



Flow Calculation Report

06-873 Fike Flow Calculation Version 2.4.7.0
FK-5-1-12 Calculation Engine Version 1.00.0000

UL Ex4623 FM 3059379
Date Printed: 2/10/2022

Company Information table with fields: Name, Address, City, State/Province, Postal Code, Country, Web Site.

Project Setup table with fields: Selected Agent Type, Selected Hardware Group, Ambient Room Temperature, Discharge Time.

Project Information table with fields: Description, Designer, Account Number.

Hazard Information table with fields: Description, Protecting Agent, Length, Width, Height, Added Volume, Removed Volume, Protected Volume, Minimum Temperature, Maximum Temperature, Relative Humidity, Altitude, Minimum Agent Concentration, Agent Design Concentration, Maximum Agent Concentration, Agent Required.

Total Agent Required table with field: Agent Required for all Hazards.

Cylinder Information table with fields: Description, Agent Qty, Pressure, Volume, Diameter, Height.

Nozzle Information table with fields: Description, Requested Agent, Orifice, Thread, Dispersion Angle.

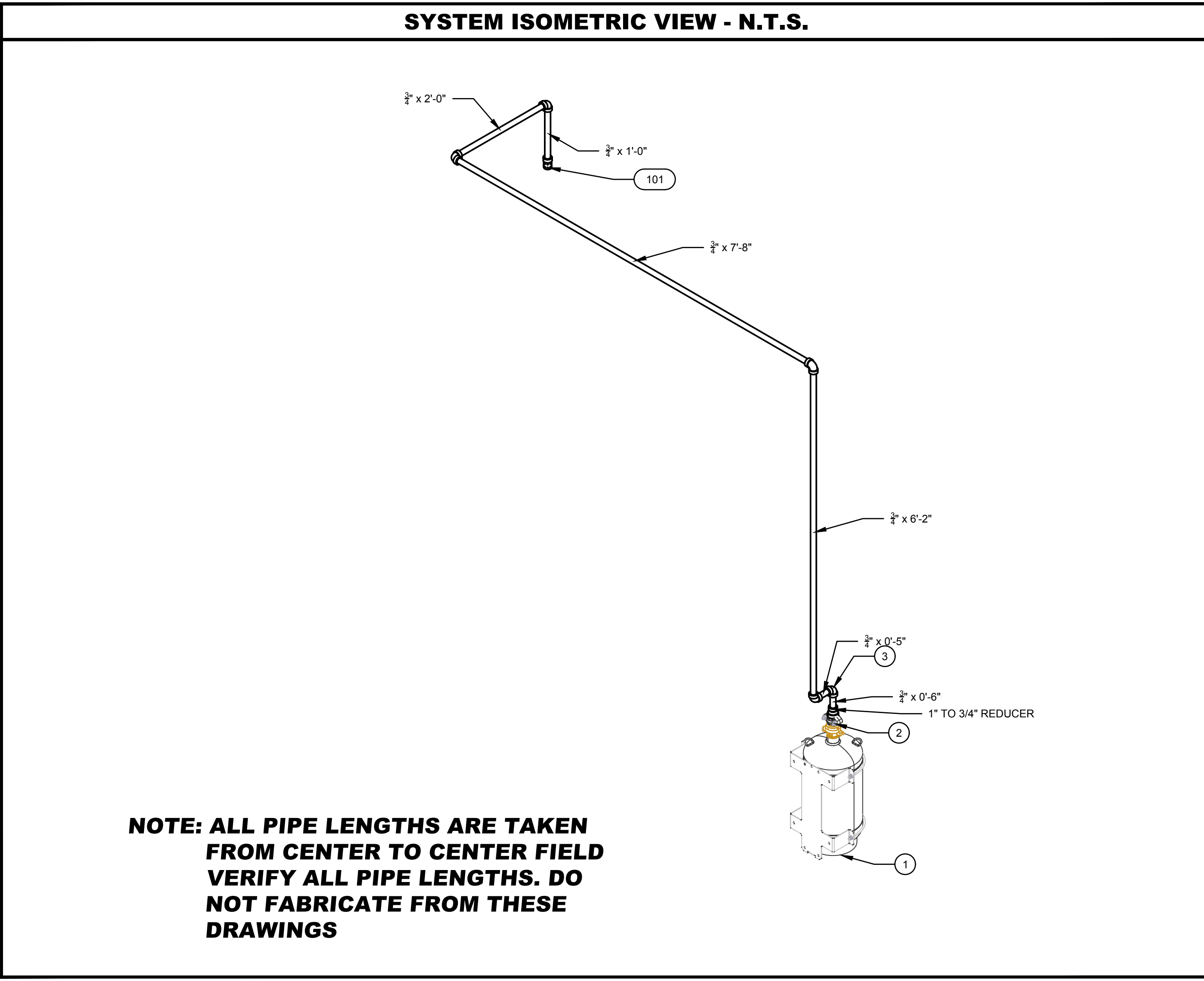
Table Input Data table with columns: Start, End, Length, Elevation Change, Diameter, Schedule, Cylinder, etc.

Table Results Data table with columns: Start, End, Pipe Type, Equivalent Length, Start Pressure, End Pressure, Agent Rate, Flow, Nozzle Agent, Nozzle Size, Orifice, Vapor, Liquid, Discharge Time, End of Liquid.

Table Results Messages table with fields: FK-5-1-12 Flow Calculation Engine Version 1.00.0000, Calculation based on fixed nozzle codes and pipe sizes.

Bill of Materials table with columns: Quantity, Description. Includes Pipes, Nozzles, Cylinders, Elbows.

System Acceptance Report table with sections: Nozzle Performance, Agent Concentration Per Hazard, Hazard Venting Requirements.



NOTE: ALL PIPE LENGTHS ARE TAKEN FROM CENTER TO CENTER FIELD. VERIFY ALL PIPE LENGTHS. DO NOT FABRICATE FROM THESE DRAWINGS.

AUXILIARY FUNCTIONS AND ROOM INTEGRITY TO BE PROVIDED BY OTHERS

THE POINTS, WHICH ARE OFFERED HERE, DO NOT CLAIM TO BE ALL-INCLUSIVE OR TO GUARANTEE THAT THE ROOM INTEGRITY + DOOR FAN TEST WILL PASS. THEY ARE PRESENTED AS THE MOST COMMON ITEMS THAT ARE OVERLOOKED WHICH CAN AFFECT THE ROOM INTEGRITY CERTIFICATION. THE ROOM INTEGRITY TEST IS THE PROOF TO THE AUTHORITY HAVING JURISDICTION PROVING THAT THE HAZARD WILL HOLD THE AGENT FOR THE TIME ALLOTTED BY NFPA 2001. THE AHJ WILL REQUIRE PROOF OF THIS TEST AND MAY NOT APPROVE THE SYSTEM IF THIS TEST FAILS.

ENGINEER OF RECORD stamp for James M. Curtis, License No. 37912, State of Florida. Includes digital signature and date: 2022.02.22 10:35:43 -05'00'.

