rate in section 2 - 3 is 16.3203 lbs/sec. The minimum permitted rate is 10.22136 lbs/sec

Flow rate in section 3 - 101 is 16.3203 lbs/sec. The minimum permitted rate is 10.22136 lbs/sec

Ratio of orifice to pipe area in section 3 - 101 is 18.8344%

The minimum orifice to pipe area ratio is 13%

The maximum orifice to pipe area ratio is 78%

Maximum pressure difference between nozzles is 10 psi. Limit is 125 psi

Nozzle codes are fixed. Convergance of the iteration of nozzle flow rate and pressure is 0.05

System calculated within limits of Fikes UL listing and FM approval

Calculation performed on 2/5/2025 9:48 AM

Discharge time is 8.7572 seconds, which is within the 5.96 to 10 second limits.

Bill of Materials

Pipes

Quantity	Description
1	1-1/2 in x 0.5000 ft (Schedule 40T)
1	1-1/2 in x 0.8300 ft (Schedule 40T)
1	1-1/2 in x 1.0000 ft (Schedule 40T)
2	1-1/2 in x 5.5000 ft (Schedule 40T)

Nozzles

Quantity	Description
1	1-1/2 in (40 mm) (Part Number '80-122-150-6875')

Cylinders

Quantity	Description
1	150 lb Upright (142.0000 lb) (Part Number '70-363-X-X')

Elbows

Quantity	Description
4	1-1/2 in x 1-1/2 in

System Acceptance Report

Nozzle Performance

Nozzle Number	Orifice Diameter	Agent Requested	Agent Predicted	Nozzle Pressure
101	0.6875 in	142.0000 lb	142.0000 lb	219.0000 psi

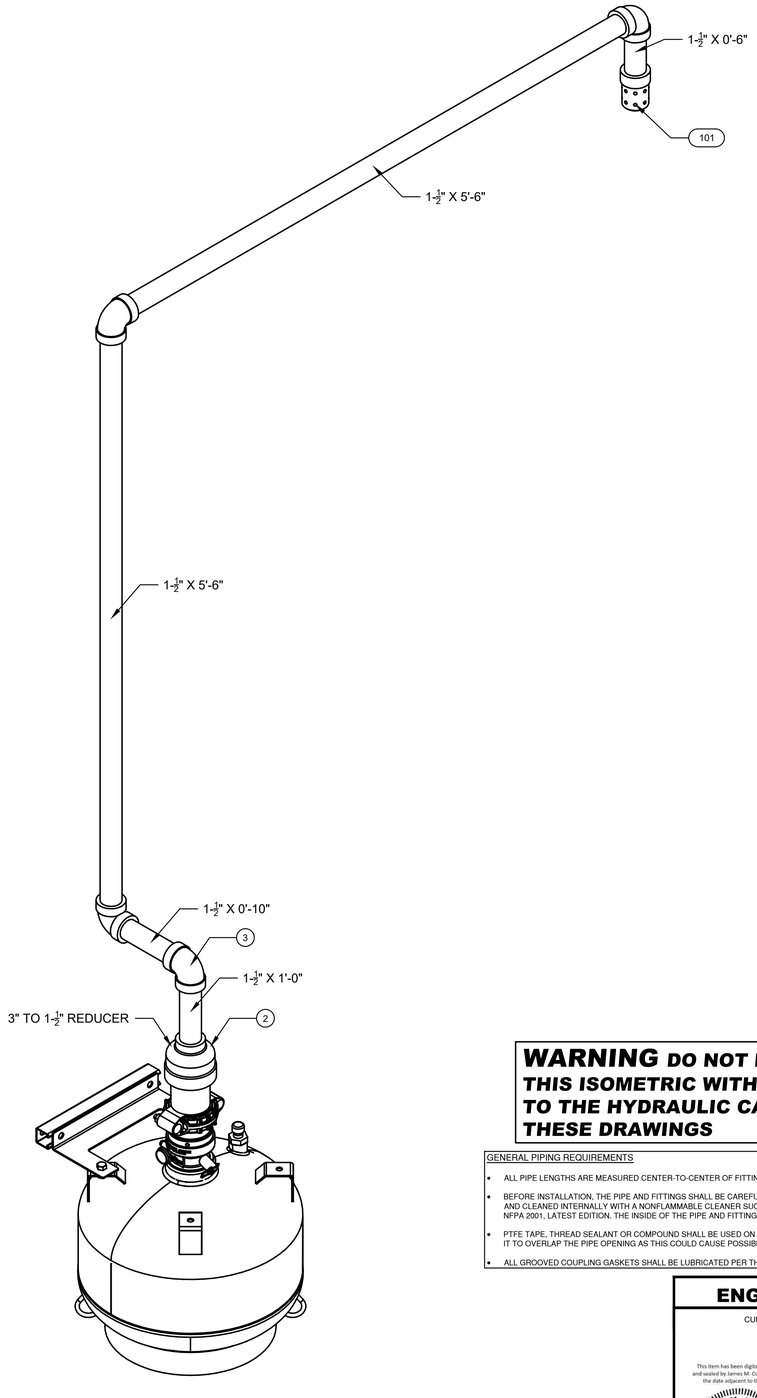
Agent Concentration Per Hazard

Hazard	Minimum Concentration	Design Concentration	Min Predicted Concentration	Max Predicted Concentration	Discharge Time
SERVER ROOM	4.5 %	4.5 %	4.5184 %	4.5184 %	8.7572 s

Equivalent Leakage Area

Hazard	Positive (Flow Out) ELA	Negative (Flow In) ELA	Positive (Flow Out) Pressure	Negative (Flow In) Pressure
SERVER ROOM	0.0396 in^2	62.0760 in^2	194608.25 psf	1792.54 psf

