

# FIKE PRE-ENGINEERED FM-200 CLEAN AGENT FIRE SYSTEM INSTALLATION

CLIENT

EAST COAST COMMUNICATIONS  
 29 CYR DRIVE – P.O. BOX 571  
 GORHAM, ME 04038-0571



OWNER/LOCATION

VERIZON WIRELESS  
 EQUIPMENT SHELTER  
 25 CHURCH AVENUE  
 PEAKS ISLAND, ME 04108



**PEACE OF MIND**

P.O. BOX 187  
 GARDINER, ME 04345-0187

TECHNICAL SUPPORT: 1.800.649.9881  
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**SUMMARY**

THESE DRAWINGS SHALL PROVIDE THE INFORMATION NECESSARY TO PERFORM THE OF THE INSTALLATION OF TWO PRE-ENGINEERED FM-200 CLEAN AGENT FIRE SUPPRESSION SYSTEMS AS MANUFACTURED BY FIKE, INC., 704 SOUTH 10TH STREET, P.O. BOX 610, BLUE SPRINGS, MO 64013 USA. THE INFORMATION AND GRAPHIC REPRESENTATIONS OF THE FM-200 CLEAN AGENT FIRE SUPPRESSION SYSTEMS CONTAINED HEREIN ARE DRAWN FROM INFORMATION IN THE DESIGN, INSTALLATION, RECHARGE AND MAINTENANCE MANUAL TITLED "EQUIPMENT, DESIGN & SERVICE MANUAL FIKE CLEAN AGENT SYSTEM W/ IMPULSE TECHNOLOGY HFC-227EA AGENT DOT / TC CONTAINERS" FIKE PART NUMBER 06-433 (REV. 4 / NOVEMBER, 2011)..

THE FM-200 CLEAN AGENT FIRE SUPPRESSION SYSTEMS ARE DESIGNED TO PROTECT TWO SEPARATE AREAS KNOWN AS THE EQUIPMENT ROOM AND THE GENERATOR SHELTER. THE PROTECTED HAZARDS CONTAINS ELECTRONIC DATA AND TELECOMMUNICATIONS PROCESSING EQUIPMENT (EQUIPMENT ROOM) AND A DIESEL POWERED GENERATOR (GENERATOR SHELTER). THE PROTECTED AREAS SHALL BE PROTECTED BY A TOTAL FLOODING DESIGN.

INDUSTRY STANDARDS FOR SYSTEM DESIGN CONSIDERATIONS WERE DERIVED FROM NFPA 72 NATIONAL ALARM AND SIGNALING CODE (2013 EDITION) AND NFPA 2001 STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (2012 EDITION).

THE BUILDING CLASSIFICATION WHERE THE PROTECTED HAZARDS ARE, AS DEFINED BY NFPA 101 LIFE SAFETY CODE (2012 EDITION) INDUSTRIAL, SPECIAL PURPOSE INDUSTRIAL OCCUPANCY.



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**NOTES:**

**System Information:**

FIKE PRE-ENGINEERED FM-200 SYSTEMS WITH SHP PRO CONTROL & RELEASING PANELS PROTECTING AN EQUIPMENT ROOM & GENERATOR SHELTER

**Client/Location:**

EAST COAST COMMUNICATIONS  
 VERIZON WIRELESS  
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P.O. BOX 1005  
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FIKE FM-200 CLEAN AGENT FIRE SYSTEM COVER SHEET

Proj. no.:  
 CAD File: VWPportland.DWG  
 Drawn By: T. MOONEY  
 Created on: 12/17/2014  
 Designed by: T. MOONEY  
 Checked by:  
 Approved by:  
 Project Lead: D. BOLDUC  
 Scale: SCALE AS NOTED

Revisions: Date:  
 ii 12/19/2014

SHEET :

03

EQUIPMENT ROOM

GENERATOR SHELTER

FIRE SYSTEM SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MFGR. PART NO.
[FSCP]	SHP PRO FIRE SYSTEM CONTROL PANEL W/ CRM-4 RELAY CARD	FIKE 10-063-1-R-1 FIKE 10-2204
[CA]	MANUAL RELEASE STATION W/ NAMEPLATE	FIKE 10-1638 FIKE 02-10137
[CA]	KEYED ABORT SWITCH W/ NAMEPLATE	FIKE 10-1642 FIKE 02-10106
[IRM]	IMPULSE RELEASE MODULE	FIKE 70-274
[IV]	IMPULSE VALVE OPERATOR KIT	FIKE 70-274
[LP]	CYLINDER LOW PRESSURE SWITCH	FIKE 02-12533
[K]	KEYED AGENT RELEASE SERVICE DISCONNECT	FIKE 10-2699
[Q]	PHOTOELECTRIC SMOKE DETECTOR W/ BASE	FIKE 63-1029
[A]	WALL MOUNT A/V MULTI CANDELA, RED # = CANDELA RATING	FIKE 20-123-50
[A]	WALL MOUNT V/O MULTI CANDELA, RED WITH ENCLOSURE # = CANDELA RATING	FIKE 20-1579
[C]	FM-200 CLEAN AGENT STORAGE CONTAINER W/ MOUNTING BRACKET	FIKE 70-264 OR FIKE 70-265
[EOL#]	END-OF-LINE RESISTOR # = RESISTOR VALUE	N/A
[ ]	INDICATES NUMBER OF CONDUCTORS IN CIRCUIT	N/A

SYSTEM DESCRIPTION

- INTERSTATE FIRE SHALL FURNISH AND INSTALL ALL MATERIALS, LABOR AND SERVICES REQUIRED TO INSTALL A COMPLETE PRE-ENGINEERED FM-200 FIRE SYSTEM AS MANUFACTURED BY FIKE, INC. P.O. BOX 610, BLUE SPRINGS, MO 64013, TO THE OWNER'S SPECIFICATION AS WELL AS ALL APPLICABLE FIRE PREVENTION CODES.
- THE FIRE SUPPRESSION INSTALLATION SHALL BE COMPLIANT WITH NFPA 2001: CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (2012 EDITION). THE FIRE DETECTION INSTALLATION SHALL BE COMPLIANT WITH NFPA 72: NATIONAL FIRE ALARM & SIGNALING CODE (2010 EDITION), AND SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
- THE FM-200 SYSTEM SHALL BE CONTROLLED BY A FIKE SHP PRO CONTROL PANEL. THIS PANEL IS U.L. LISTED FOR FIRE SUPPRESSION AND FIRE ALARM SERVICE. THIS PANEL WILL BE REFERRED TO AS THE "FSCP."
- THE FSCP SHALL BE MOUNTED NEAR THE AGENT SUPPLY AND BE ACCESSIBLE.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DEDICATED CIRCUIT, WITH A LOCKING BREAKER. THE FSCP SHALL HAVE BATTERY BACK-UP SUFFICIENT TO OPERATE THE FSCP FOR A MINIMUM OF 24 HOURS IN STAND BY MODE AND FIVE MINUTES IN ALARM MODE.
- THE FSCP SHALL COMMUNICATE ALARM AND TROUBLE CONDITIONS TO THE EXISTING BUILDING FIRE ALARM SYSTEM.
- THE FSCP SHALL ACCEPT INPUTS FROM THE FOLLOWING DEVICES:
  - MANUAL PULL STATIONS
  - SMOKE DETECTORS
  - SUPPRESSION ABORT STATIONS
  - LOW PRESSURE SWITCH

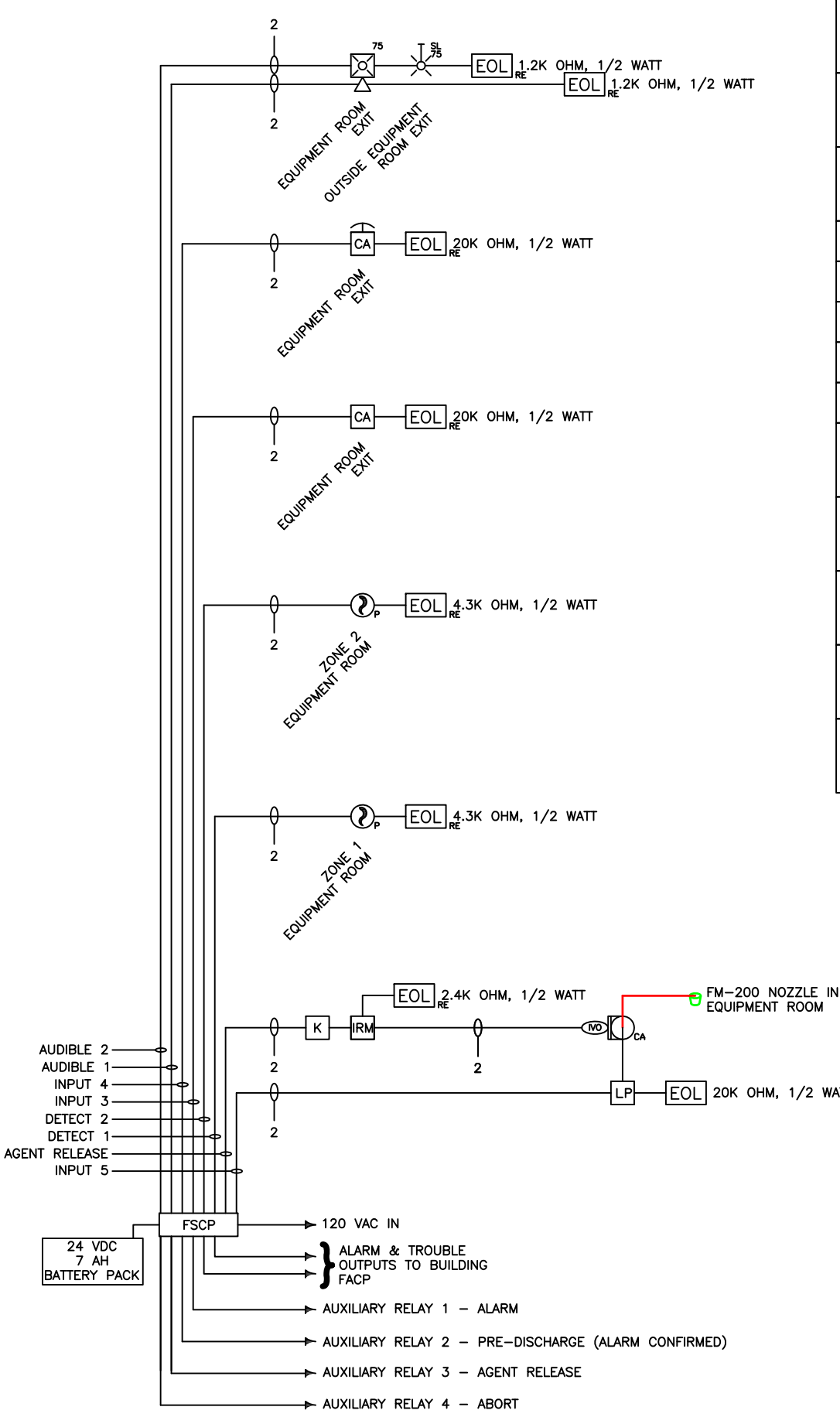
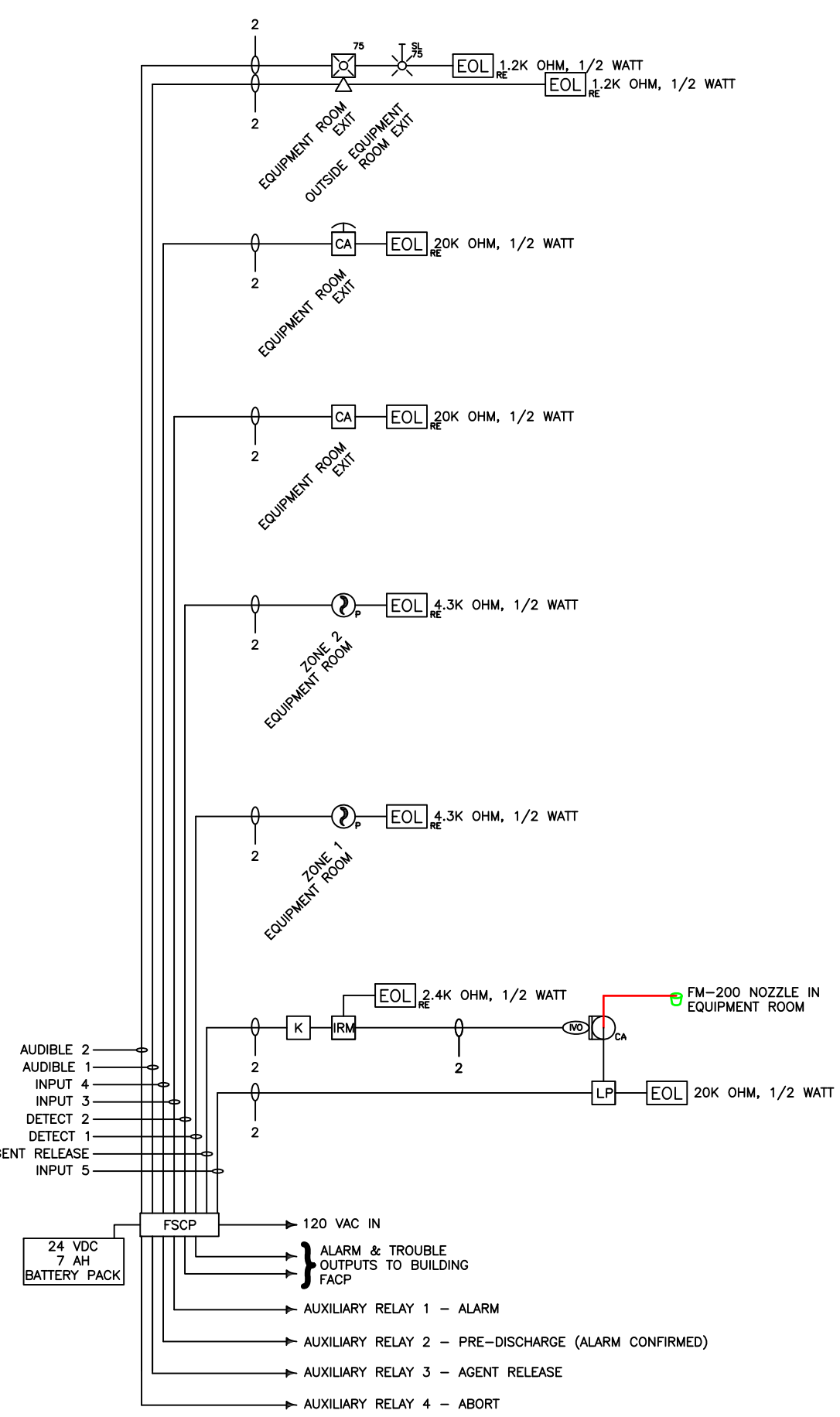
ROOM INTEGRITY NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE OWNER/OCCUPANT TO ASSURE THAT THE PROTECTED SPACE IS CAPABLE OF CONTAINING THE DESIGN QUANTITY OF CLEAN AGENT FOR A PERIOD OF TEN (10) MINUTES.
- PRESSURIZATION/DEPRESSURIZATION TESTS OF THE PROTECTED ENCLOSURE SHALL BE CONDUCTED TO ASSURE PERFORMANCE MEETING THE REQUIREMENTS OF NFPA STANDARD 2001.
- TO PREVENT LOSS OF AGENT THROUGH OPENINGS TO ADJACENT HAZARDS OR WORK AREAS, OPENINGS SHALL BE PERMANENTLY SEALED OR EQUIPPED WITH AUTOMATIC CLOSURES, WHERE REASONABLE CONFINEMENT OF AGENT IS NOT PRACTICABLE, PROTECTION SHALL BE EXPANDED TO INCLUDE THE ADJACENT CONNECTED HAZARDS OR WORK AREAS OR ADDITIONAL AGENT SHALL BE INTRODUCED INTO THE PROTECTED ENCLOSURE USING AN EXTENDED DISCHARGE CONFIGURATION.
- OTHER THAN THE VENTILATION SYSTEMS IDENTIFIED ABOVE, FORCED-AIR VENTILATING SYSTEMS, INCLUDING SELF-CONTAINED AIR RECIRCULATION SYSTEMS, SHALL BE SHUT DOWN OR CLOSED AUTOMATICALLY WHERE THEIR CONTINUED OPERATION WOULD ADVERSELY AFFECT THE PERFORMANCE OF THE FIRE EXTINGUISHING SYSTEM OR RESULT IN PROPAGATION OF THE FIRE.
- THE PROTECTED ENCLOSURE SHALL HAVE THE STRUCTURAL STRENGTH AND INTEGRITY NECESSARY TO CONTAIN THE AGENT DISCHARGE. IF THE DEVELOPED PRESSURES PRESENT A THREAT TO THE STRUCTURAL STRENGTH OF THE ENCLOSURE, VENTING SHALL BE PROVIDED TO PREVENT EXCESSIVE PRESSURES. DESIGNERS SHALL CONSULT SYSTEM MANUFACTURER'S RECOMMENDED PROCEDURES RELATIVE TO ENCLOSURE VENTING.
- ANY MEASURES NECESSARY TO ACHIEVE THE ROOM INTEGRITY REQUIREMENTS SET FORTH IN THE ABOVE PARAGRAPHS SHALL BE THE RESPONSIBILITY OF THE OWNEWR/OCCUPANT.