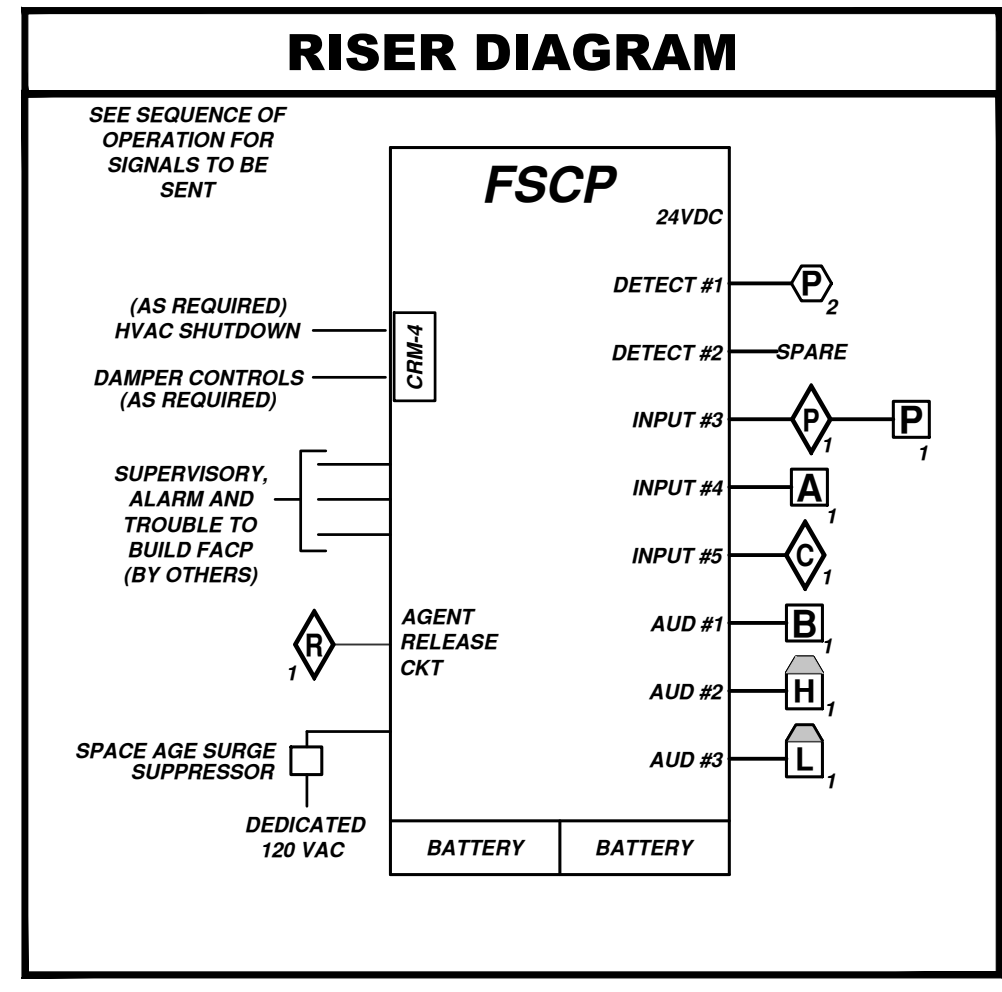
Flagship Fire logo and contact information: 1500 15TH AVE. DR. E., SUITE 106, PALMETTO, FL 34221. PHONE: (941) 723-7230 / FAX: (941) 723-0181.

Revision table with columns: REV, NORTH ARROW, DESCRIPTION, BY, DATE.

Table with columns: REVIEW, NORTH ARROW, DESCRIPTION, BY, DATE.

Table with columns: PROJECT, ADDRESS, DESCRIPTION. Project: CCBCC, Address: 135 NE HERNANDO AVE LAKE CITY, FLORIDA.

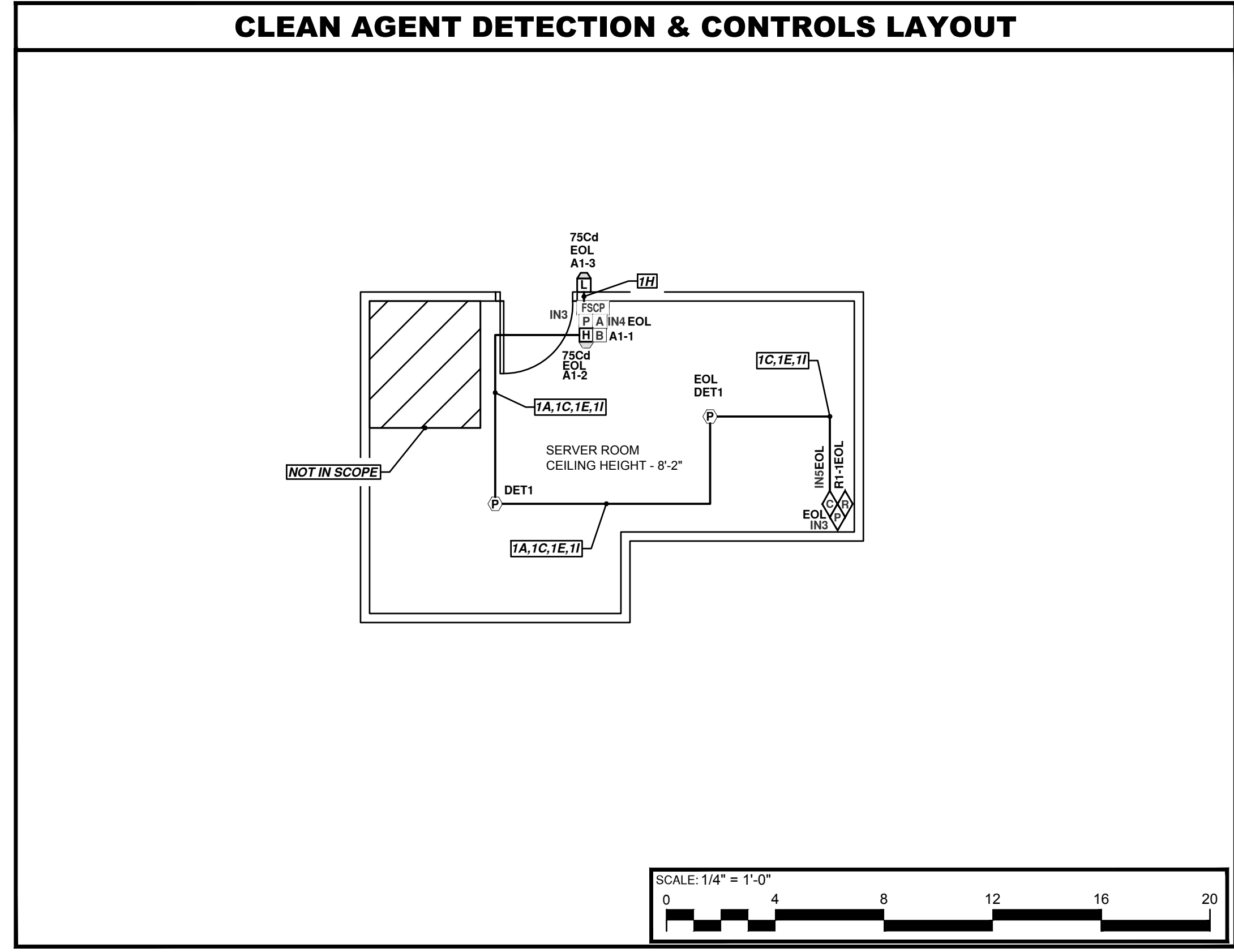
Table with columns: DRAWN BY, DESIGNED BY, CHECKED BY, JOB#, DRAWING SIZE, D-SHEET, SHEET, DATE. Includes drawing number FS3 OF 6 and date 2/9/2022.