SYSTEM ISOMETRIC VIEW - N.T.S. - FOR REFERNCE ONLY REFER TO CALCULATION



WARNING ***DO NOT FABRICATE FROM THIS ISOMETRIC WITHOUT REFERRING TO THE HYDRAULIC CALCULATIONS ON THESE DRAWINGS***

GENERAL PIPING REQUIREMENTS

- ALL PIPE LENGTHS ARE MEASURED CENTER-TO-CENTER OF FITTINGS.
- BEFORE INSTALLATION, THE PIPE AND FITTINGS SHALL BE CAREFULLY REAMED, BLOWN CLEAR OF CHIPS AND SCALE, AND CLEANED INTERNALLY WITH A NONFLAMMABLE CLEANER SUCH AS PERCHLOROETHYLENE IN ACCORDANCE WITH NFPA 2001, LATEST EDITION. THE INSIDE OF THE PIPE AND FITTINGS MUST BE FREE OF OIL AND DIRT.
- PTFE TAPE, THREAD SEALANT OR COMPOUND SHALL BE USED ON MALE THREADS ONLY. IF USING TAPE, DO NOT ALLOW IT TO OVERLAP THE PIPE OPENING AS THIS COULD CAUSE POSSIBLE BLOCKAGE OF THE AGENT
- ALL GROOVED COUPLING GASKETS SHALL BE LUBRICATED PER THE MANUFACTURER'S SPECIFICATIONS.

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA34748

This item has been digitally signed and sealed by James M. Curtis, P.E. on the date adjacent to the seal.

JAMES M. CURTIS LICENSE No. 37912 STATE OF FLORIDA PROFESSIONAL ENGINEER

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by James Curtis
Date: 2025.03.04 11:52:51 -05'00'

Flagship Fire Inc.
1500 15TH AVE. DR. E. , SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 7810080012O6 / EC13010870

REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW

REVIEW

PROJECT	ADDRESS	DESCRIPTION
COLUMBIA COUNTY 911	263 NW LAKE CITY AVENUE LAKE CITY, FL 32055	FIRE SUPPRESSION SYSTEM SERVER ROOM SYSTEM ISO. DRAWING & CALCS.

AHJ: LAKE CITY, FL	
DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB# : 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: ----
SHEET: FS3.0	TOTAL QTY OF SHEETS IN SET: OF 7
REV: 0	DATE: 02/05/2025

ZACHARYROGERS

3/3/2025

Fike®

Flow Calculation Report

06-873 Fike Flow Calculation Version 3.0.4.0

SF1230 Calculation Engine Version 1.00.0000

UL Ex4623 FM 3059379

Date Printed: 2/5/2025

Project Setup

Selected Agent Type:	SF1230
Selected Hardware Group:	Fike US
Ambient Room Temperature:	70 °F
Discharge Time:	10 s

Project Information

Description:	Columbia County 911
Designer:	ZMR
Account Number:	25003

Hazard Information

Description:	ELECTRICAL ROOM
Protecting Agent:	SF1230
Length:	16.43 ft
Width:	6.00 ft
Height:	9.83 ft
Added Volume:	0.00 ft^3
Removed Volume:	0.00 ft^3
Protected Volume:	969.04 ft^3
Minimum Temperature:	70 °F
Maximum Temperature:	70 °F
Relative Humidity:	38.00 %
Altitude:	0 ft
Minimum Agent Concentration:	4.5 %
Agent Design Concentration:	4.5 %
Maximum Agent Concentration:	4.6 %
Agent Required:	40.0 lb

Total Agent Required

Agent Required for all Hazards:	40.0 lb

Cylinder Information

Description	Agent Qty	Pressure	Volume	Diameter	Height
70-361-X-X Upright	60 lb 40.0 lb	500 psi	0.9740 ft^3	0.8960 ft	2.3440 ft

Nozzle Information

Description	Requested Agent	Orifice	Thread	Dispersion Angle
80-122-075-X 3/4 in (20 mm)	40.0 lb	0.3480 in	NPT	180

Table Input Data

Start	End	Length	Elevation Change	Diameter	Schedule	Cylinder	90° Elbows	45° Elbows	Thru Branch	Side Branch	Union	Equiv. Length	Agent Quantity	Nozz Type	Nozz Orifice
1	2	2.3190 ft	2.3190 ft	1 in	Schedule 40T	1	0	0	0	0	0	3.6860 ft			
2	3	0.5000 ft	0.5000 ft	3/4 in	Schedule 40T	0	0	0	0	0	0				
3	101	10.1800 ft	6.7500 ft	3/4 in	Schedule 40T	0	4	0	0	0	0		40.0000 lb	180	0.3480 in

Table Results Data

Start	End	Pipe Type	Equivalent Length	Start Pressure	End Pressure	Agent Rate	Flow	Nozzle Agent	Nozzle Size	Orifice	Initial Time	Vapor	Liquid Discharge Time	End of Liquid Time	Liquid
1	2	1 - SCH 40	6.0500 ft	353.0000 psi	347.0000 psi	2.8122 lb / s									
2	3	3/4 - SCH 40	0.5000 ft	347.0000 psi	345.0000 psi	2.8431 lb / s									
3	101	3/4 - SCH 40	18.4300 ft	345.0000 psi	329.0000 psi	2.8122 lb / s	40.0000 lb	0.3480 in	0.2791 s		7.7149 s		7.8911 s		

Table Results Messages

SF1230 Flow Calculation Engine Version 1.00.0000

Actual cylinder fill density is 41.0671lbs/cu ft

NOTE: Liquid arrival time imbalance limit is 1.25 second difference

0 sec between longest and shortest time for nozzles to reach liquid flow

Flow rate in section 2 - 3 is 4.8431lbs/sec. The minimum permitted rate is 2.850439 lbs/sec

Flow rate in section 3 - 101 is 4.8122lbs/sec. The minimum permitted rate is 2.850439 lbs/sec

Ratio of orifice to pipe area in section 3 - 101 is 17.8362%

The minimum orifice to pipe area ratio is 15%

The maximum orifice to pipe area ratio is 78%

Maximum pressure difference between nozzles is 0 psi. Limit is 10.7 psi

Nozzle codes are fixed. Convergance of the iteration of nozzle flow rate and pressure is 0.25

System calculated within limits of Fikes UL listing and FM approval

Calculation performed on 2/5/2025 9:56 AM

Discharge time is 7.894079 seconds, which is within the 5.93 to 10 second limits.