CODE & STANDARDS COMPLIANCE

- THIS INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS. ALL EQUIPMENT AND DEVICES USED SHALL BE LISTED IN BOTH THE UL FIRE EQUIPMENT DIRECTORY AND THE FACTORY MUTUAL APPROVAL GUIDE.
  - NFPA 2001 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS, LATEST EDITION
  - NFPA 72 NATIONAL FIRE ALARM & SIGNALING CODE, LATEST EDITION
  - NFPA 70 NATIONAL ELECTRIC CODES, LATEST EDITION
  - AMERICANS WITH DISABILITIES ACT, TITLE 24, LATEST EDITION
  - THE LOCAL AUTHORITY HAVING JURISDICTION
- FIKE CLEAN AGENT SYSTEM W/ IMPULSE TECHNOLOGY HFC-227EA DOT/TC CONTAINERS EQUIPMENT DESIGN & SERVICE MANUAL, P/N 06-433 (REV. 4) NOVEMBER, 2011

- THE FSCP SHALL BE PROGRAMMED AS FOLLOWS:
  - UPON ACTIVATION OF A SINGLE SMOKE DETECTOR;
    - ACTIVATION OF AN AUDIBLE AND VISUAL ALARM SIGNAL ON THE FSCP,
    - INITIATE STAGE ONE ALARM (HORN/STROBE AND STROBE - SLOW PULSE AUDIBLE TONE),
    - TRANSMIT A SIGNAL TO THE BUILDING FIRE ALARM SYSTEM,
    - ACTIVATE AUXILIARY AUXILIARY ALARM RELAY.
  - UPON ACTIVATION OF A SECOND SMOKE DETECTOR;
    - INITIATE 30 SECOND FM-200 PRE-DISCHARGE COUNTDOWN,
    - INITIATE STAGE TWO ALARMS (HORN/STROBE AND STROBE - FAST PULSE AUDIBLE TONE),
    - ACTIVATE ALARM CONFIRMED AUXILIARY RELAY.
  - AFTER 30 SECOND DISCHARGE COUNTDOWN;
    - RELEASE FM-200 AGENT,
    - ACTIVATE FM-200 AGENT RELEASE ALARMS (HORN/STROBE AND STROBE - STEADY AUDIBLE TONE),
    - ACTIVATE SYSTEM DISCHARGE AUXILIARY RELAY USED TO OPERATE INTERCONNECTED EQUIPMENT SHUTDOWN.
  - UPON OPERATION OF A MANUAL PULL STATION;
    - IMMEDIATELY RELEASE FM-200 AGENT,
    - ACTIVATE FM-200 RELEASE ALARMS (HORN/STROBE AND STROBE - STEADY),
    - ACTIVATE SYSTEM DISCHARGE AUXILIARY RELAY USED TO OPERATE INTERCONNECTED EQUIPMENT SHUTDOWN.
  - UPON ACTIVATION OF A LOW PRESSURE SWITCH;
    - ACTIVATION OF AN AUDIBLE AND VISUAL SUPERVISORY SIGNAL ON THE FSCP
    - TRANSMIT A TROUBLE CONDITION SIGNAL TO THE BUILDING FACP.
  - UPON OPERATION OF THE ENABLE/DISABLE SWITCH:
    - THE AGENT RELEASE, AND AUDIBLE CIRCUITS ARE DISABLED,
    - THE ALARM RELAY IS DISABLED,
    - ACTIVATION OF AN AUDIBLE AND VISUAL SUPERVISORY SIGNAL ON THE FSCP
    - TRANSMIT A TROUBLE CONDITION SIGNAL TO THE BUILDING FACP.
- INTERSTATE FIRE PROTECTION SHALL FURNISH A ONE YEAR WARRANTY OF ALL PARTS AND LABOR, AND SHALL RELAY TO THE OWNER THE MANUFACTURER'S WARRANTY ON ANY SUCH PARTS.
- INTERSTATE FIRE PROTECTION SHALL PROVIDE TRAINING IN THE OPERATION OF THE FM-200 CLEAN AGENT FIRE SYSTEM.
- INTERSTATE FIRE PROTECTION SHALL PROVIDE RECORD DRAWINGS OF THE FM-200 CLEAN AGENT FIRE SYSTEM.



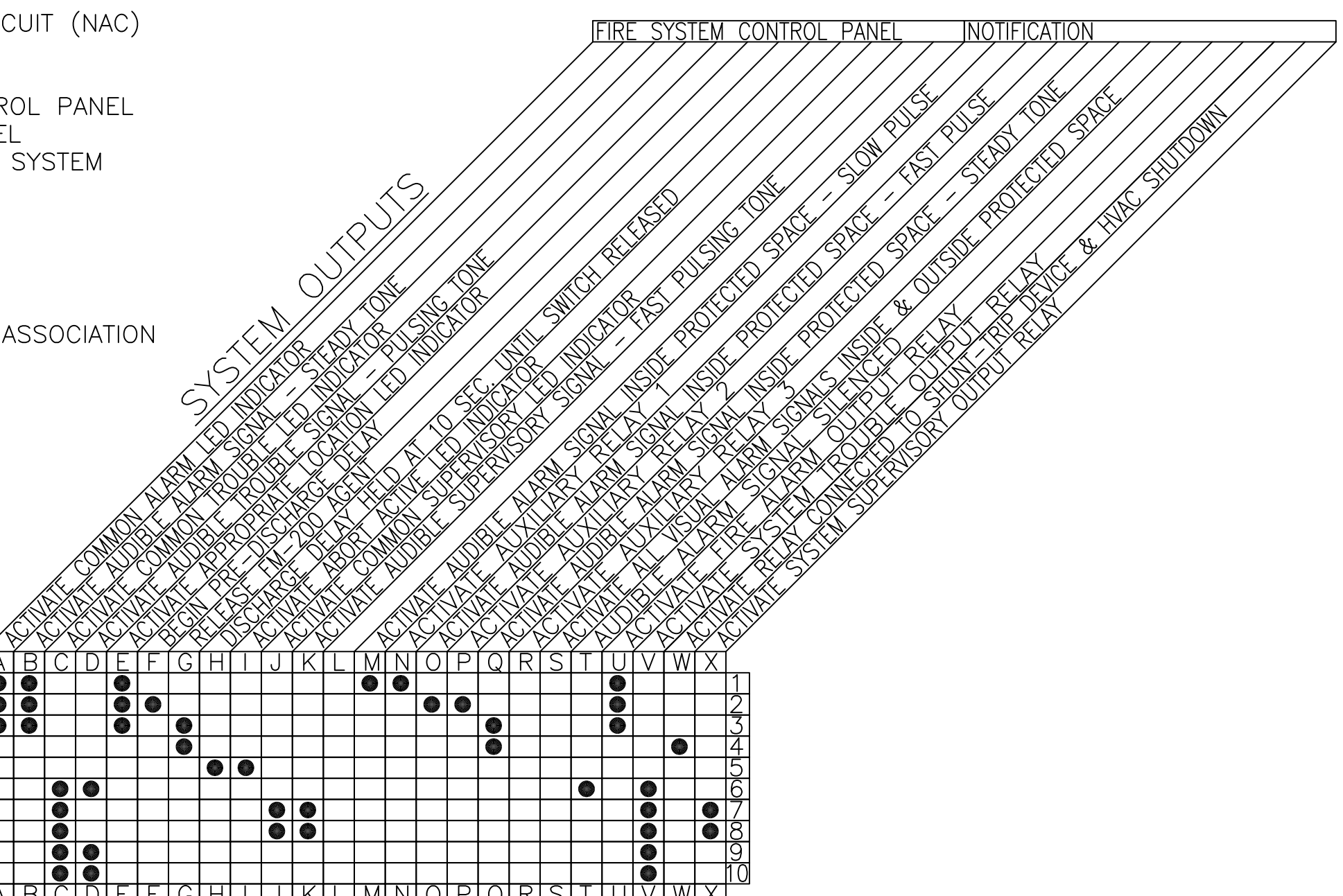
DETECTION & CONTROL RISER DIAGRAM

ABBREVIATIONS

ABBREVIATION	TERM
AUDIBLE CIRCUIT	NOTIFICATION APPLIANCE CIRCUIT (NAC)
CA	CLEAN AGENT
DEG.	DEGREE
FACP	BUILDING FIRE ALARM CONTROL PANEL
FSCP	FIRE SYSTEM CONTROL PANEL
FM-200 SYSTEM	FM-200 CLEAN AGENT FIRE SYSTEM
FT., "	FOOT
IN., "	INCH
IRM	IMPULSE RELEASE MODULE
I/O	IMPULSE VALVE OPERATOR
LPS	LOW PRESSURE SWITCH
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
SCHED.	1 BATTERYMARCH PARK QUINCY, MA 02169-7471 SCHEDULE