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
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
J	2	14 AWG	THHN	S1-1 SOLENOID RELEASE
K	2	14 AWG	THHN	24V DC AUX. POWER
L	1	16 AWG	THHN	ANNUNCIATOR PULL DOWN

EXAMPLE: 1A,2B,1D WIRE TYPE (SEE CHART)
CONDUIT CIRCUIIT QUANTITY



BATTERY CALCULATIONS

CONTROL PANEL BATTERY CALCULATION						
FACP	QTY	TYPE	PART NUMBER	STANDBY	TOTAL STANDBY	TOTAL ALARM
1	PANEL	10-063-1-R-1		0.1350 Amps	0.1350 Amps	0.1350 Amps
1	PNLRLY	10-2204		0.0110 Amps	0.0110 Amps	0.0390 Amps
2	PHOTO	63-1308		0.0000 Amps	0.0001 Amps	0.0002 Amps
1	WHS	20-123-48		0.0000 Amps	0.0000 Amps	0.1670 Amps
1	WMS	20-123-01		0.0000 Amps	0.0000 Amps	0.1380 Amps
1	BELL	20-123-116		0.0000 Amps	0.0000 Amps	0.1000 Amps
1	IRM	70-279		0.0030 Amps	0.0030 Amps	0.0370 Amps
TOTAL				0.1491 Amps		0.6163 Amps
				24 Hrs	HOURS	0.083 Hrs
				3.58 Ah	AMP HOUR	0.05 Ah
				1.20	DERATING	1.20
				4.29 Ah	TOTAL	0.06 Ah
TOTAL REQUIRED						4.355 Ah

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

SEE EQUIPMENT LIST FOR SIZE

VOLTAGE DROP CALCULATIONS

NOTIFICATION APPLIANCE CIRCUIT SCHEDULE						
CIRCUIT	TYPE	CANDELA	PART NUMBER	ALARM	QTY	TOTAL
A1-1	BELL		20-123-116	0.100 Amps	1	0.100 Amps
A1-2	WHS	75Cd	20-123-48	0.167 Amps	1	0.167 Amps
A1-3	WMS	75Cd	20-123-01	0.138 Amps	1	0.138 Amps
R1-1	IRM		70-279	0.037 Amps	1	0.037 Amps

VOLTAGE DROP CALCULATION					
POWER SUPPLY	CIRCUIT	TOTAL AMPS	FOOTAGE	OHMS PER 1K	VOLTAGE DROP
F1	A1-1	0.100 Amps	200 Ft.	3.19	0.06 Vdc
F1	A1-2	0.167 Amps	200 Ft.	3.19	0.11 Vdc
F1	A1-3	0.138 Amps	200 Ft.	3.19	0.09 Vdc
F1	R1-1	0.037 Amps	200 Ft.	3.19	0.02 Vdc

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)
(R)xxx	AGENT MANUAL RELEASE STATION (xxx = ZONE OR ADDRESS)
(B)	AGENT FIRST ALARM BELL
(H)sp	AGENT PRE-DISCHARGE HORN/STROBE sp-CIRCUIT #
(L)sp	AGENT DISCHARGE STROBE sp-CIRCUIT #
(C)	CLEAN AGENT CONTROL HEAD MONITOR SWITCH sp-CIRCUIT #
(D)	AGENT DISCHARGE CONTROL HEAD
(S)	AGENT DISCHARGE PRESSURE SWITCH
(N)	AGENT 360° DISCHARGE NOZZLE
(C)xxx	CLEAN AGENT STORAGE CYLINDER (xxx = FILL WEIGHT)

ENGINEER OF RECORD

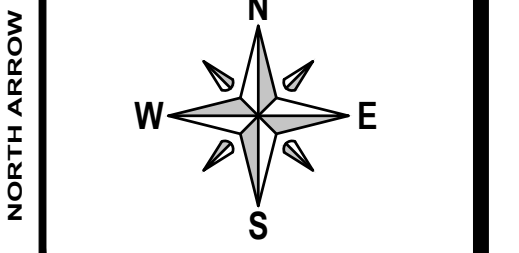
CURTIS ENGINEERING SERVICE, LLC - CA#31561
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA 34748

Digitally signed by James Curtis
Date: 2022.02.22 10:35:56 -05'00'

Flagship Fire

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. TB160600012006 / EFR000149