Bill of Materials

Pipes

Quantity	Description
3	3/4 in x 0.5000 ft (Schedule 40T)
1	3/4 in x 2.4300 ft (Schedule 40T)
1	3/4 in x 6.7500 ft (Schedule 40T)

Nozzles

Quantity	Description
1	3/4 in (20 mm) (Part Number '80-122-075-3480')

Cylinders

Quantity	Description
1	60 lb Upright (40.0000 lb) (Part Number '70-361-X-X')

Elbows

Quantity	Description
4	3/4 in x 3/4 in

System Acceptance Report

Nozzle Performance

Nozzle Number	Orifice Diameter	Agent Requested	Agent Predicted	Nozzle Pressure
101	0.3480 in	40.0000 lb	40.0000 lb	329.0000 psi

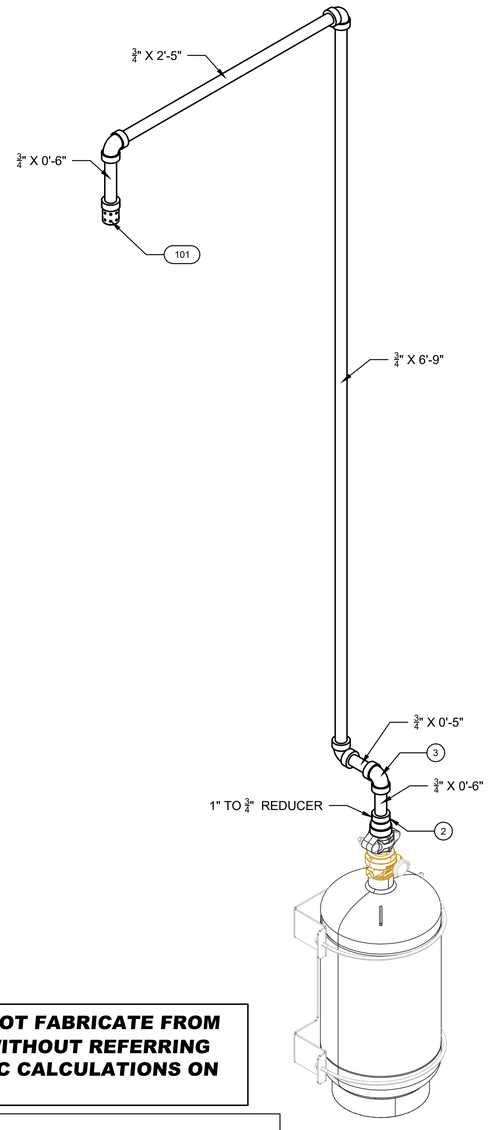
Agent Concentration Per Hazard

Hazard	Minimum Concentration	Design Concentration	Min Predicted Concentration	Max Predicted Concentration	Discharge Time
ELECTRICAL ROOM	4.5 %	4.5 %	4.5562 %	4.5562 %	7.8941 s

Equivalent Leakage Area

Hazard	Positive (Flow Out) ELA	Negative (Flow In) ELA	Positive (Flow Out) Pressure	Negative (Flow In) Pressure
ELECTRICAL ROOM	0.0186 in^2	19.3903 in^2	193123.46 psf	1777.22 psf

SYSTEM ISOMETRIC VIEW - N.T.S. - FOR REFERNCE ONLY REFER TO CALCULATION



WARNING ***DO NOT FABRICATE FROM THIS ISOMETRIC WITHOUT REFERRING TO THE HYDRAULIC CALCULATIONS ON THESE DRAWINGS***

GENERAL PIPING REQUIREMENTS

- ALL PIPE LENGTHS ARE MEASURED CENTER-TO-CENTER OF FITTINGS.
- BEFORE INSTALLATION, THE PIPE AND FITTINGS SHALL BE CAREFULLY REAMED, BLOWN CLEAR OF CHIPS AND SCALE, AND CLEANED INTERNALLY WITH A NONFLAMMABLE CLEANER SUCH AS PERCHLOROETHYLENE IN ACCORDANCE WITH NFPA 2001, LATEST EDITION. THE INSIDE OF THE PIPE AND FITTINGS MUST BE FREE OF OIL AND DIRT.
- PTFE TAPE, THREAD SEALANT OR COMPOUND SHALL BE USED ON MALE THREADS ONLY. IF USING TAPE, DO NOT ALLOW IT TO OVERLAP THE PIPE OPENING AS THIS COULD CAUSE POSSIBLE BLOCKAGE OF THE AGENT
- ALL GROOVED COUPLING GASKETS SHALL BE LUBRICATED PER THE MANUFACTURER'S SPECIFICATIONS.

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA34748

This item has been digitally signed and sealed by James M. Curtis, P.E. on the date adjacent to the seal.

JAMES M. CURTIS LICENSE No. 37912 STATE OF FLORIDA PROFESSIONAL ENGINEER

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by James Curtis
Date: 2025.03.04 11:51:58 -05'00'

Flagship Fire Inc.
1500 15TH AVE. DR. E. , SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 7870800012O6 / EC13010870

NO.	REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW

REVIEW

PROJECT: COLUMBIA COUNTY 911

ADDRESS: 263 NW LAKE CITY AVENUE LAKE CITY, FL 32055

DESCRIPTION: FIRE SUPPRESSION SYSTEM
ELECTRIC ROOM SYSTEM ISO, DRAWING & CALCS.