SYSTEM INPUTS

- 1ST PHOTO DETECTOR IN ALARM
- 2ND PHOTO DETECTOR IN ALARM
- MANUAL RELEASE STATION OPERATED
- PRE-DISCHARGE DELAY EXPIRES
- SUPPRESSION ABORT STATION OPERATED
- ALARM SILENCE PANEL SWITCH OPERATED
- DISABLE SWITCH OR SUPPRESSION DISCONNECT SWITCH OPERATED
- AGENT CONTAINER LOW PRESSURE SWITCH OPERATED
- DETECTION AND CONTROL SYSTEM CIRCUIT FAULT
- DETECTION AND CONTROL SYSTEM LOSS OF AC POWER



SEQUENCE OF EVENTS MATRIX

NOTES:

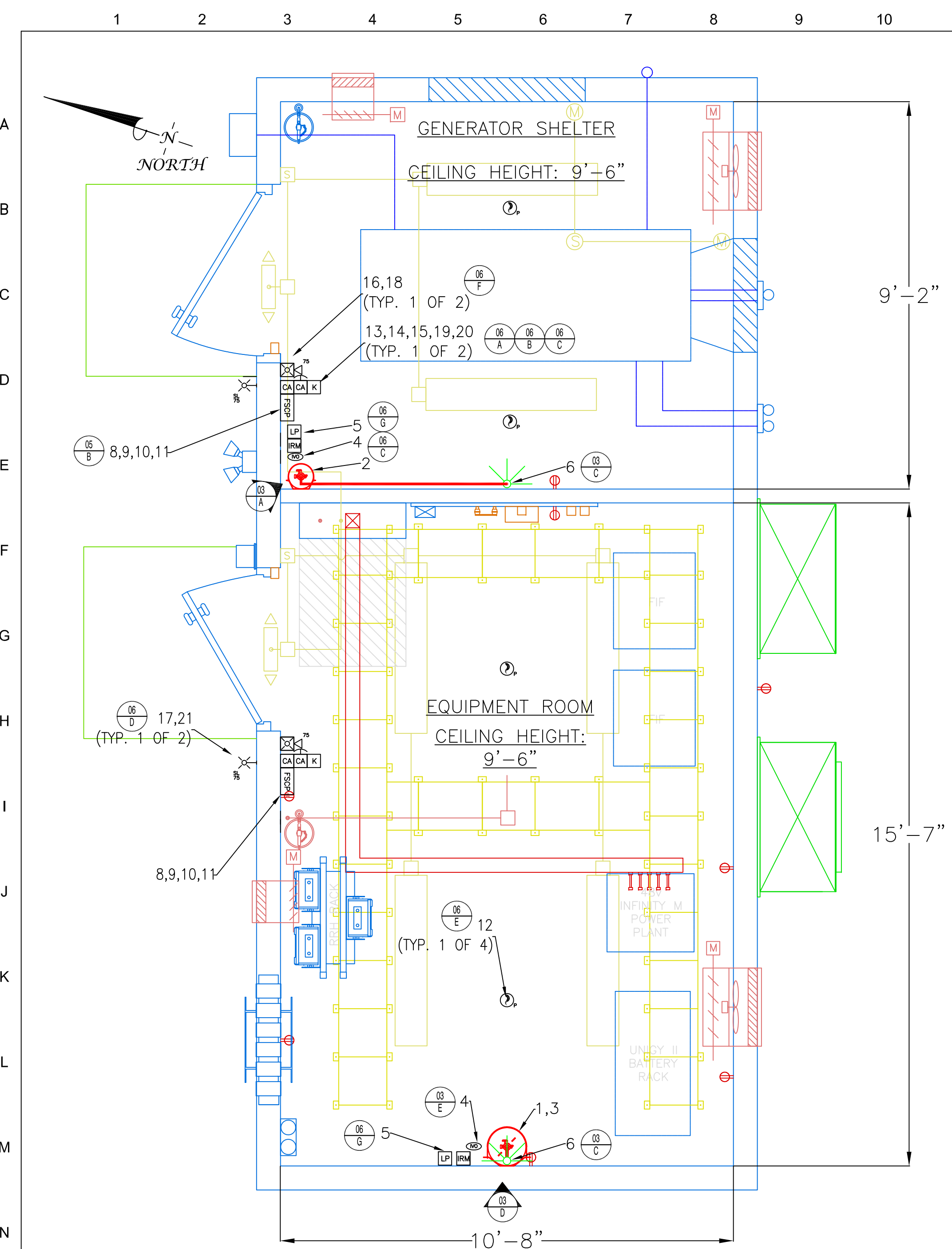
**System Information:**  
 FIKE PRE-ENGINEERED FM-200 SYSTEMS WITH SHP PRO CONTROL & RELEASING PANELS PROTECTING AN EQUIPMENT ROOM & GENERATOR SHELTER

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**Interstate FIRE PROTECTION**  
 P.O. BOX 1005  
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 GARDINER, ME 04345

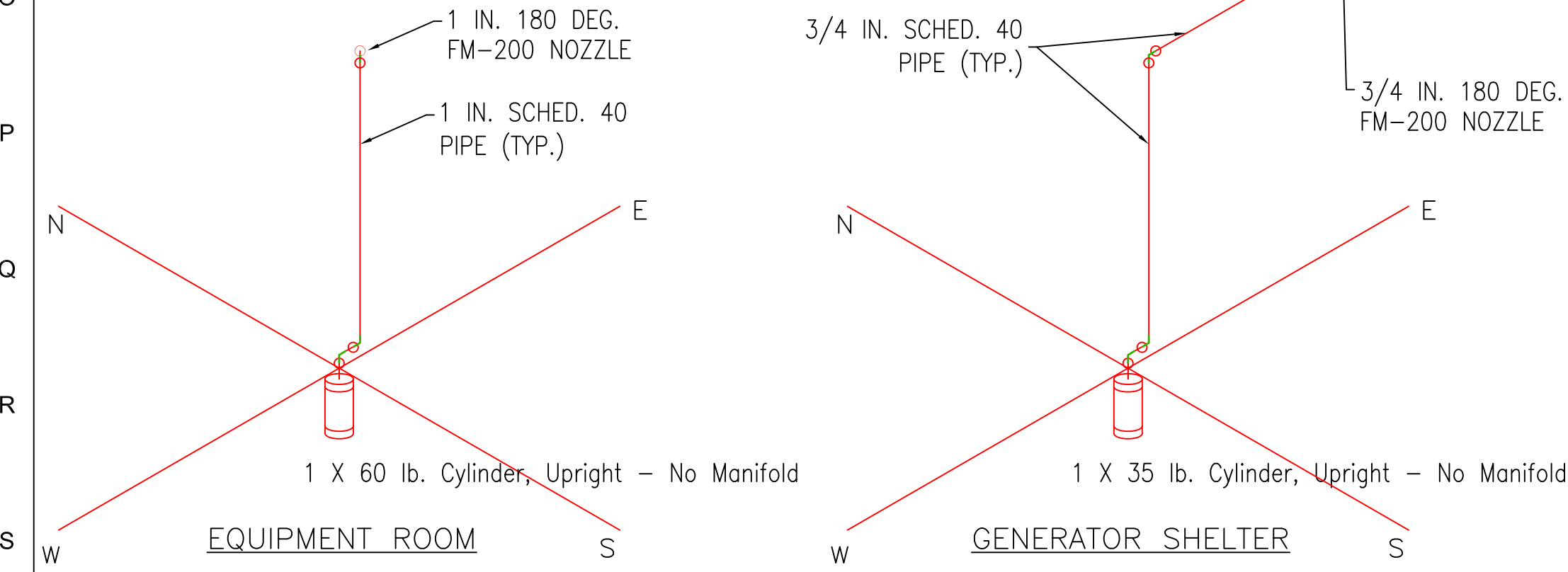
**FIKE FM-200 CLEAN AGENT FIRE SYSTEM GENERAL INFORMATION**

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CAD File: VWPortland.DWG	ii	12/19/2014	
Drawn By: T. MOONEY			
Created on: 12/17/2014			
Designed by: T. MOONEY			
Checked by:			
Approved by:			
Project Lead: D. BOLDUC			
Scale: SCALE AS NOTED			



**FM-200 EQUIPMENT ARRANGEMENT - PLAN VIEW**

SCALE: 1/2 INCH = 1 FOOT



**FM-200 SYSTEM PIPING ISOMETRIC**

SCALE: NOT TO SCALE

**LEGEND - BILL OF MATERIALS**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	70-265	60 lb.(27 L) Container Assembly - Fill Capacity: 39 to 68 lbs. INCLUDES MOUNTING HARDWARE, GAUGE & IMPULSE VALVE
2	1	70-264	35 lb.(15 L) Container Assembly - Fill Capacity: 22 to 38 lbs. INCLUDES MOUNTING HARDWARE, GAUGE & IMPULSE VALVE
3	87	02-9844	HFC-227ea Factory Filled and Pressurized
4	2	70-279	Impulse Valve Operator (IVO) Kit
5	2	02-12533	Low Pressure Switch
6	1	80-063-2812	1" x 180 Degree Nozzle, Pre-Engineered
7	1	80-062-2210	3/4" x 180 Degree Nozzle, Pre-Engineered
8	2	10-063-1-R-1	SHP PRO Control System including: Red Enclosure 110 VAC
9	2	10-2204	CRM4, Relay Module (w/ mounting hardware) for SHP PRO Control System
10	2	10-2517	Wire Assembly, SHP PRO, 7/18 AH Battery
11	2	10-2190-1	Battery Assembly, 7AH, w/ wiring assembly (2 Batteries)
12	4	63-1029	i3 Photoelectric Detector & Base, 2-Wire
13	2	20-1839	Manual Release Station, Dual Action
14	2	10-1642	Keyed Abort Switch
15	2	10-2699	Agent Release Module - Service Disconnect
16	2	20-123-50	Wall Mount Selectable Horn/Strobe Red W/No Lettering GENTEX GEC3 Series 904-1318-002
17	2	20-1579	Weatherproof Wall Mount 75 CD Strobe With Red Lettering GENTEX WGES 904-1219-002
18	2	02-10105	Upon Device Activation "Exit" Sign
19	2	02-10106	Agent Abort "Push and Hold" Sign
20	2	02-10137	Agent "Release" Sign / Manual Release Station
21	2	02-10138	Upon Device Activation "Do Not Enter" Sign
22	2	02-10139	Caution "Do Not Enter" Sign

**AGENT CONTAINER SCHEDULE**

EQUIPMENT ROOM						
Container Name	Agent Quantity	Empty Weight	Full Weight	Floor Area	Floor Loading	Part Number
60 lb. Cylinder Upright	55.0 lbs.	52.0 lbs.	107.0 lbs.	.63 sq. ft.	190 lbs./ sq. ft.	70-265

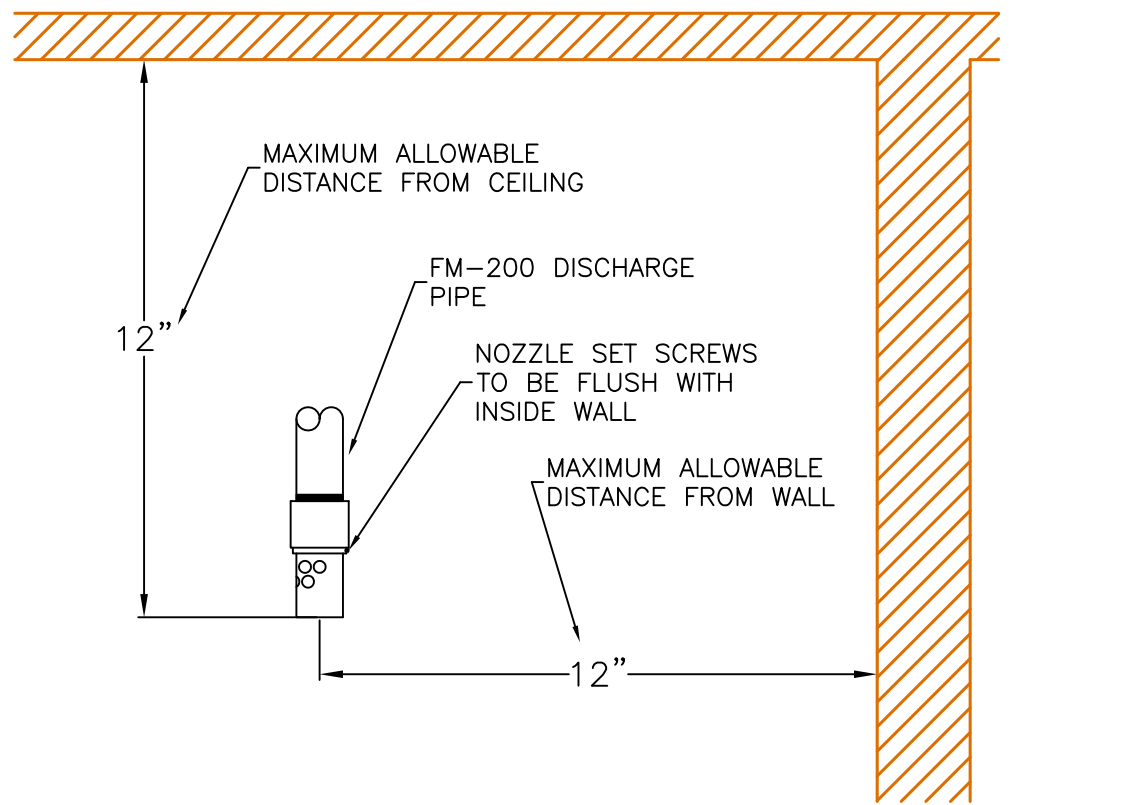
GENERATOR SHELTER						
Container Name	Agent Quantity	Empty Weight	Full Weight	Floor Area	Floor Loading	Part Number
35 lb. Cylinder Upright	32.0 lbs.	31.0 lbs.	63.0 lbs.	.27 sq. ft.	256 lbs./ sq. ft.	70-264