REV.	DATE:	BY:	DESCRIPTION



REVIEW	DATE:	BY:	DESCRIPTION

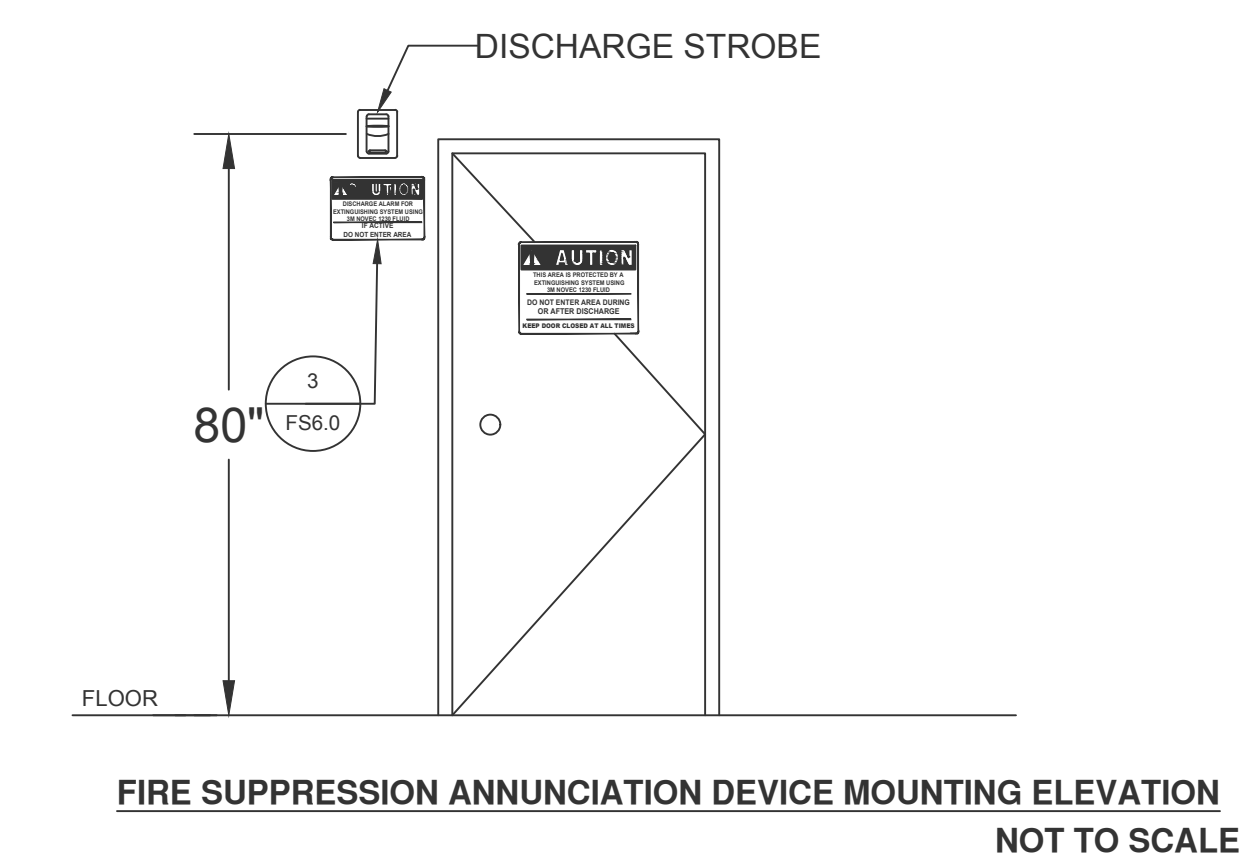
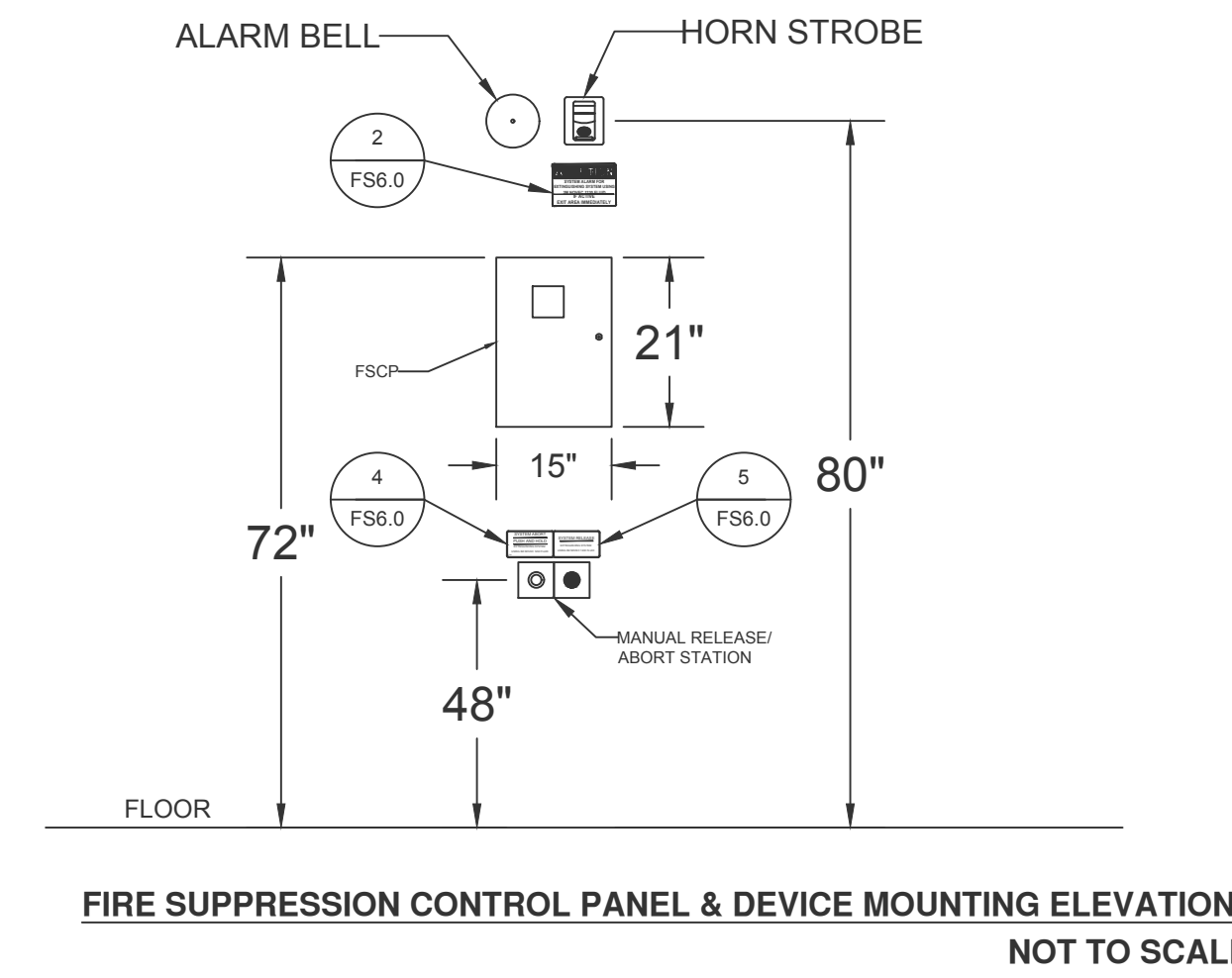
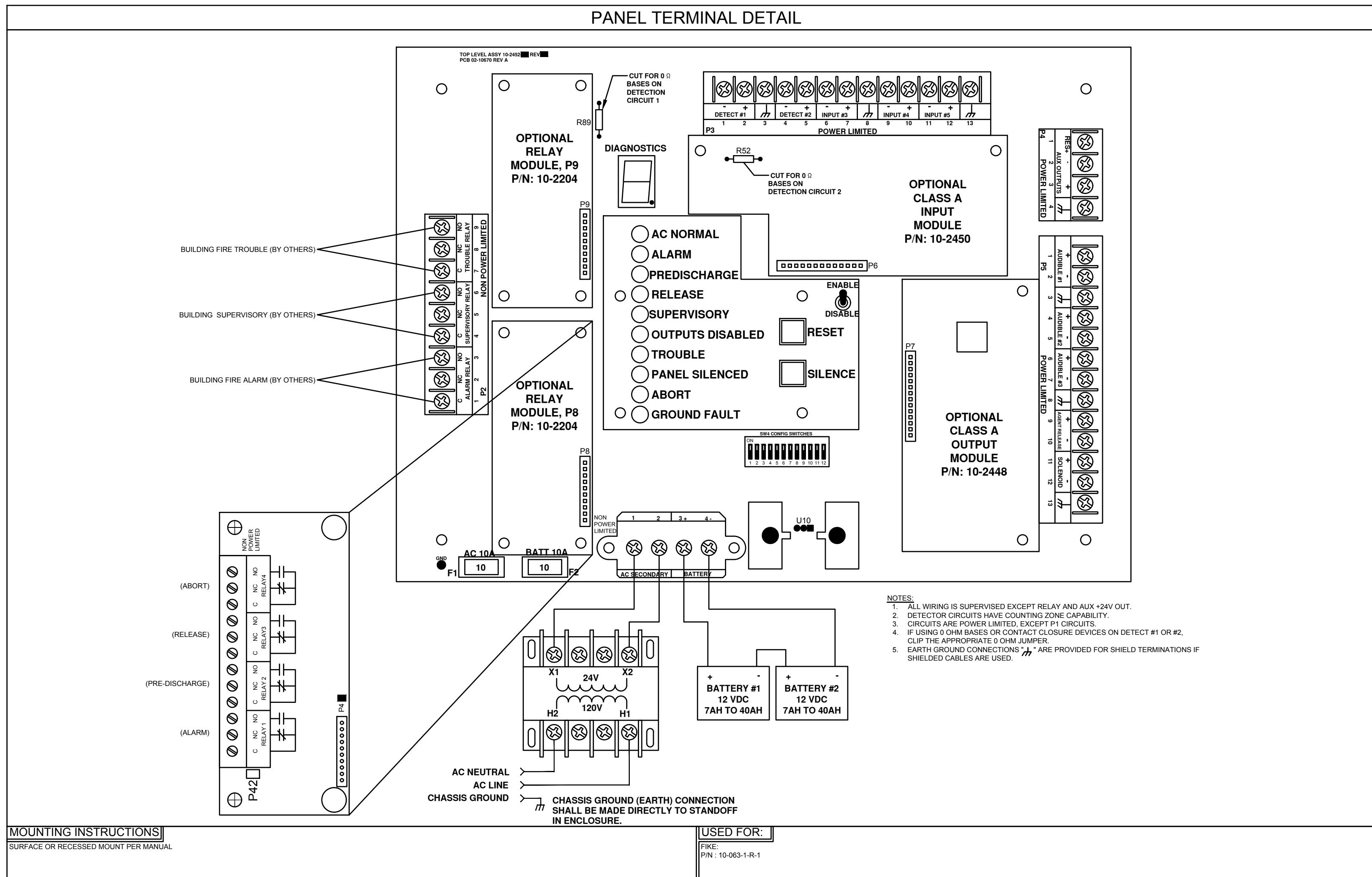
CCBCC