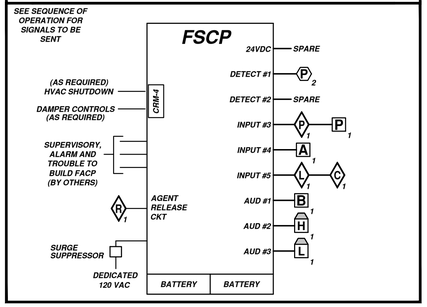
AHJ: LAKE CITY, FL

DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB# : 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: *****
SHEET: FS3.1	OF TOTAL QTY OF SHEETS IN SET: 7
REV: 0	DATE: 02/05/2025

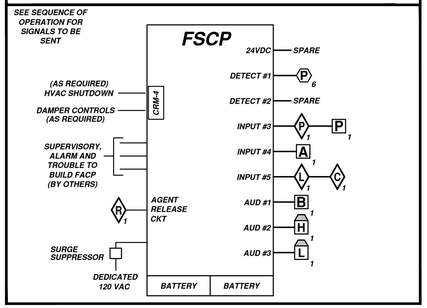
ZACHARYROGERS

2/3/2025

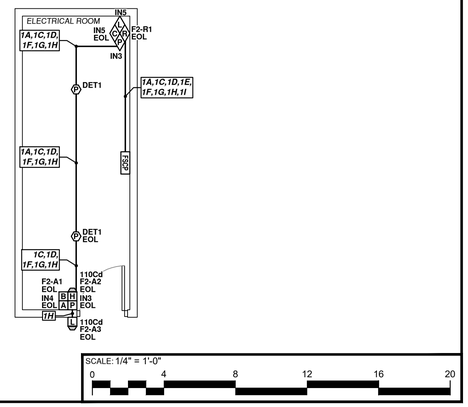
RISER DIAGRAM - ELECTRICAL ROOM



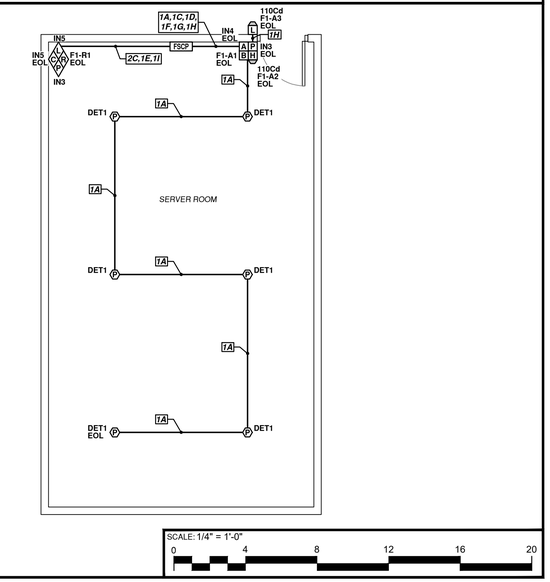
RISER DIAGRAM - SERVER ROOM



CLEAN AGENT DETECTION & CONTROLS LAYOUT - ELECTRICAL ROOM



CLEAN AGENT DETECTION & CONTROLS LAYOUT - SERVER ROOM



BATTERY CALCULATIONS - SERVER ROOM

FSCP - F1		CONTROL PANEL BATTERY CALCULATION				
QTY	TYPE	PART NUMBER	STANDBY	TOTAL STANDBY	ALARM	TOTAL ALARM
1	PANEL	10-063-1-R-1	0.1350 Amps	0.1350 Amps	0.1350 Amps	0.1350 Amps
1	PNLRLY	10-2204	0.0110 Amps	0.0110 Amps	0.0390 Amps	0.0390 Amps
6	PHOTO	63-1308	0.0000 Amps	0.0003 Amps	0.0002 Amps	0.0009 Amps
1	WST	20-123-01	0.0000 Amps	0.0000 Amps	0.1360 Amps	0.1360 Amps
1	WHS	20-123-48	0.0000 Amps	0.0000 Amps	0.1870 Amps	0.1870 Amps
1	BELL	20-123-116	0.0000 Amps	0.0000 Amps	0.1000 Amps	0.1000 Amps
1	IRM	70-279	0.0030 Amps	0.0030 Amps	0.0370 Amps	0.0370 Amps
			TOTAL	0.1493 Amps		0.6349 Amps

SEE VOLTAGE DROP CALCULATIONS FOR DETAILS ON THE NOTIFICATION APPLIANCE CIRCUITS. PROVIDE 24 HOURS OF BATTERY BACKUP WITH 5MIN (.083 HRS) OF ALARM.

24 Hrs	HOURS	0.083 Hrs
3.58 Ah	AMP HOUR	0.05 Ah
1.25	DERATING	1.25
4.48 Ah	TOTAL	0.07 Ah
TOTAL REQUIRED		4.544 Ah
SEE EQUIPMENT LIST FOR SIZE		

BATTERY CALCULATIONS - ELECTRICAL ROOM

FSCP - F2		CONTROL PANEL BATTERY CALCULATION				
QTY	TYPE	PART NUMBER	STANDBY	TOTAL STANDBY	ALARM	TOTAL ALARM
1	PANEL	10-063-1-R-1	0.1350 Amps	0.1350 Amps	0.1350 Amps	0.1350 Amps
1	PNLRLY	10-2204	0.0110 Amps	0.0110 Amps	0.0390 Amps	0.0390 Amps
2	PHOTO	63-1308	0.0000 Amps	0.0001 Amps	0.0002 Amps	0.0003 Amps
1	WST	20-123-01	0.0000 Amps	0.0000 Amps	0.1360 Amps	0.1360 Amps
1	WHS	20-123-48	0.0000 Amps	0.0000 Amps	0.1870 Amps	0.1870 Amps
1	BELL	20-123-116	0.0000 Amps	0.0000 Amps	0.1000 Amps	0.1000 Amps
1	IRM	70-279	0.0030 Amps	0.0030 Amps	0.0370 Amps	0.0370 Amps
			TOTAL	0.1491 Amps		0.6343 Amps

SEE VOLTAGE DROP CALCULATIONS FOR DETAILS ON THE NOTIFICATION APPLIANCE CIRCUITS. PROVIDE 24 HOURS OF BATTERY BACKUP WITH 5MIN (.083 HRS) OF ALARM.