**NOZZLE CODE SCHEDULE**

EQUIPMENT ROOM			
Nozzle Number	Pipe Size	Style	Part Number
E1-N1	1"	180 Deg.	80-063-2812

GENERATOR SHELTER			
Nozzle Number	Pipe Size	Style	Part Number
E1-N1	3/4"	180 Deg.	80-062-2210

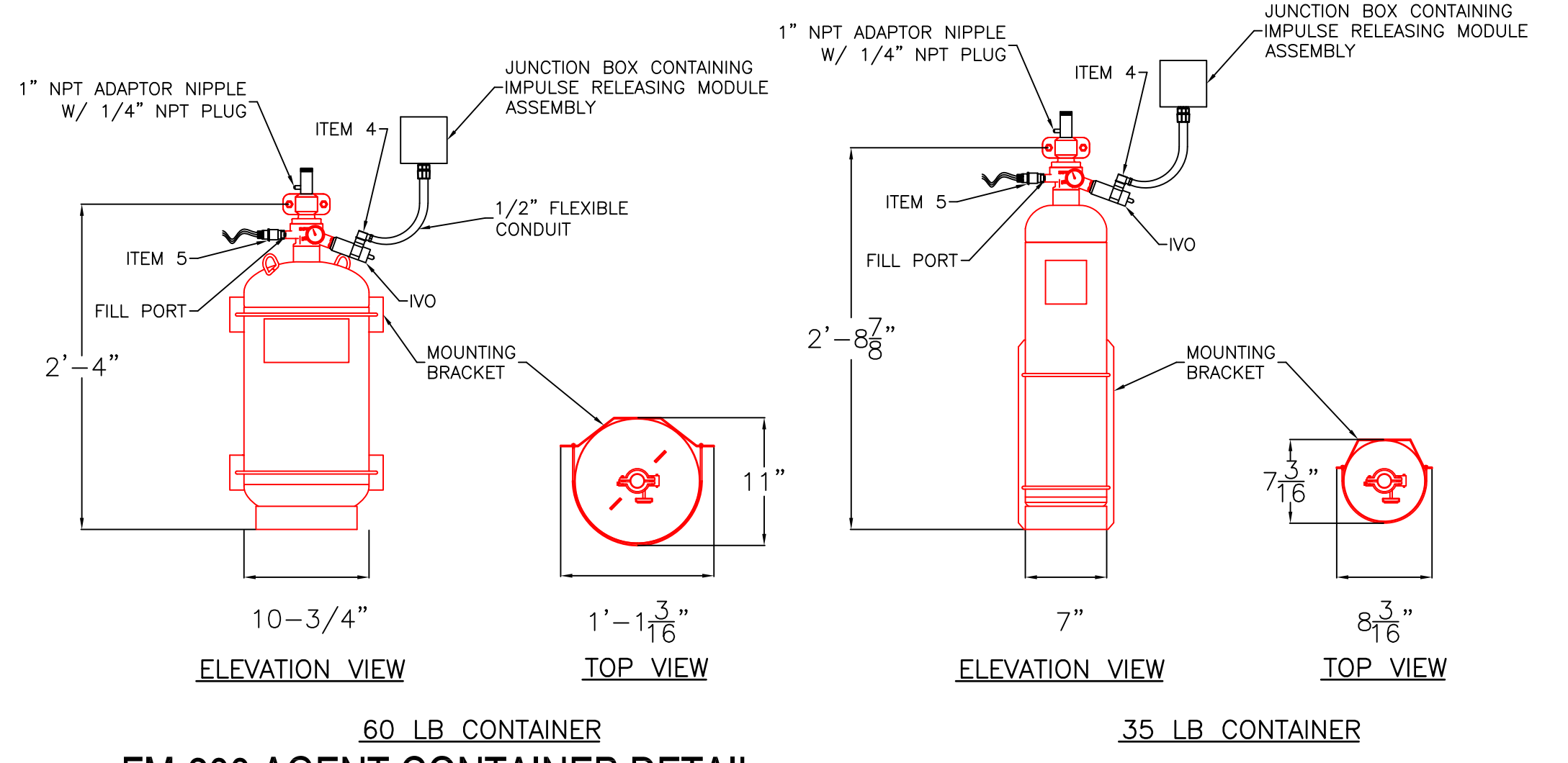


**FM-200 NOZZLE INSTALLATION DETAIL**

SCALE: NOT TO SCALE

**180 DEG. NOZZLE INSTALLATION NOTES**

1. THE NOZZLES SHALL BE LOCATED AS CLOSE TO THE CENTER LINE OF A PERIMETER WALL AS POSSIBLE.
2. THE NOZZLES MUST BE LOCATED SO THAT THERE IS NO OBSTRUCTION TO THE AGENT DISCHARGE PATTERN. THEY ARE INSTALLED VERTICALLY AND CAN FACE EITHER UP OR DOWN.
3. VERIFY THAT THE SET SCREWS FOUND ON THE SIDE OF THE NOZZLE ARE IN PLACE AFTER INSTALLATION. FAILURE TO HAVE THE SET SCREWS IN PLACE WILL AFFECT THE AGENT DISTRIBUTION AND POSSIBLY THE SYSTEM'S ABILITY TO SUPPRESS THE FIRE.

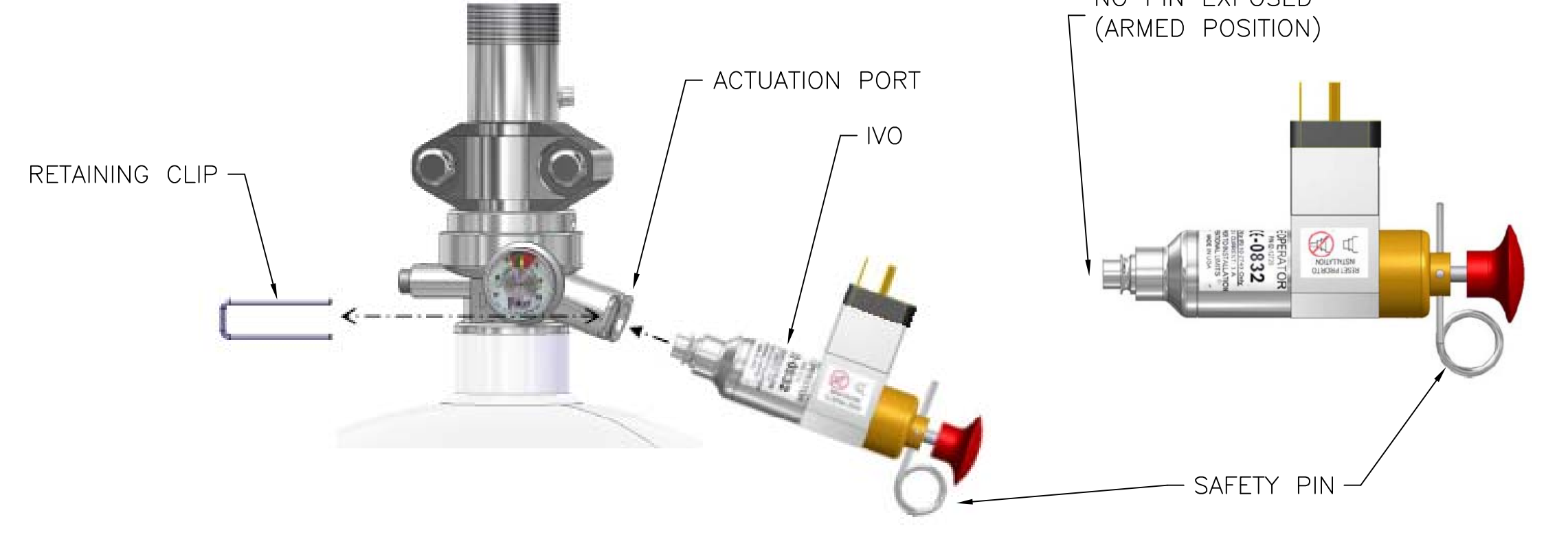


**FM-200 AGENT CONTAINER DETAIL**

SCALE: NOT TO SCALE

**AGENT CONTAINER INSTALLATION NOTES**

1. CONTAINER BRACKETS MUST BE MOUNTED SECURELY TO SOLID LOAD BEARING SURFACES THAT WILL SUPPORT THE CONTAINER.
2. CONTAINER(S) SHOULD BE LOCATED IN CLEAN, DRY, AND RELATIVELY VIBRATION-FREE AREAS. AVOID HIGH TRAFFIC AREAS WHERE PHYSICAL DAMAGE OR TAMPERING IS MORE LIKELY. CONTAINERS SHOULD NEVER BE MOUNTED WHERE THE CONTAINER COULD POTENTIALLY BE SPLASHED WITH, OR SUBMERGED IN ANY LIQUID.
3. DO NOT LOCATE CONTAINERS WHERE THEY WOULD BE SUBJECT TO PHYSICAL DAMAGE, EXPOSURE TO CORROSIVE CHEMICALS, OR HARSH WEATHER CONDITIONS.
4. CONTAINER LOCATIONS MUST BETWEEN 32 DEG F (0 DEG. C) TO 130 DEG. F (54.4 DEG. C).
5. WHEN INSTALLING THE LOW PRESSURE SWITCH (LPS) OBSERVE THE FOLLOWING PROCEDURES:
  - 5.1. PRIOR TO ASSEMBLY, LUBRICATE THE LPS O-RING WITH MOLYCOAT 55 OR EQUAL. USE CARE NOT TO GET LUBRICANT INTO THE PRESSURE PORT. DO NOT APPLY TEFLON TAPE TO THE LPS THREADS. DO NOT CROSS THREAD THE LPS DURING INSTALLATION.
  - 5.2. REMOVE AND RETAIN THE PLUG FROM THE FILL PORT.
  - 5.3. REMOVE THE RUBBER CAP AND SCREW IN THE LPS (HAND TIGHT) UNTIL THE SWITCH BOTTOMS OUT. SCREWING THE SWITCH INTO THIS POINT WILL OPEN AN INTERNAL CHECK VALVE AND APPLIES PRESSURE TO THE SWITCH. NO TOOLS ARE REQUIRED TO INSTALL THE LPS.
  - 5.4. LEAK CHECK AROUND THE PORT USING SNOOP LEAK TEST FLUID OR EQUIVALENT.
  - 5.5. WHEN INSTALLING THE CONDUIT CONNECTOR TO THE LPS, SECURE "HAND TIGHT". OVER TIGHTENING MAY CAUSE DAMAGE TO THE LPS OR TO THE IMPULSE VALVE FILL PORT THREADS



**IMPULSE VALVE OPERATOR DETAIL**

**IMPULSE VALVE OPERATOR INSTALLATION**

1. THE IMPULSE VALVE OPERATOR (IVO) SHALL BE THE LAST ITEM INSTALLED BEFORE THE SYSTEM IS PLACED INTO OPERATION. ENSURE THE IVO IS ARMED AND THE SAFETY PIN IS IN PLACE BEFORE INSTALLING THE IVO ONTO THE CONTAINER.
2. INSTALL THE WIRE LEAD CONNECTOR TO THE IVO AND SECURE IT WITH THE PROVIDED SET SCREW.
3. REMOVE THE RETAINING CLIP AND PLASTIC PLUG FROM THE IMPULSE VALVE ACTUATION PORT.
4. INSERT THE IVO INTO THE IMPULSE VALVE ACTUATION PORT AND RE-INSERT THE RETAINING CLIP.