**135 NE HERNANDO AVE
LAKE CITY, FLORIDA**

**FIRE SUPPRESSION SYSTEM
DETECTION & CONTROLS FLOOR PLAN**

PROJECT	ADDRESS	DESCRIPTION

LAKE CITY, FLORIDA	
DRAWN BY: ZSP	DRAWN BY DATE: 2/9/2022
DESIGNED BY: ZSP	DESIGNED BY DATE: 2/9/2022
CHECKED BY: JA	CHECKED BY DATE: 2/9/2022
JOB#: 1010-22006	SCALE: AS SHOWN
DRAWING SIZE: D-SHEET (24 X 36)	FILE NAME NUMBER: ----
SHEET: FS4	TOTAL CITY OF SHEETS IN SET: 6
REV: 0	DATE: 2/9/2022



CAUTION

THIS AREA IS PROTECTED BY A EXTINGUISHING SYSTEM USING 3M NOVEC 1230 FLUID

DO NOT ENTER AREA DURING OR AFTER DISCHARGE

KEEP DOOR CLOSED AT ALL TIMES

1 WARNING SIGN
FS6.0 NOT TO SCALE

CAUTION

SYSTEM ALARM FOR EXTINGUISHING SYSTEM USING 3M NOVEC 1230 FLUID IF ACTIVE

EXIT AREA IMMEDIATELY

2 LEAVE IMMEDIATELY SIGN
FS6.0 NOT TO SCALE

CAUTION

DISCHARGE ALARM FOR EXTINGUISHING SYSTEM USING 3M NOVEC 1230 FLUID IF ACTIVE

DO NOT ENTER AREA

3 DISCHARGE, DO NOT ENTER SIGN
FS6.0 NOT TO SCALE

SYSTEM ABORT
PUSH AND HOLD
EXTINGUISHING SYSTEM
USING 3M NOVEC 1230 FLUID

4 SYSTEM ABORT SIGN
FS6.0 NOT TO SCALE

SYSTEM RELEASE
EXTINGUISHING SYSTEM
USING 3M NOVEC 1230 FLUID

5 DO NOT ENTER SIGN
FS6.0 NOT TO SCALE

INSTALLATION NOTE:

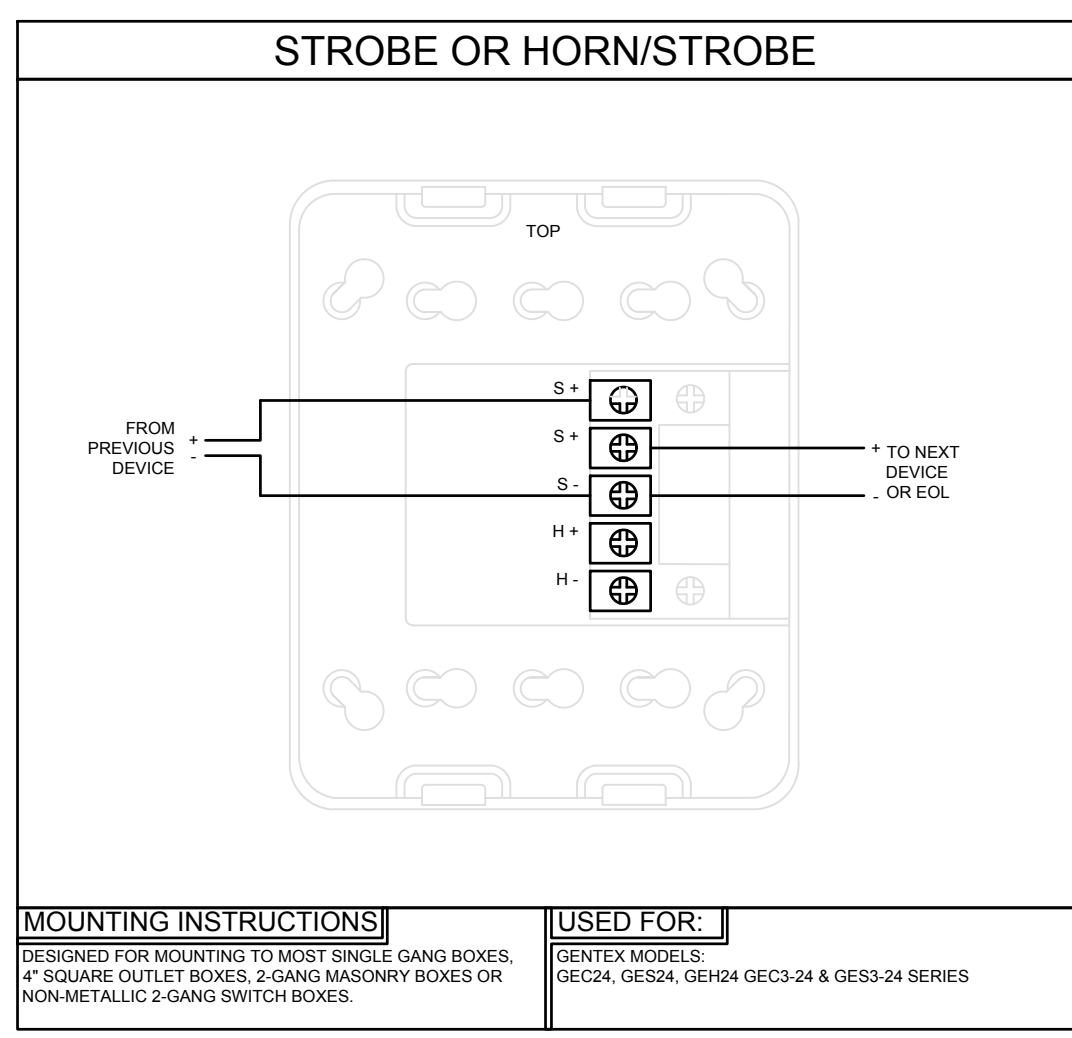
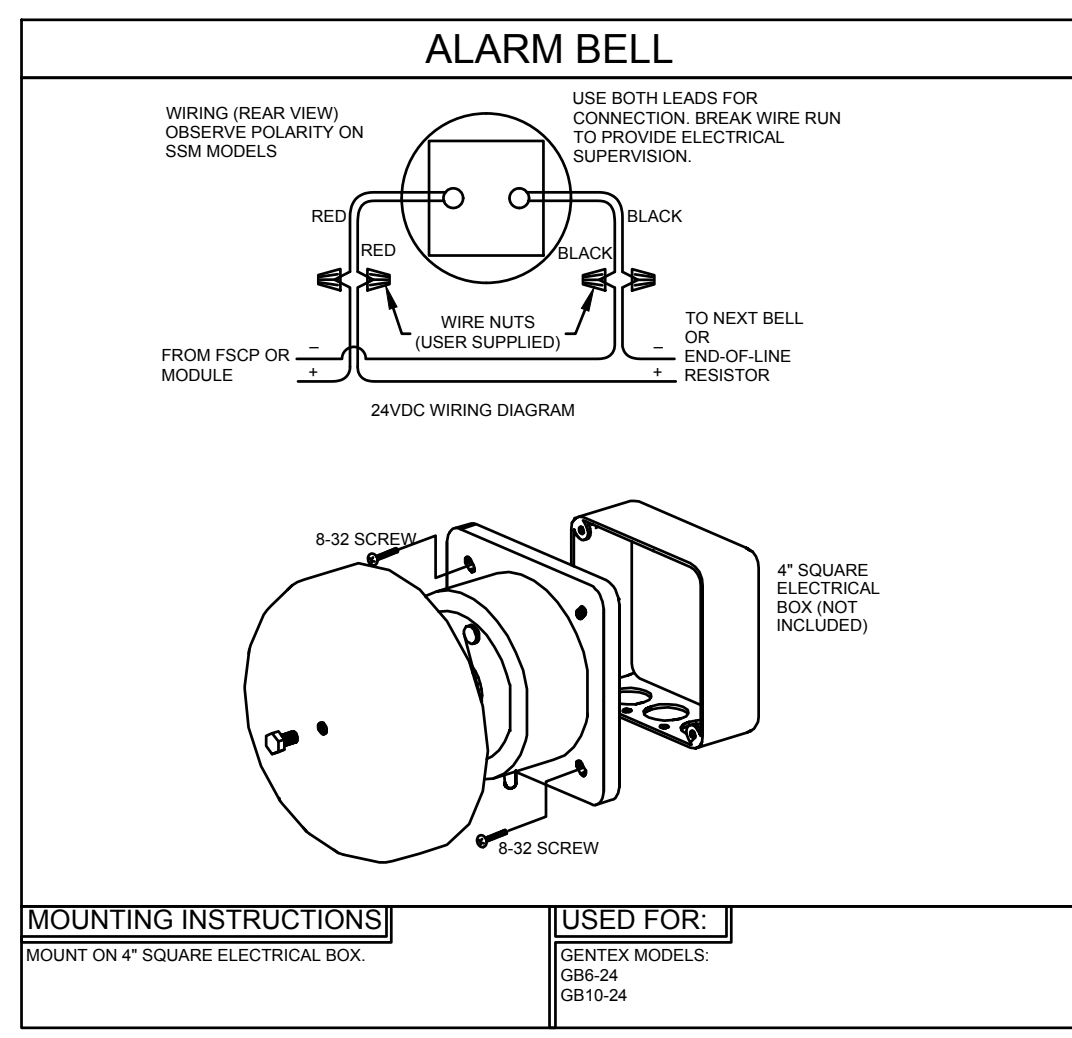
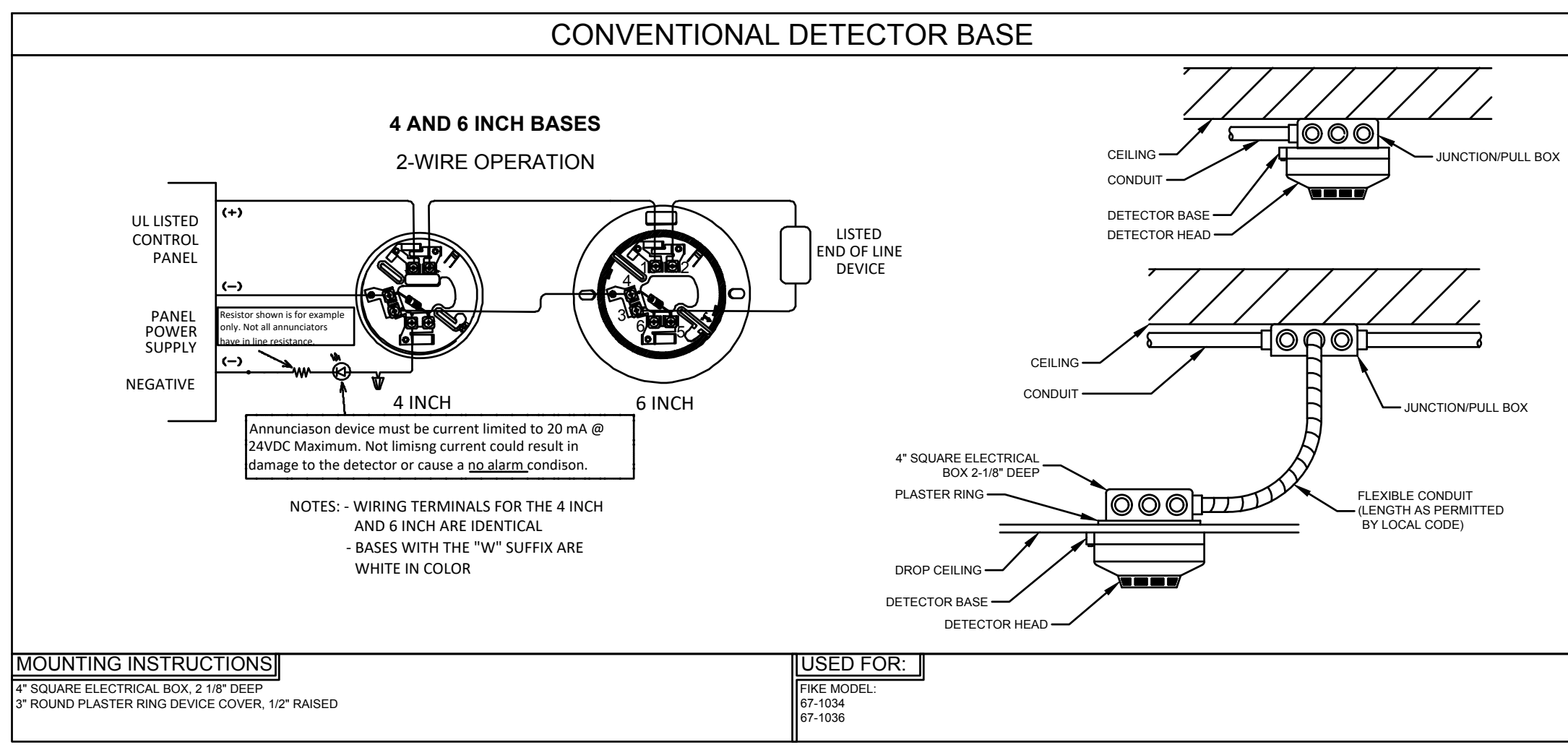
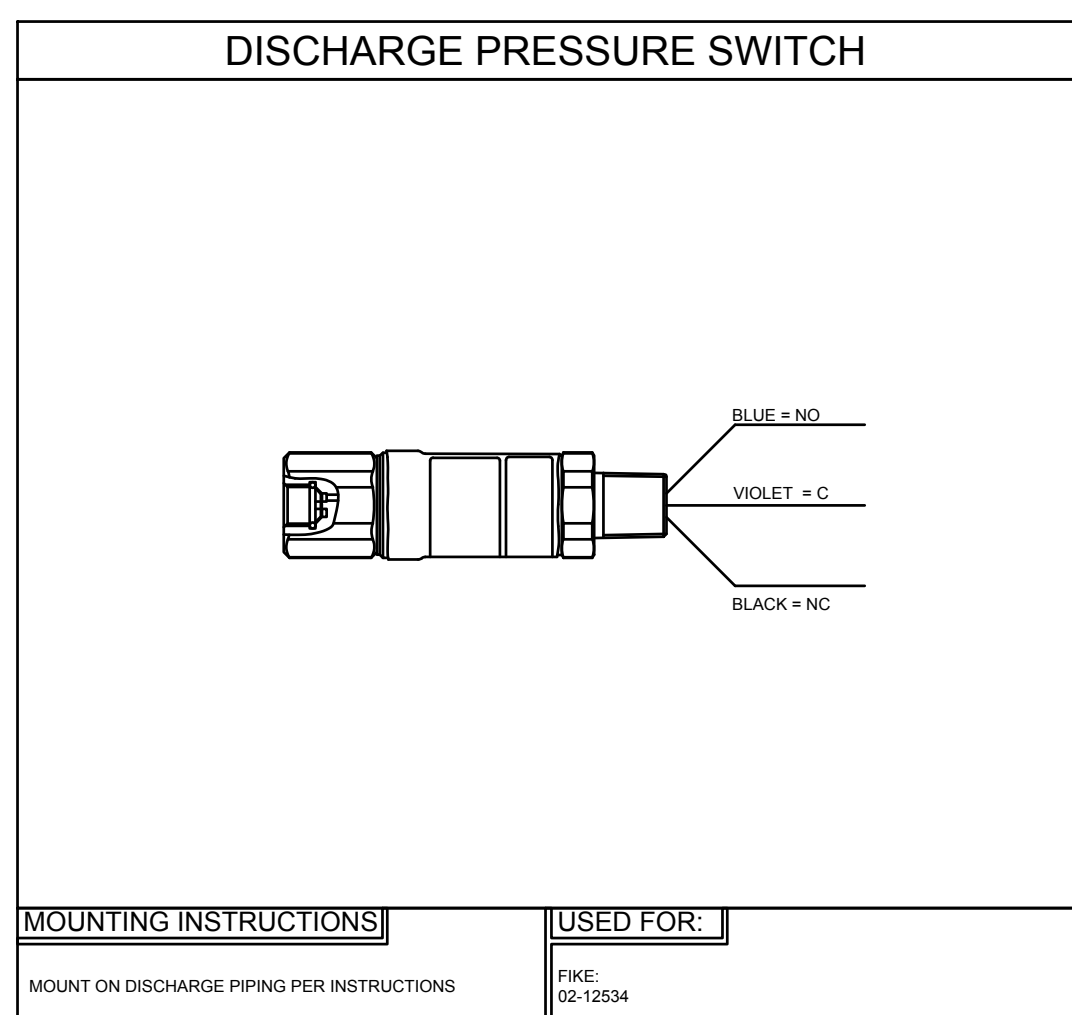
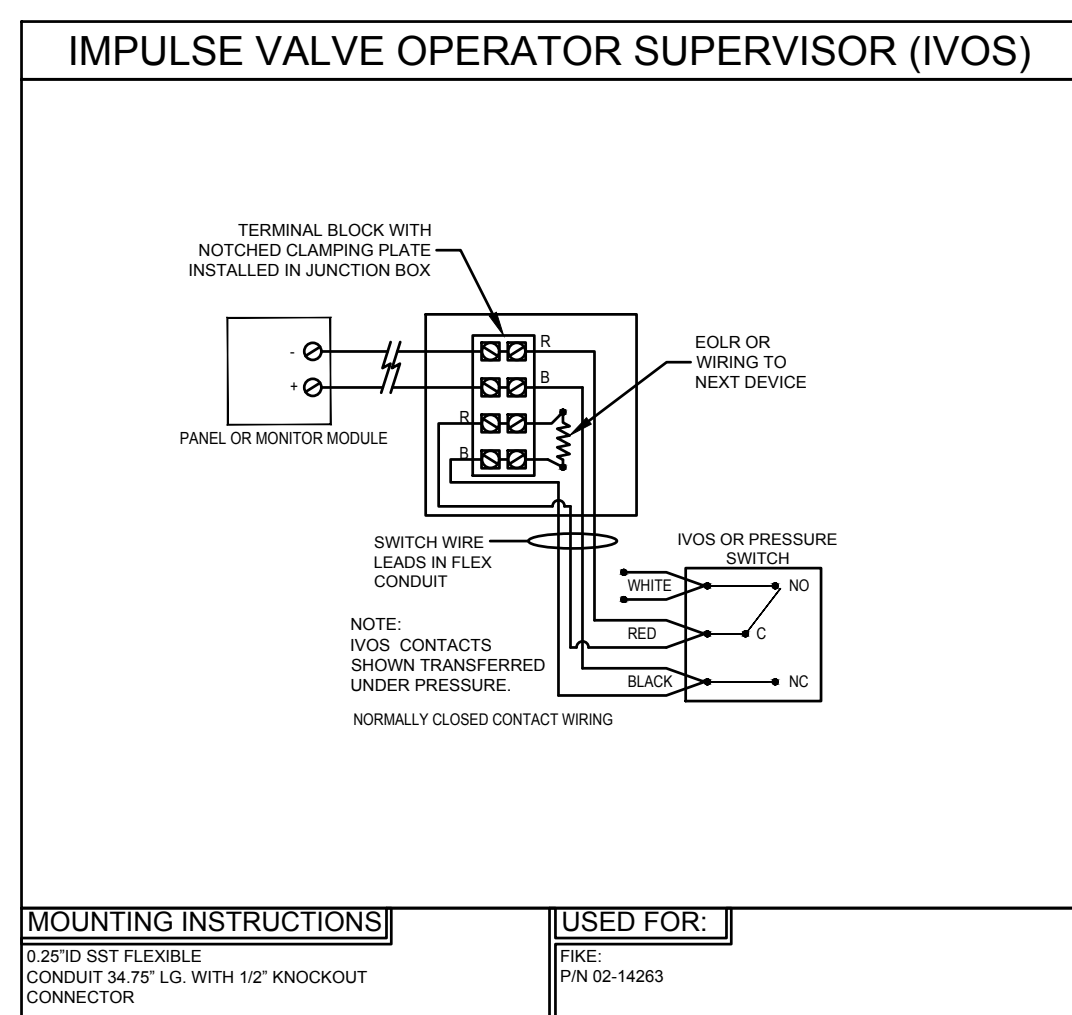
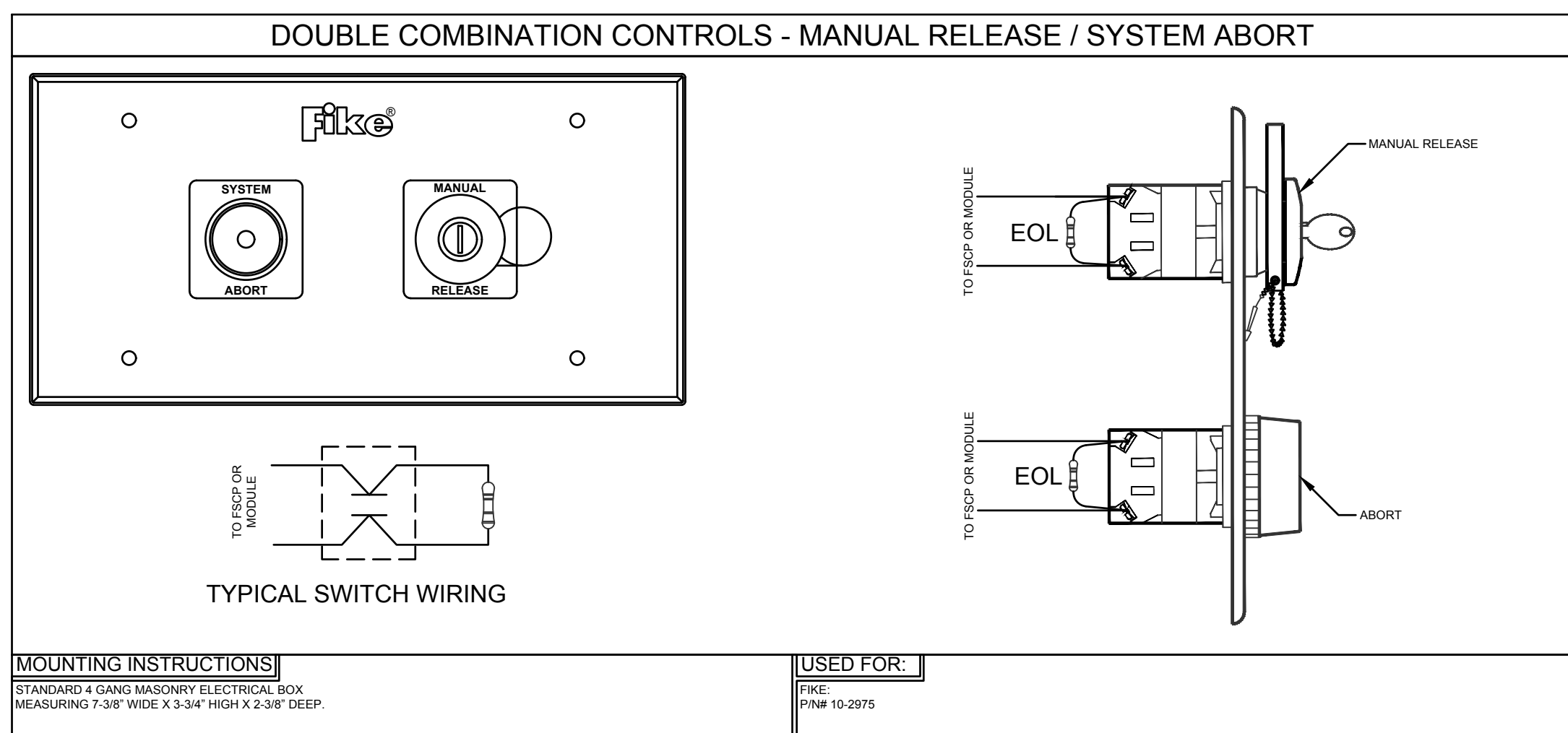
THE INFORMATION SHOWN ON THIS DRAWING IS FOR REFERENCE PURPOSES ONLY. ITS INTENT IS TO PROVIDE THE SYSTEM INSTALLER WITH THE NECESSARY INFORMATION AS TO HOW TO WIRE FIELD