24 Hrs	HOURS	0.083 Hrs
3.58 Ah	AMP HOUR	0.05 Ah
1.25	DERATING	1.25
4.47 Ah	TOTAL	0.07 Ah
TOTAL REQUIRED		4.539 Ah
SEE EQUIPMENT LIST FOR SIZE		

VOLTAGE DROP CALCULATIONS

NOTIFICATION APPLIANCE CIRCUIT SCHEDULE

CIRCUIT	TYPE	CANDELA	PART NUMBER	ALARM	QTY	TOTAL
F1-A1	BELL		20-123-116	0.100 Amps	1	0.100 Amps
F1-A2	WHS	110Cd	20-123-48	0.187 Amps	1	0.187 Amps
F1-A3	WST	110Cd	20-123-01	0.136 Amps	1	0.136 Amps
F1-R1	IRM		70-279	0.037 Amps	1	0.037 Amps
F2-A1	BELL		20-123-116	0.100 Amps	1	0.100 Amps
F2-A2	WHS	110Cd	20-123-48	0.187 Amps	1	0.187 Amps
F2-A3	WST	110Cd	20-123-01	0.136 Amps	1	0.136 Amps
F2-R1	IRM		70-279	0.037 Amps	1	0.037 Amps

VOLTAGE DROP CALCULATION

POWER SUPPLY	CIRCUIT	TOTAL AMPS	FOOTAGE	OHMS PER 1K	TOTAL OHMS	VOLTAGE DROP
F1	F1-A1	0.100 Amps	500 Ft.	3.19	1.60 Ohms	0.16 Vdc
F1	F1-A2	0.187 Amps	500 Ft.	3.19	1.60 Ohms	0.30 Vdc
F1	F1-A3	0.136 Amps	500 Ft.	3.19	1.60 Ohms	0.22 Vdc
F1	F1-R1	0.037 Amps	500 Ft.	3.19	1.60 Ohms	0.06 Vdc
F2	F2-A1	0.100 Amps	500 Ft.	3.19	1.60 Ohms	0.16 Vdc
F2	F2-A2	0.187 Amps	500 Ft.	3.19	1.60 Ohms	0.30 Vdc
F2	F2-A3	0.136 Amps	500 Ft.	3.19	1.60 Ohms	0.22 Vdc
F2	F2-R1	0.037 Amps	500 Ft.	3.19	1.60 Ohms	0.06 Vdc

20.4 VDC - VD = END VOLTAGE

N1-N1
- CIRCUIT NUMBER
- PANEL NUMBER

WIRE CHART

TAG #	QTY.	GAUGE	TYPE	DESCRIPTION
A	2	14 AWG	THHN	DETECT #1 DETECTOR CIRCUIT
B	2	14 AWG	THHN	DETECT #2 DETECTOR CIRCUIT (SPARE)
C	2	14 AWG	THHN	INPUT #3 MANUAL RELEASE
D	2	14 AWG	THHN	INPUT #4 ABORT
E	2	14 AWG	THHN	INPUT #5 SUPERVISORY
F	2	14 AWG	THHN	AUD #1 ALARM BELL
G	2	14 AWG	THHN	AUD #2 PRE-DISCHARGE HORN/STROBE
H	2	14 AWG	THHN	AUD #3 DISCHARGE STROBE
I	2	14 AWG	THHN	R1-1 AGENT RELEASE
EXAMPLE:	2	14 AWG	THHN	24V DC AUX. POWER

CONDUIT — 1A,2B,1D — WIRE TYPE. (SEE CHART) / CIRCUIT QUANTITY

SYMBOL LEGEND

SYMBOL	DESCRIPTION
FSCP	FIRE SUPPRESSION CONTROL PANEL
P XXX	PHOTOELECTRIC SMOKE DETECTOR (XXX = ADDRESS OR ZONE)
A XXX	AGENT ABORT STATION (XXX = ZONE OR ADDRESS)
P XXX	AGENT MANUAL RELEASE STATION (XXX = ZONE OR ADDRESS)
B	AGENT FIRST ALARM BELL
H S#	AGENT PRE-DISCHARGE HORN/STROBE — S#=CIRCUIT #
L S#	AGENT DISCHARGE STROBE — S#=CIRCUIT #
	CLEAN AGENT CONTROL HEAD MONITOR SWITCH
	AGENT DISCHARGE CONTROL HEAD
	AGENT DISCHARGE PRESSURE SWITCH
	AGENT CYLINDER LOW PRESSURE SWITCH
	AGENT 180° DISCHARGE NOZZLE
XXX NOTE #1	CLEAN AGENT STORAGE CYLINDER (XXX = FILL WEIGHT)

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA34748

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JAMES M. CURTIS LICENSE No. 37912 STATE OF FLORIDA PROFESSIONAL ENGINEER

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Digitally signed by James Curtis
Date: 2025.03.04 11:51:42 -05'00'

Flagship Fire Inc.
1500 15TH AVE. DR. E. , SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 7870080012O6 / EC13010870

REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW

REVIEW

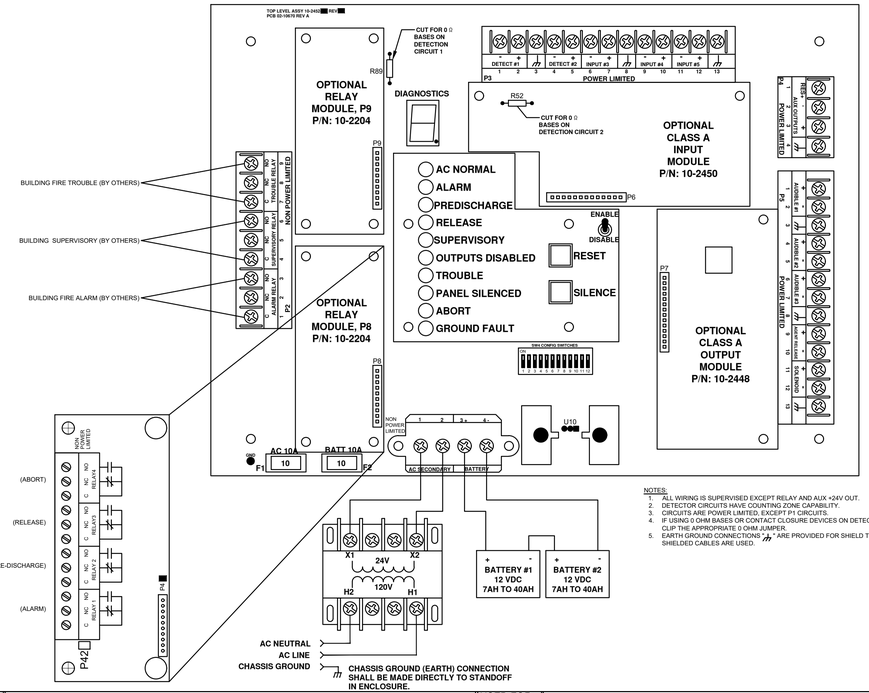
PROJECT	ADDRESS	DESCRIPTION
COLUMBIA COUNTY 911	263 NW LAKE CITY AVENUE LAKE CITY, FL 32055	FIRE SUPPRESSION SYSTEM DETECTION & CONTROLS FLOOR PLAN