**NOTES:** THE INFORMATION AND GRAPHIC DEPICTIONS SHOWN ON THIS SHEET ARE DERIVED FROM INFORMATION CONTAINED IN A DOCUMENT TITLED "FIKE CLEAN AGENT SYSTEM W/ IMPULSE TECHNOLOGY HFC-227EA AGENT DOT / TC CONTAINERS EQUIPMENT, DESIGN & SERVICE MANUAL" FIKE PART NUMBER 06-433 (REV. 4/ NOVEMBER, 2011)  
 FOR ADDITIONAL TECHNICAL ASSISTANCE CONTACT FIKE, 704 SOUTH 10TH STREET P.O. BOX 610, BLUE SPRINGS, MISSOURI 64013. TELEPHONE 1-816-229-3405.

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 EQUIPMENT ARRANGEMENT & DETAIL

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SHEET :

03

# FM-200 (HFC-227ea) Quantity Calculation

## Protected Hazard: Equipment Room

Determine Volume of Protected Hazard (Length x Width x Height)

Length (ft.)	Width (ft.)	Height (ft.)	=	Volume
15.79	10.67	9.5	=	1600.553 cu. ft.

Determine Agent Quantity (Volume x Flooding Factor)

Volume:	1601 cu. ft. (rounded)
Concentration:	7 %
Flooding Factor @ 70 deg. F:	0.0341 From Flooding Factors Table

**Agent Quantity:** 55 lbs. (Rounded up to nearest pound)

## Protected Hazard: Generator Shelter

Determine Volume of Protected Hazard (Length x Width x Height)

Length (ft.)	Width (ft.)	Height (ft.)	=	Volume
9.17	10.67	9.5	=	929.5171 cu. ft.

Determine Agent Quantity (Volume x Flooding Factor)

Volume:	930 cu. ft. (rounded)
Concentration:	7 %
Flooding Factor @ 70 deg. F:	0.0341 From Flooding Factors Table

**Agent Quantity** 32 lbs. (Rounded up to nearest pound)

### PRE-ENGINEERED CONTAINER SIZE AND FILL RANGE

CONTAINER SIZE	CONTAINER PART NUMBER	MINIMUM FILL RANGE	MAXIMUM FILL RANGE	FILL INCREMENTS	MOUNTING POSITION	VALVE SIZE
35 LB.	70-264	22 LBS.	38 LBS.	1 LB.	UPRIGHT - HORIZONTAL	1 INCH
60 LB.	70-265	39 LBS.	68 LBS.	1 LB.	UPRIGHT - HORIZONTAL	1 INCH

### PRE-ENGINEERED PIPING NETWORK LIMITATIONS - SINGLE NOZZLE SYSTEMS

CONTAINER SIZE & FILL RANGE	PIPE SIZE	MAXIMUM PIPE LENGTH	ELBOWS INCLUDED IN MAXIMUM PIPE LENGTH	DEDUCT FOR EACH ADDITIONAL ELBOW OVER 8	180° NOZZLE PART NUMBER
35 LB. (22-38)	3/4 INCH	45 FEET	8	2.2 FEET	80-062-2210
60 LB. (39-68)	1 INCH	45 FEET	8	2.8 FEET	80-063-2812

**NOTES:** THE DESIGN INFORMATION AND SPECIFICATIONS ON THIS SHEET ARE DERIVED FROM INFORMATION CONTAINED IN A DOCUMENT TITLED "FIKE CLEAN AGENT SYSTEM W/ IMPULSE TECHNOLOGY HFC-227EA AGENT DOT / TC CONTAINERS EQUIPMENT, DESIGN & SERVICE MANUAL" FIKE PART NUMBER 06-433 (REV. 4/ NOVEMBER, 2011)  
FOR ADDITIONAL TECHNICAL ASSISTANCE CONTACT FIKE, 704 SOUTH 10TH STREET P.O. BOX 610, BLUE SPRINGS, MISSOURI 64013. TELEPHONE 1-816-229-3405.

# PRE-ENGINEERED DESIGN & INSTALLATION NOTES

THE DESIGN OF THE SYSTEM IS BASED ON PRE-ENGINEERED DESIGN CRITERIA SET FORTH IN THE ORIGINAL EQUIPMENT MANUFACTURER'S UL LISTED DESIGN, INSTALLATION, AND MAINTENANCE MANUAL. THE DESIGN LIMITATIONS AND PERFORMANCE HAVE BEEN TESTED BY THE ORIGINAL EQUIPMENT MANUFACTURER.

AGENT QUANTITY CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE DESIGN INSTRUCTIONS FOUND WITHIN THE ORIGINAL EQUIPMENT MANUFACTURER'S UL LISTED DESIGN, INSTALLATION, AND MAINTENANCE MANUAL.

THE SYSTEM DISCHARGE PIPE NETWORK MUST BE INSTALLED IN ACCORDANCE WITH THE PRE-ENGINEERED PIPING NETWORK LIMITATIONS TABLE FOUND ON THIS SHEET IN ORDER TO COMPLY WITH THE PRE-ENGINEERED LISTING OF THE INSTALLED EQUIPMENT.

THE DISCHARGE NOZZLE TO BE INSTALLED ON EACH FM-200 SYSTEM MUST BE THE PART NUMBER FOUND IN THE PRE-ENGINEERED PIPING NETWORK LIMITATIONS TABLE AND MUST CORRESPOND WITH THE AGENT CYLINDER BEING INSTALLED.

# 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. FOR FIKE CLEAN AGENT SYSTEM, W/ 360 PSIG (24.8 BAR) WORKING PRESSURE, USE A MINIMUM PIPING DESIGN PRESSURE OF 500 PSIG (34.4 BAR) AT 70°F (21°C).

CAUTION: CAST IRON PIPE, STEEL PIPE CONFORMING TO ASTM A120, OR NON METALLIC 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 CONFIGURATIONS UTILIZING THREADED, WELDED OR GROOVED END CONNECTIONS:

PIPE SCHEDULE	NPS PIPE SIZE	WALL THICKNESS	GRADE /TYPE					
			A-106 C	A-53B A-106B	A-53	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	✓	✓	✓	✓	✓	✓

# PIPE 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 TABLE BELOW:

PIPE SIZE (IN)	DISTANCE BETWEEN SUPPORTS (FEET)	ROD DIAMETER (IN.)	NOTE:
3/8	7	3/8	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 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 DEG. 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.
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	

# FITTING MATERIALS

FITTING SIZE	FITTING CLASS
UP TO 3" NPT	CLASS 300 MALLEABLE OR DUCTILE IRON
ALL PIPE SIZES	CLASS 300 FLANGED

NOTE: ALL GROOVED FITTINGS MUST BE UL LISTED AND CONFORM TO THE PRESSURE REQUIREMENTS OUTLINED IN NFPA 2001, LATEST EDITION. CAST IRON FITTINGS ARE NOT ACCEPTABLE.

# 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 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 CHANGE AT A COUPLING	WHEN THE CHANGE IN PIPE SIZE IS 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.

### System Information:

FIKE PRE-ENGINEERED FM-200 SYSTEMS WITH SHP PRO CONTROL & RELEASING PANELS PROTECTING AN EQUIPMENT ROOM & GENERATOR SHELTER

### Client/Location:

EAST COAST COMMUNICATIONS  
VERIZON WIRELESS  
23 CHURCH AVENUE  
PEAKS ISLAND, ME 04108

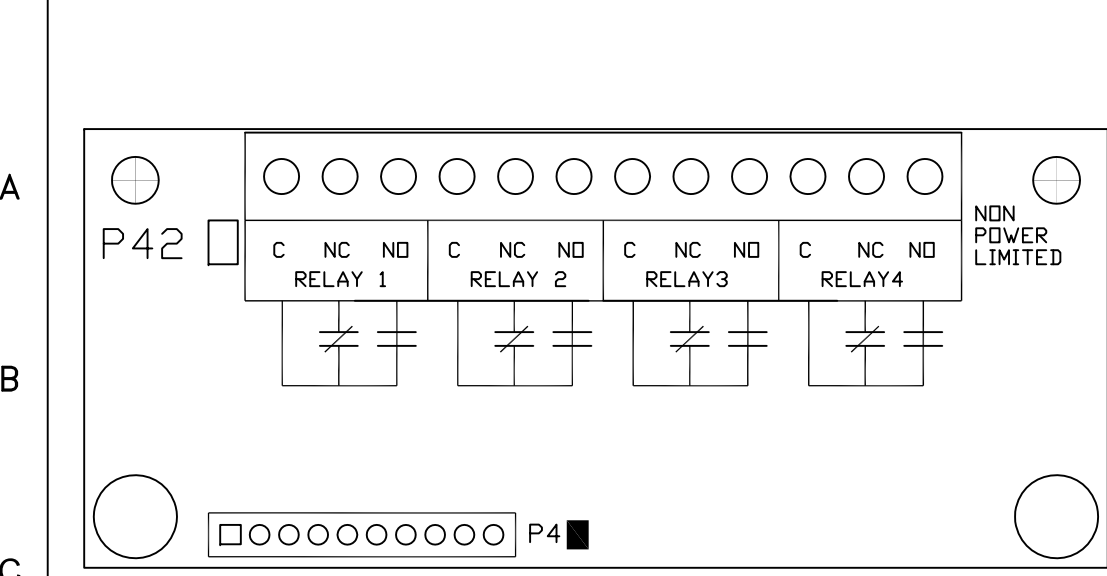


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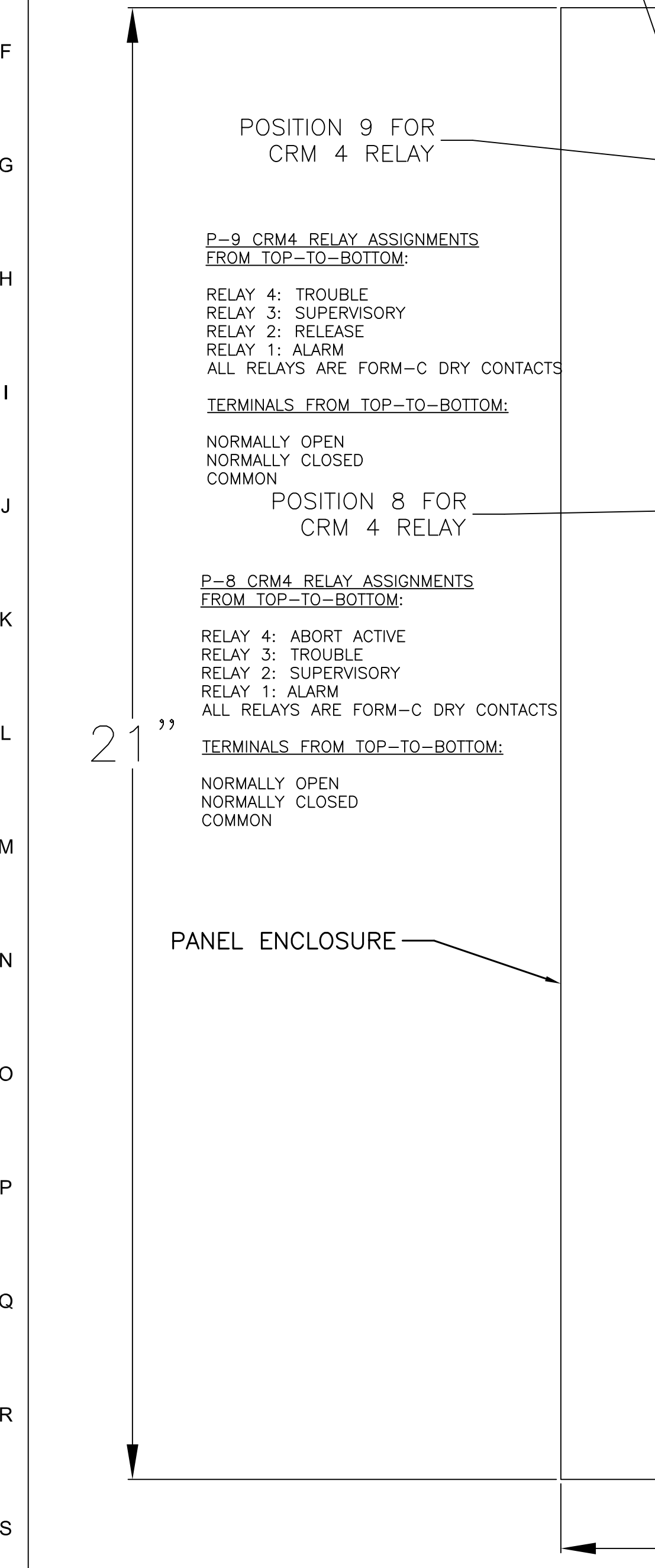
FIKE FM-200 CLEAN AGENT FIRE SYSTEM QUANTITY CALCULATIONS & PIPE SPECIFICATIONS

Proj. no.:	Revisions:	Date:	SHEET :  04
CAD File: VWPorland.DWG	ii		
Drawn By: T. MOONEY			
Created on: 12/17/2014			
Designed by: T. MOONEY			
Checked by:			
Approved by:			
Project Lead: D. BOLDUC Scale: SCALE AS NOTED			



**CRM-4 RELAY MODULE DETAIL**

HAND-WRITABLE BLOCK THAT IDENTIFYS PANEL APPLICATION  
 1 = SUPPRESSION  
 2 = SPRINKLER ONLY



**TYPICAL SHP PRO SYSTEM CONTROL PANEL DETAIL**

**NOTES:** THE DRAWINGS AND INFORMATION FOUND ON THIS SHEET ARE DERIVED FROM THE FIKE DOCUMENT TITLED "SHP PRO PRODUCT MANUAL CONVENTIONAL FIRE ALARM/SUPPRESSION SYSTEM" MANUAL PART NUMBER 06-297, REVISION 4, 03/02/2010.