DEVICES. ACTUAL CONDUIT ROUTING, CIRCUIT DIVISION, & FIELD DEVICE LOCATIONS SHALL BE DETERMINED BY THE SYSTEM INSTALLER IN THE FIELD. 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
JAMES M. CURTIS, P.E. - PE#37912
7341 SUNNYSIDE DRIVE
LEESBURG, FLORIDA 34748

Digitally signed by James Curtis
Date: 2022.02.22
10:36:10 -05'00'

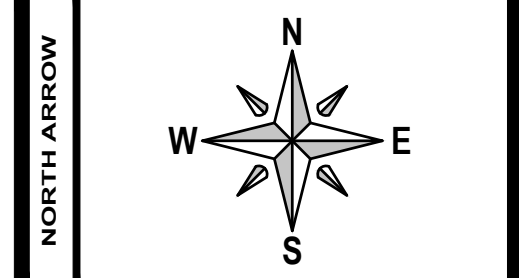
Professional Engineer
No. 37912
STATE OF FLORIDA



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. TB1606001206 / EFR000149

REV.	DATE:	BY:	DESCRIPTION



REVIEW

PROJECT: LAKE CITY, FLORIDA

ADDRESS: 135 NE HERNANDO AVE LAKE CITY, FLORIDA

DESCRIPTION: FIRE SUPPRESSION SYSTEM DEVICE WIRING & MOUNTING DETAILS

PROJECT	ADDRESS	DESCRIPTION
LAKE CITY, FLORIDA	135 NE HERNANDO AVE LAKE CITY, FLORIDA	FIRE SUPPRESSION SYSTEM DEVICE WIRING & MOUNTING DETAILS