AHJ: LAKE CITY, FL

DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB# : 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: ----
SHEET: FS4.0	TOTAL QTY OF SHEETS IN SET: OF 7
REV: 0	DATE: 02/05/2025

ZACHARYROGERS 3/3/2025

PANEL TERMINAL DETAIL



NOTES:
1. ALL WIRING IS SUPERVISED EXCEPT RELAY AND AUX +24V OUT.
2. DETECTOR CIRCUITS HAVE COUNTING ZONE CAPABILITY.
3. CIRCUITS ARE POWER LIMITED, EXCEPT P1 CIRCUITS.
4. IF USING 0 OHM BASES OR CONTACT CLOSURE DEVICES ON DETECT #1 OR #2, CLIP THE APPROPRIATE 0 OHM JUMPER.
5. EARTH GROUND CONNECTIONS "⏚" ARE PROVIDED FOR SHIELD TERMINATIONS IF SHIELDED CABLES ARE USED.

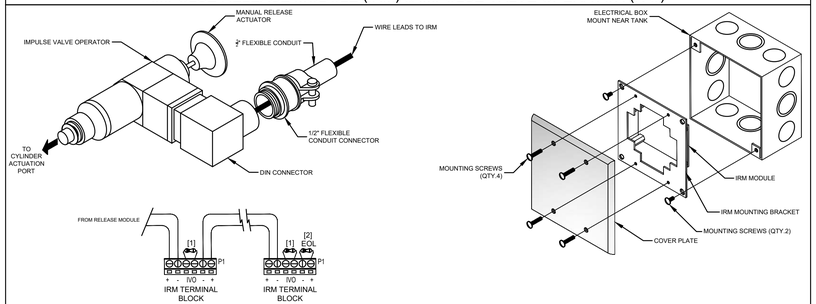
MOUNTING INSTRUCTIONS

SURFACE OR RECESSED MOUNT PER MANUAL

USED FOR:

FIKE:
P/N : 10-063-1-R-1

IMPULSE RELEASE MODULE (IRM) & IMPULSE VALVE OPERATOR (IVO)



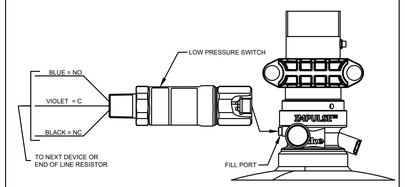
MOUNTING INSTRUCTIONS

LARGE 4-11/16 3" DEEP JUNCTION BOX WITH FIKE SUPPLIED ADAPTER. ADAPTER COMES WITH KIT

USED FOR:

FIKE:
P/N# 70-279

LOW PRESSURE SWITCH



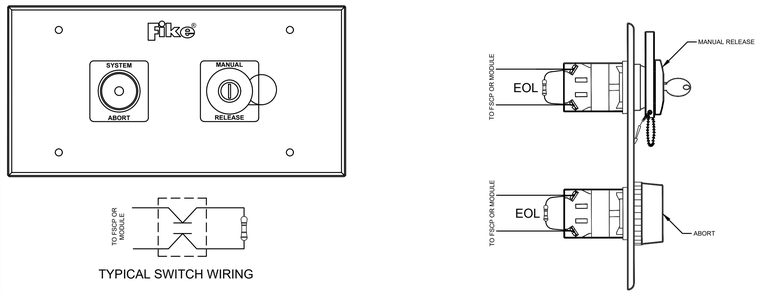
MOUNTING INSTRUCTIONS

MOUNT ON IMPULSE VALVE PER INSTRUCTIONS

USED FOR:

FIKE:
02-15801

DOUBLE COMBINATION CONTROLS - MANUAL RELEASE / SYSTEM ABORT



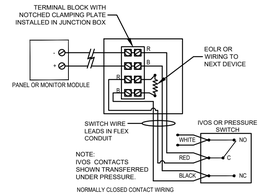
MOUNTING INSTRUCTIONS

STANDARD 4 GANG MASONRY ELECTRICAL BOX MEASURING 7-3/8" WIDE X 3-3/4" HIGH X 2-3/8" DEEP.

USED FOR:

FIKE
P/N# 10-2975

IMPULSE VALVE OPERATOR SUPERVISOR (IVOS)



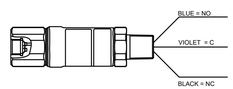
MOUNTING INSTRUCTIONS

0.25"ID SST FLEXIBLE CONDUIT 34.75" LG. WITH 1/2" KNOCKOUT CONNECTOR

USED FOR:

FIKE
P/N 02-14263

DISCHARGE PRESSURE SWITCH



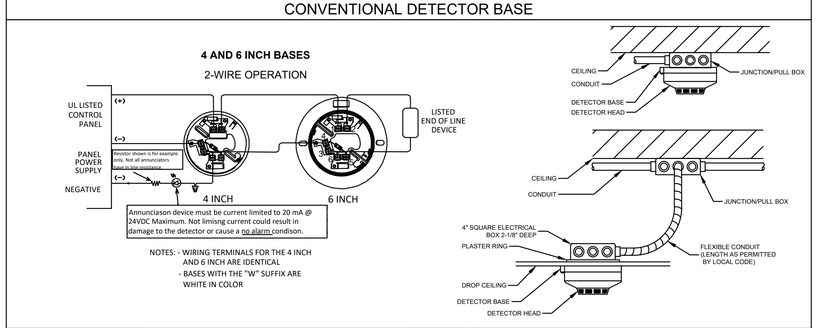
MOUNTING INSTRUCTIONS

MOUNT ON DISCHARGE PIPING PER INSTRUCTIONS

USED FOR:

FIKE:
02-12534

CONVENTIONAL DETECTOR BASE



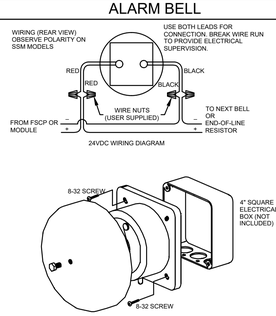
MOUNTING INSTRUCTIONS

4" SQUARE ELECTRICAL BOX, 2 1/8" DEEP
3" ROUND PLASTER RING DEVICE COVER, 1/2" RAISED

USED FOR:

FIKE MODEL:
67-1034
67-1036

ALARM BELL



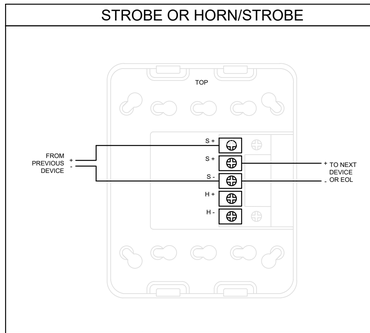
MOUNTING INSTRUCTIONS

MOUNT ON 4" SQUARE ELECTRICAL BOX.

USED FOR:

GENTEX MODELS:
GB6-24
GB10-24

STROBE OR HORN/STROBE



MOUNTING INSTRUCTIONS

DESIGNED FOR MOUNTING TO MOST SINGLE GANG BOXES, 4" SQUARE OUTLET BOXES, 2-GANG MASONRY BOXES OR NON-METALLIC 2-GANG SWITCH BOXES.

USED FOR:

GENTEX MODELS:
GEC24, GES24, GEH24 GEC3-24 & GES3-24 SERIES

INSTALLATION NOTE:

THE INFORMATION SHOWN ON THIS DRAWING IS FOR REFERENCE PURPOSES ONLY. IT'S INTENT IS TO PROVIDE THE SYSTEM INSTALLER WITH THE NECESSARY INFORMATION AS TO HOW TO WIRE FIELD DEVICES. ACTUAL CONDUIT ROUTING, CIRCUIT DIVISION, & FIELD DEVICE LOCATIONS SHALL BE DETERMINED BY THE SYSTEM INSTALLER IN THE FIELD. REFER TO ALL INSTALLATION DOCUMENTATION PROVIDED WITH DEVICE FOR PROPER INSTALLATION. REFER TO RISER DIAGRAM FOR DEVICE QUANTITIES.

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
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Date: 2025.03.04 11:51:25 -05'00'

Flagship Fire Inc.
1500 15TH AVE. DR. E. , SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 1870806001206 / EC13010870

REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW

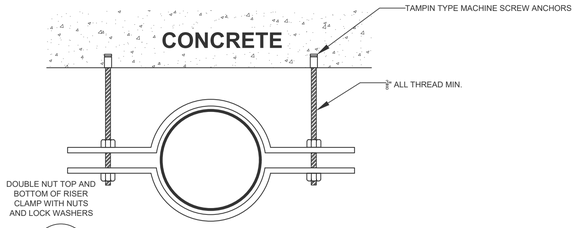
REVIEW

PROJECT	ADDRESS	DESCRIPTION
COLUMBIA COUNTY 911	263 NW LAKE CITY AVENUE LAKE CITY, FL 32055	FIRE SUPPRESSION SYSTEM DEVICE WIRING DETAILS

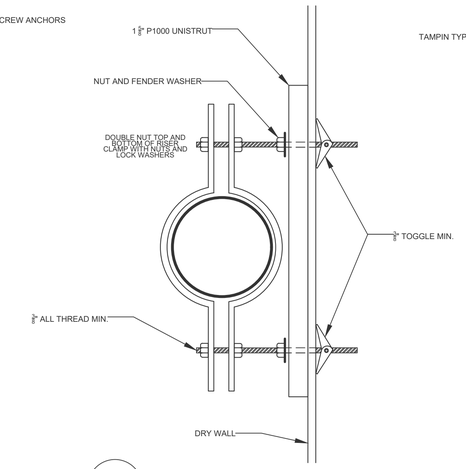
AHJ: LAKE CITY, FL	
DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB# : 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: ----
SHEET: FS5.0	TOTAL QTY OF SHEETS IN SET: OF 7
REV: 0	DATE: 02/05/2025

ZACHARY ROGERS

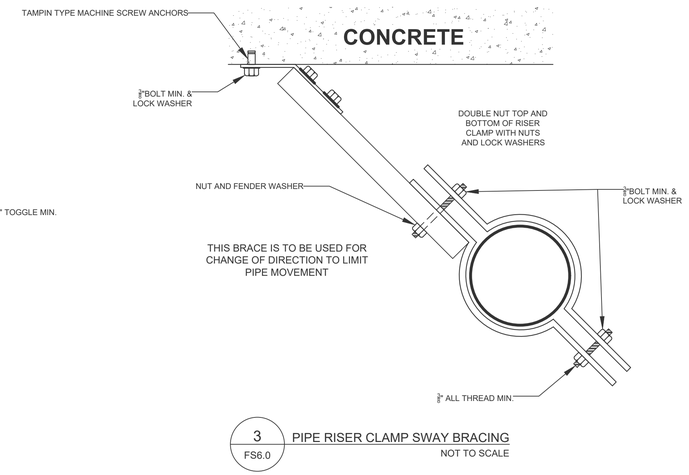
2/3/2021



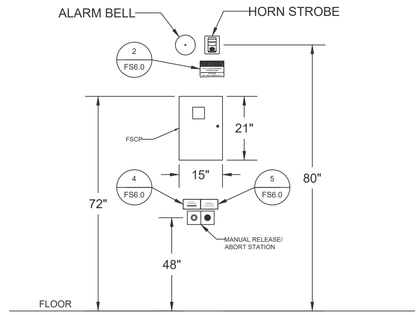
1 FS6.0 PIPE RISER CLAMP CONCRETE CEILING MOUNT
NOT TO SCALE



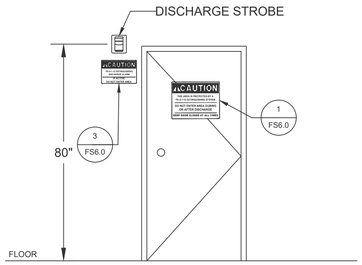
2 FS6.0 PIPE RISER CLAMP WALL MOUNT
NOT TO SCALE