**System Information:**  
 FIKE PRE-ENGINEERED FM-200 SYSTEMS WITH SHP PRO CONTROL & RELEASING PANELS PROTECTING AN EQUIPMENT ROOM & GENERATOR SHELTER

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**FIKE FM-200 CLEAN AGENT FIRE SYSTEM PANEL WIRING & PROGRAMMING DETAIL**

Proj. no.:	Revisions:	Date:	SHEET :
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Created on: 12/17/2014			
Designed by: T. MOONEY			
Checked by:			05
Approved by:			
Project Lead: D. BOLDUC			
Scale: SCALE AS NOTED			

**DETECTION & CONTROL NOTES**

1. ALL DETECTION, CONTROL, AND NOTIFICATION SHALL BE MANUFACTURED OR PROVIDED BY FIKE, INC. 704 SOUTH 10TH STREET, BLUE SPRINGS, MO 64015 USA.
2. THE FM-200 SYSTEM SHALL BE CONTROLLED BY A SHP PRO CONTROL SYSTEMS. THE PANEL SHALL HAVE SUFFICIENT RELAYS TO CONTROL PILOT POWER TO ANY REQUIRED PERIPHERAL DEVICES. THESE DEVICES MAY INCLUDE: HVAC SHUTDOWN, AIR HANDLING DUCT SHUTDOWN, AND EMERGENCY POWER SHUTDOWN.
3. IN THE EVENT OF THE FIKE FM-200 SYSTEM ACTIVATION, ALL HVAC EQUIPMENT ASSOCIATED WITH THE PROTECTED ENCLOSURE AND EXPOSURE AREAS IMMEDIATELY SURROUNDING THE ENCLOSURE SHALL AUTOMATICALLY SHUTDOWN. THIS EQUIPMENT SHALL RESTART BY MANUAL MEANS.
4. ACTIVATION OF THE FIKE FM-200 SYSTEM SHALL ACT AS AN INITIATION DEVICE FOR THE GENERAL BUILDING ALARM SYSTEM.
5. SHEET 03 REPRESENTS RECOMMENDED PLACEMENT OF DETECTORS. PLACEMENT MAY BE AFFECTED BY LIGHTING INSTALLED IN THE CEILING, EQUIPMENT INSTALLED IN THE CEILING AND/OR HVAC DUCT OPENINGS. IN THESE INSTANCES, THE SMOKE DETECTOR(S) MUST BE RELOCATED TO OPTIMIZE DETECTOR PERFORMANCE.

**WIRING NOTES**

1. CONDUCTORS FOR THE N.A.C. CIRCUIT SHALL BE 18, 16, OR 14 AWG, SOLID COPPER.
2. CONDUCTORS ON THE N.A.C. CIRCUIT SHALL BE COLOR CODED AS FOLLOWS: RED FOR POSITIVE (+) CURRENT AND BLACK FOR RETURN (-) CURRENT.
3. CONDUCTORS ON THE INPUT CIRCUITS SHALL BE COLOR CODED AS FOLLOWS: WHITE FOR POSITIVE (+) CURRENT AND BLACK FOR RETURN (-) CURRENT.
4. ALL CONDUCTORS SHALL BE NUMBERED AS INDICATED ON THIS SHEET.
5. ALL FIRE ALARM CIRCUITS AND EQUIPMENT CONTROL WIRING ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN DEDICATED RACEWAYS, CONDUITS, ETC.
6. CONDUCTORS MAY BE INSTALLED INSIDE BUILDING FINISHES. EXPOSED CONDUCTORS ARE TO BE INSTALLED IN CONDUIT.

**POWER CALCULATIONS**

**Table 1**  
**NORMAL (STANDBY) OPERATION**

P/N	Quan.	x	mA	Totals
10-2452 Controller	1	x	135	= 135
Auxiliary Output	0	x	24	= 0
10-2204 CRM4 Module	1	x	0	= 0
<b>TOTAL NORMAL STANDBY CURRENT (mA) =</b>				<b>135</b>

**Note:** Controller Current includes power for the maximum number of two wire detectors.

**Table 2**  
**ALARM OPERATION**

P/N	Quan.	x	Amps	Totals
10-2452 Controller	1	x	0.135	= 0.135
10-2204 CRM4 Module (@ Relay)	4	x	0.1	= 0.4
20-123-116 Bell	0	x	0.016	= 0
20-123-50 Horn/Strobe	1	x	0.208	= 0.208
20-123-46 Strobe	1	x	0.18	= 0.18
<b>TOTAL ALARM CURRENT DRAW (Amps) =</b>				<b>0.923</b>

**Note:** Controller Current includes power for 6 Impulse Release Modules.

**AMPERE - HOUR CALCULATIONS**

Total Standby Current	Standby Time	Totals
0.135	24 (24.00.00 Hours)	3.24
Total Alarm Current Draw	Req. Alarm Time	Totals
0.923	10 min = 10	0.249
<b>Sum of Standby Current &amp; Alarm Current Draw =</b>		<b>3.489</b>
<b>Multiply By Derating Safety Margin Factor x</b>		<b>1.2</b>
<b>Battery Size, Total Ampere Hours Required (Rounded Up) =</b>		<b>4.2</b>
<b>DESIGNED BATTERY SIZE (Ampere-Hours) TO BE INSTALLED =</b>		<b>7</b>

**VOLTAGE DROP CALCULATIONS**

VOLTAGE DROP CALCULATIONS FOR SHP PRO NOTIFICATION CIRCUITS (CIRCUIT NOMINAL VOLTAGE OF 24 VDC)

CIRCUIT	Wire Size/Type	Circuit Current	Ohms per 1000 ft.	Wire Length (One way - ft.)	Total Ohms Resistance	Volts at EOL	Voltage Drop	% Drop
AUD #1	14 awg solid copper	0.208	3.07	300	0.9210	23.80843	0.191568	0.80%
AUD #2	14 awg solid copper	0.18	3.07	300	0.9210	23.83422	0.16578	0.69%

Should be less than 10% drop

**WIRE TERMINATION SCHEDULE**

**SHP PRO PANEL WIRING TERMINATION SCHEDULE**

Conductor Number	Color	Type	Name	Origin	Destination
301	White	18,16,14 awg	Detect #1 (+)	P3-1	Photoelectric Detector (+) Zone 1
302	Black	18,16,14 awg	Detect #1 (-)	P3-2	Photoelectric Detector (-) Zone1
304	White	18,16,14 awg	Detect #2 (+)	P3-4	Photoelectric Detector (+) Zone 2
305	Black	18,16,14 awg	Detect #2 (-)	P3-5	Photoelectric Detector (-) Zone2
306	White	18,16,14 awg	Switch #1 (+)	P3-6	Manual Release Station
307	Black	18,16,14 awg	Switch #1 (-)	P3-7	Manual Release Station
309	White	18,16,14 awg	Switch #2 (+)	P3-9	Suppression Abort Station
310	Black	18,16,14 awg	Switch #2 (-)	P3-10	Suppression Abort Station
311	White	18,16,14 awg	Switch #3 (+)	P3-11	Cylinder Low Pressure Switch
312	Black	18,16,14 awg	Switch #3 (-)	P3-12	Cylinder Low Pressure Switch
402	Black	18,16,14 awg	Aux 24 (-)	P4-2	Suppression Disconnect
403	Red	18,16,14 awg	Aux 24 (+) Non- Resettable	P4-3	Suppression Disconnect
501	Red	18,16,14 awg	Audible #1 (+)	P5-1	Horn (+)
502	Black	18,16,14 awg	Audible #1 (-)	P5-2	Horn (-)
504	Red	18,16,14 awg	Audible #2 (+)	P5-4	Strobes (+)
505	Black	18,16,14 awg	Audible #2 (-)	P5-5	Strobes (-)
509	Red	18,16,14 awg	Agent Release (+)	P5-9	I/O Release Module Term. 1 In (+)
510	Black	18,16,14 awg	Agent Release (-)	P5-10	I/O Release ModuleTerm. 2 In (-)