3 FS6.0 PIPE RISER CLAMP SWAY BRACING
NOT TO SCALE



FIRE SUPPRESSION CONTROL PANEL & DEVICE MOUNTING ELEVATION
NOT TO SCALE

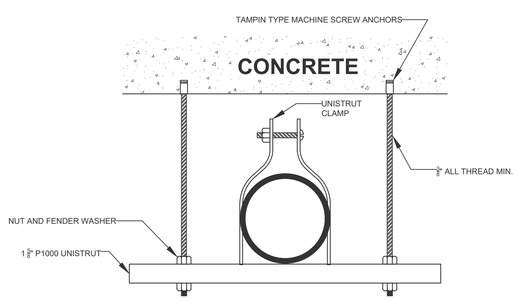


FIRE SUPPRESSION ANNUNCIATION DEVICE MOUNTING ELEVATION
NOT TO SCALE

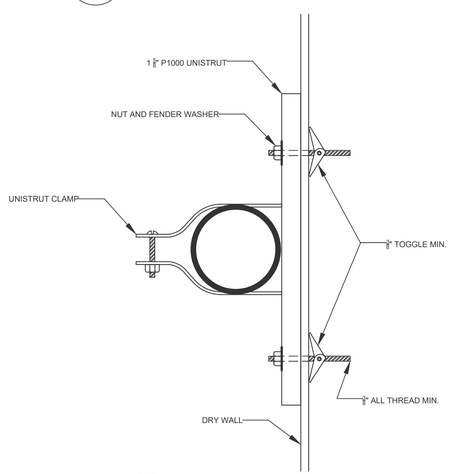
4 FS6.0 SPLIT RING CLAMP CEILING MOUNT
NOT TO SCALE

5 FS6.0 SPLIT RING CLAMP WALL MOUNT
NOT TO SCALE

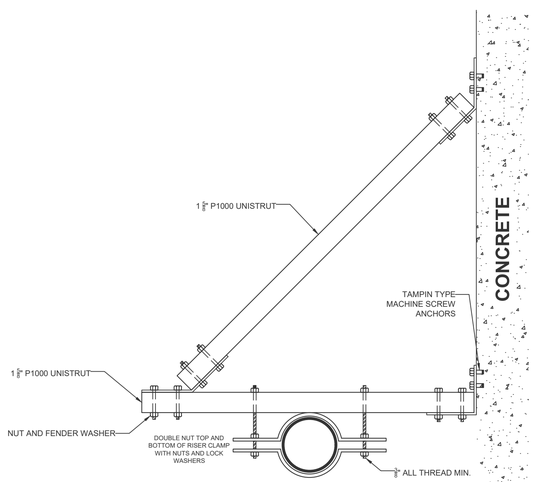
6 FS6.0 SPLIT RING SWAY BRACING
NOT TO SCALE



8 FS6.0 UNISTRUT CLAMP TRAPEZE
NOT TO SCALE



7 FS6.0 UNISTRUT CLAMP WALL MOUNT
NOT TO SCALE



9 FS6.0 PIPE RISER CLAMP WALL BRACKET MOUNT
NOT TO SCALE

CAUTION
THIS AREA IS PROTECTED BY A FK-5-1-12 EXTINGUISHING SYSTEM
DO NOT ENTER AREA DURING OR AFTER DISCHARGE
KEEP DOOR CLOSED AT ALL TIMES

1 FS6.0 WARNING SIGN
NOT TO SCALE

FK-5-1-12 EXTINGUISHING SYSTEM ABORT PUSH AND HOLD
Pike®

4 FS6.0 SYSTEM ABORT SIGN
NOT TO SCALE

CAUTION
FK-5-1-12 EXTINGUISHING SYSTEM ALARM
IF ACTIVE EXIT AREA IMMEDIATELY

2 FS6.0 LEAVE IMMEDIATELY SIGN
NOT TO SCALE

FK-5-1-12 EXTINGUISHING SYSTEM RELEASE

5 FS6.0 SYSTEM RELEASE SIGN
NOT TO SCALE

CAUTION
FK-5-1-12 EXTINGUISHING DISCHARGE ALARM
IF ACTIVE DO NOT ENTER AREA

3 FS6.0 DO NOT ENTER SIGN
NOT TO SCALE

ENGINEER OF RECORD

CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA34748

This item has been digitally signed and sealed by James M. Curtis, P.E. on the date adjacent to the seal.

JAMES M. CURTIS LICENSE No. 37912 STATE OF FLORIDA PROFESSIONAL ENGINEER

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by James Curtis
Date: 2025.03.04 11:50:23 -05'00'

Flagship Fire Inc.
1500 15TH AVE. DR. E. , SUITE 106
PALMETTO, FL 34221
PHONE: (941) 723-7230 / FAX: (941) 723-0181
VISIT OUR WEBSITE AT WWW.FLAGSHIPFIRE.COM
CONTRACTORS LICENSE NO. 7810080012O6 / EC13010870

REV.	DATE:	BY:	DESCRIPTION

NORTH ARROW

REVIEW

PROJECT	ADDRESS	DESCRIPTION
COLUMBIA COUNTY 911	263 NW LAKE CITY AVENUE LAKE CITY, FL 32055	FIRE SUPPRESSION SYSTEM HANGER & MOUNTING DETAILS

AHJ:	LAKE CITY, FL
DRAWN BY: ZMR	DRAWN BY DATE: 02/05/2025
DESIGNED BY: ZMR	DESIGNED BY DATE: 02/05/2025
CHECKED BY: TAB II	CHECKED BY DATE: 02/05/2025
JOB#: 1010-25003	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME/NUMBER: ----
SHEET: FS6.0 OF	TOTAL QTY OF SHEETS IN SET: 7
REV: 0	DATE: 02/05/2025

ZACHARYROGERS
2/3/2025

1010-25003 COLUMBIA COUNTY 911