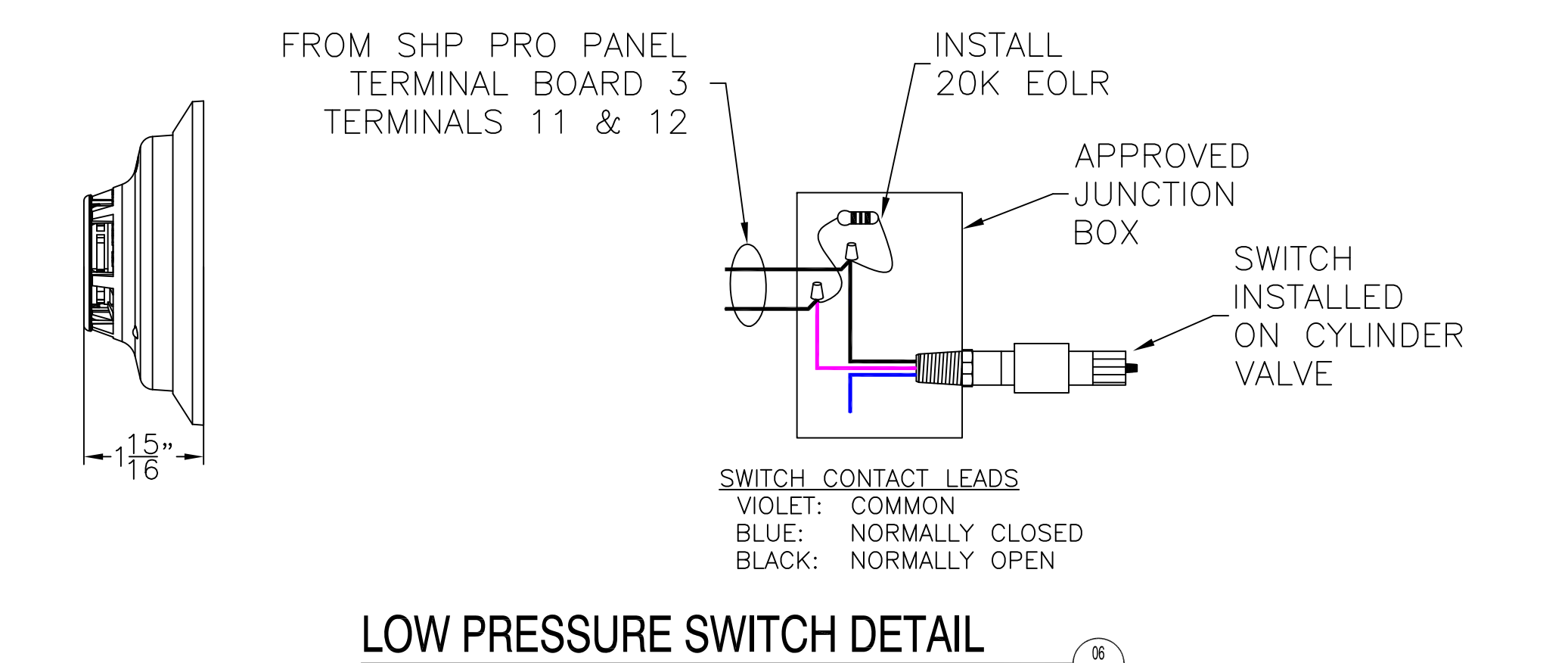
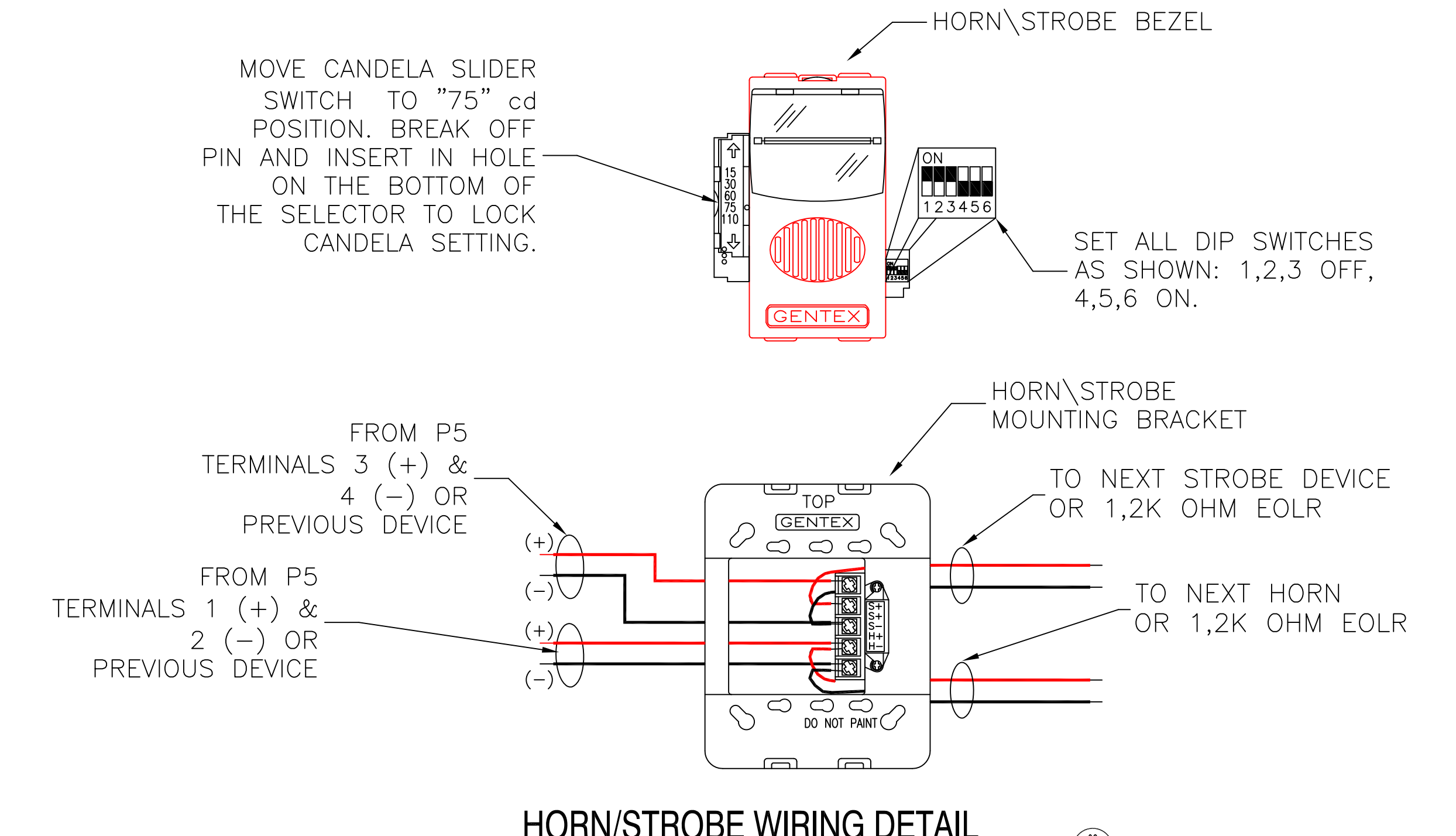
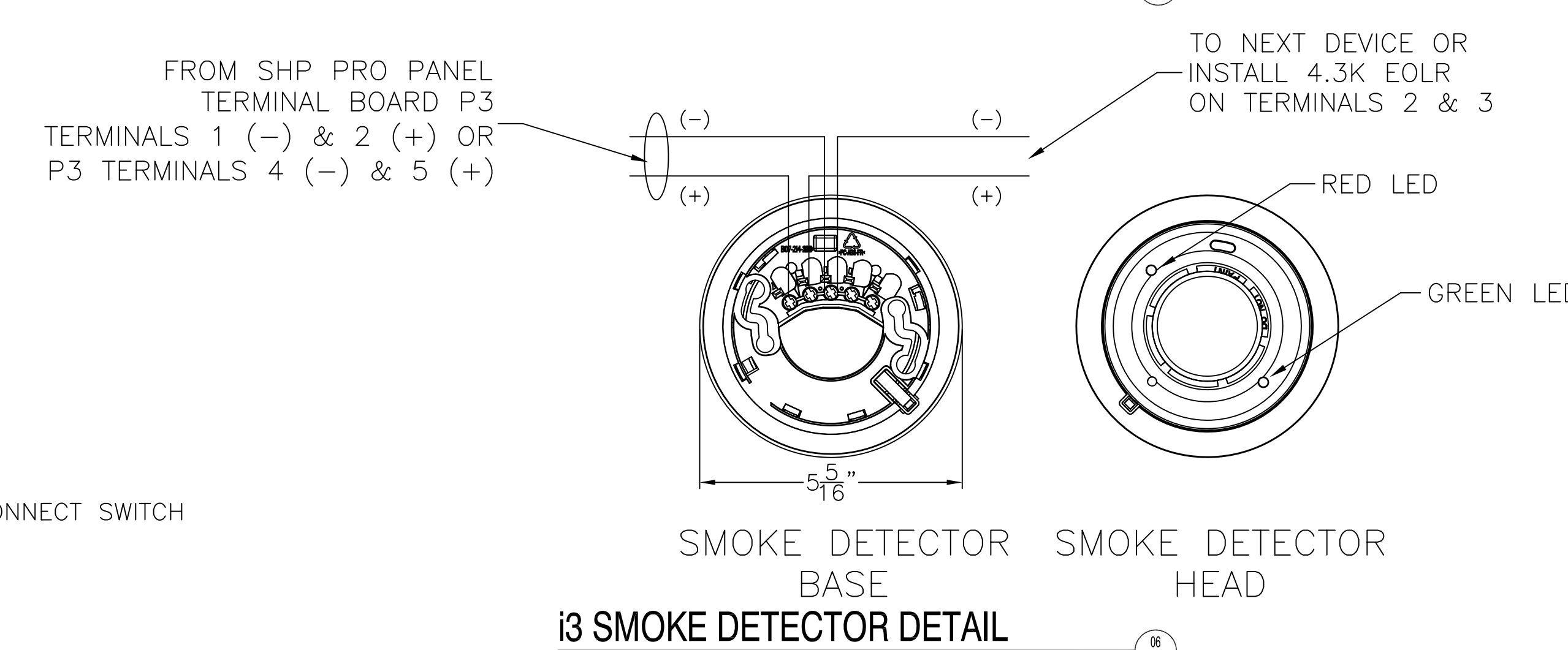
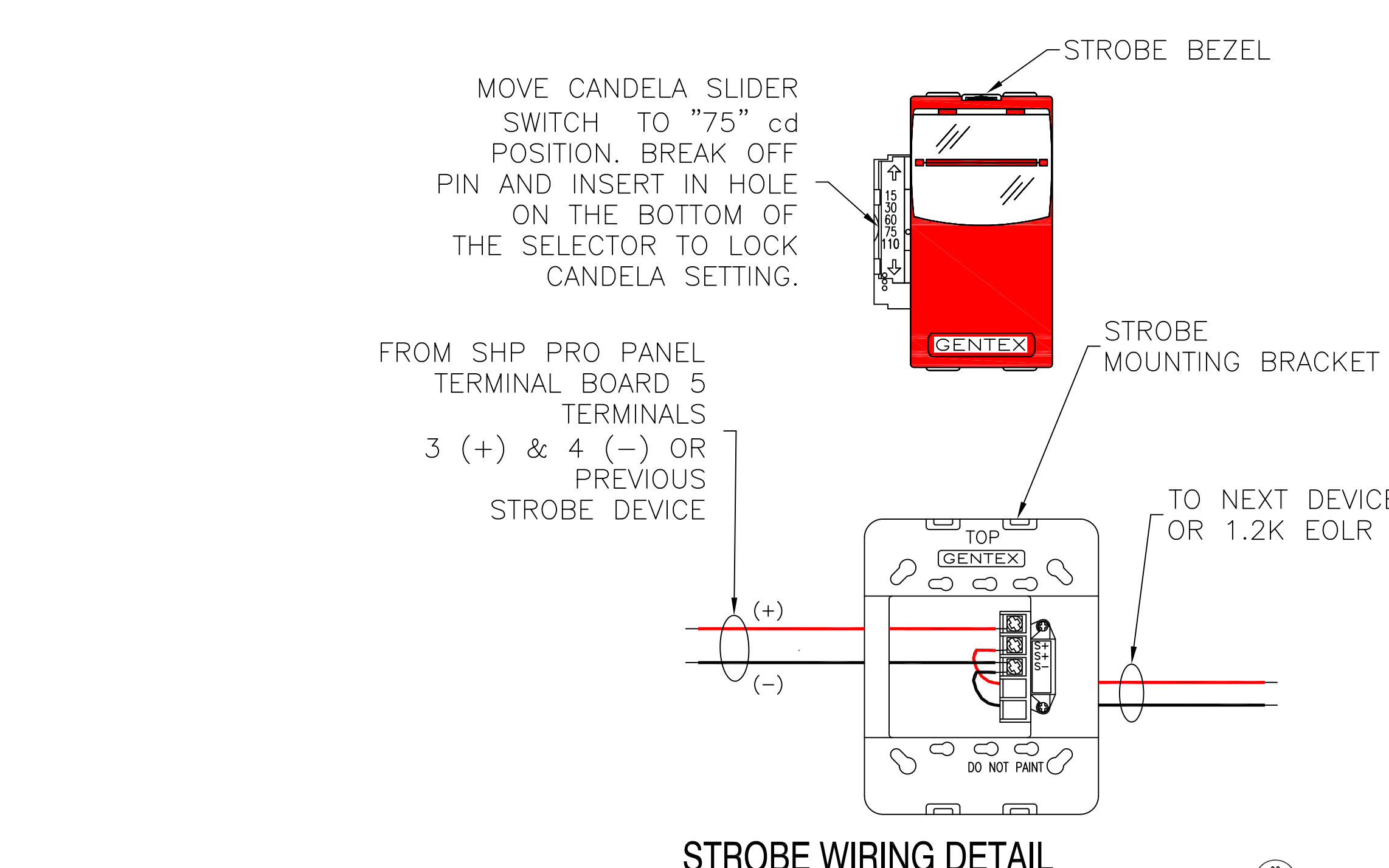
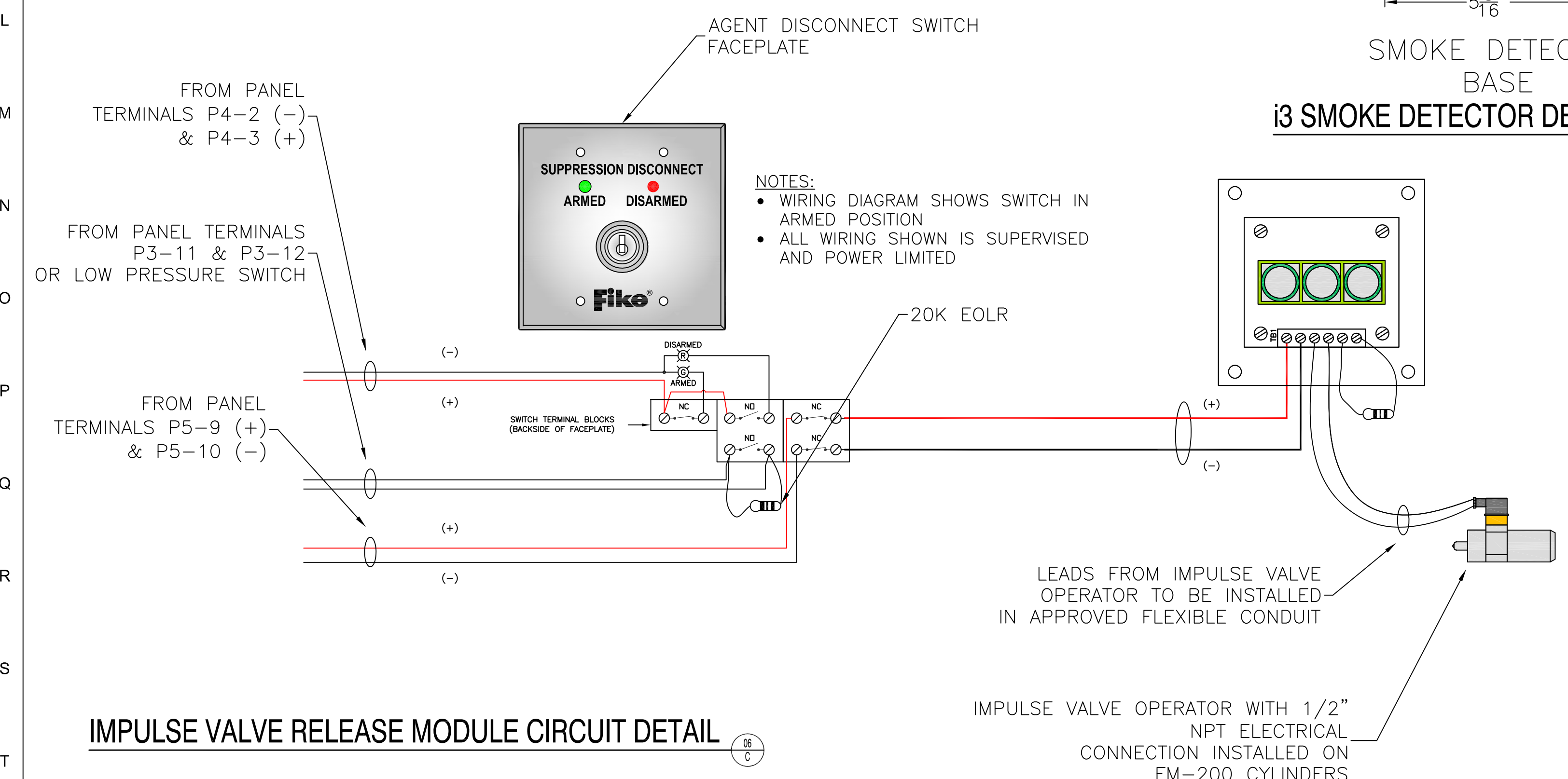
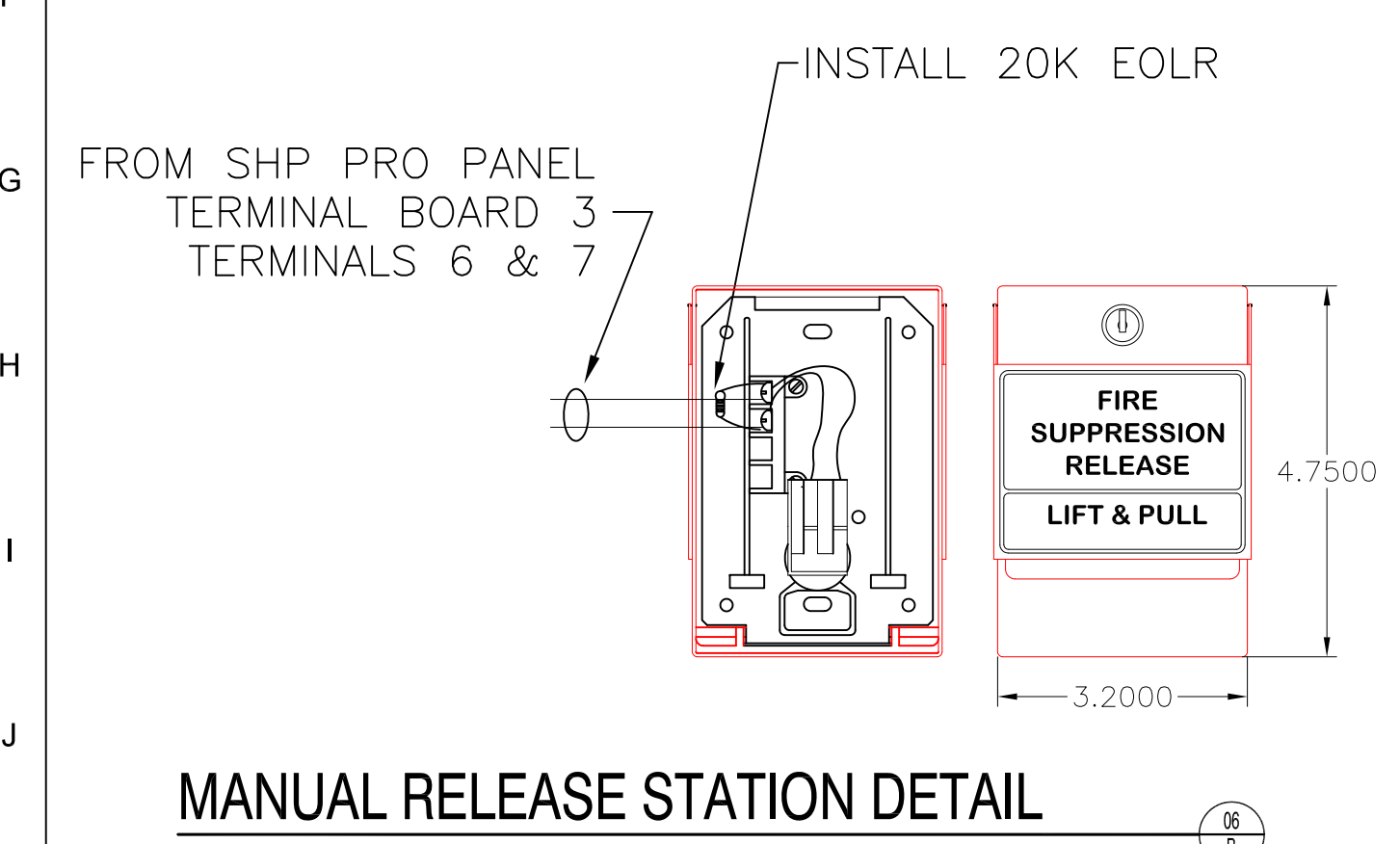
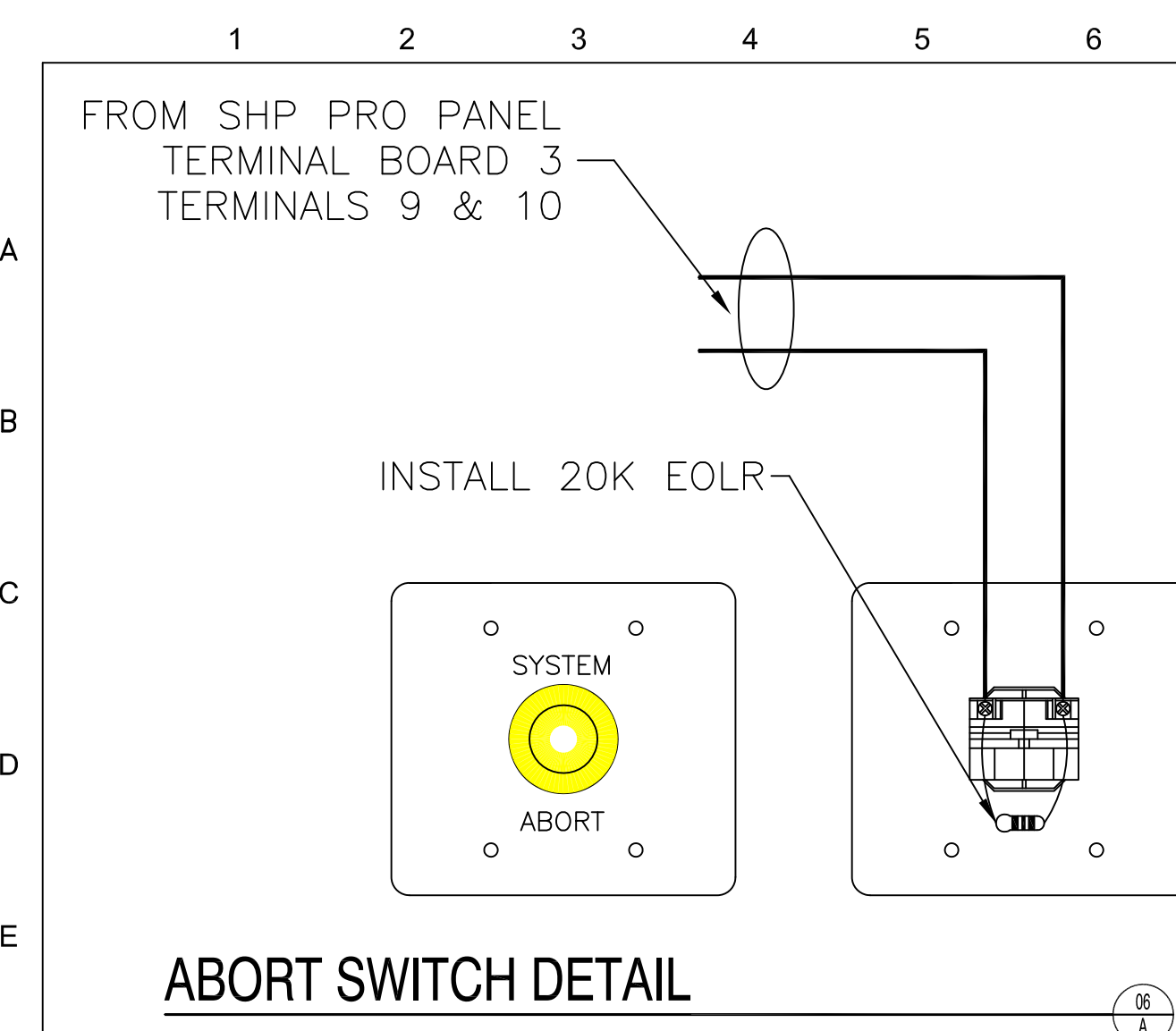
**PANEL INSTALLATION NOTES:**

1. THE SHP PRO PANELS SHALL BE INSTALLED IN AN ENVIRONMENT WITH NOMINAL ROOM TEMPERATURES OF 15° - 27° C/ 60° - 80° F AND A RELATIVE HUMIDITY OF NO MORE THAN 85%.
2. POWER-LIMITED AND NON-POWER-LIMITED CONDUCTORS SHALL BE SEPARATED AS DETAILED IN THESE DRAWINGS. BUNDLE, LACE, AND TRAIN CONDUCTORS TO THE PANEL TERMINAL POINTS WITH NO EXCESS.
3. ALL CONDUCTORS SHALL BE SIZED, COLOR CODED AND NUMBERED AT THE TERMINATION POINTS IN ACCORDANCE WITH THE SHP PRO WIRING TERMINATION SCHEDULE ON THIS SHEET.
4. ALL PENETRATIONS THROUGH WALLS FOR CONDUITS, ETC. SHALL BE SEALED WITH APPROVED FIRE-STOPPING MATERIAL.
5. EACH SHP PRO FM-200 SYSTEM CONTROL ALARM PANEL SHALL BEAR A LABEL STATING: "FM-200 FIRE SYSTEM CONTROL PANEL".
6. PROGRAMMING OF THE SHP PRO PANEL SHALL BE PERFORMED BY INTERSTATE FIRE PROTECTION, A FACTORY AUTHORIZED DISTRIBUTOR AND INSTALLER OF FIKE, INC. PRODUCTS.
7. UPON COMPLETION OF INSTALLATION EACH INPUT DEVICE AND OUTPUT APPLIANCE SHALL BE TESTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO VERIFY PROPER OPERATION.

- 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 "to ch" ARE PROVIDED FOR SHIELD TERMINATIONS IF SHIELDED CABLES ARE USED.

**SW4 CONFIGURATION SWITCH SETTINGS**

S1	OFF	CLEAN AGENT
S2	OFF	
S3	OFF	TROUBLE RELAY - NO DELAY
S4	ON	AUDIBLE OPTION 5
S5	OFF	
S6	OFF	GENTEX - SYNC. PROTOCOL
S7	ON	PRE-DISCHARGE DELAY 30 SECONDS
S8	OFF	
S9	OFF	ABORT - TYPE 1 FOR AGENT RELEASE OUTPUT ONLY.
S10	ON	
S11	OFF	AGENT RELEASE MODULE
S12	ON	CROSS-ZONED DETECTION



**JUNCTION BOX REQUIREMENT**

QTY.	DEVICE	BACK BOX REQUIREMENT
2	i3 Photo Smoke Detector	4" Square or Octagonal Back Box
2	Manual Release Station	Single Gang Back Box
2	Suppression Abort Station	4" Square Back Box
2	Suppression Disconnect	4" Square x 2-1/8" Deep Back Box
2	Horn/Strobe, Strobe	Single Gang Back Box
2	Low Pressure Switch	Single Gang Back Box
2	Impulse Release Module	4" Square x 2-1/8" Deep Back Box w/ Flexible Conduit

**NOTES:**

1. DEVICE BACK-BOX REQUIREMENTS CAN BE FOUND IN THE INSTRUCTION SHEET IN THE DEVICE PACKAGING.
2. ONLY THE DEVICES SPECIFIED IN THESE DRAWINGS MAY BE USED IN THIS INSTALLATION.
3. WIRING AND DEVICE INSTALLATION SHALL CONFORM TO THE FOLLOWING:
  - 3.1. THE DEVICE MANUFACTURER'S INSTRUCTIONS,
  - 3.2. NFPA 70 - NATIONAL ELECTRICAL CODE - 2011 EDITION,
  - 3.3. NFPA 72 - NATIONAL FIRE ALARM CODE - 2013 EDITION,
  - 3.4. NFPA 2001 STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS - 2012 EDITION,
  - 3.5. STATE AND LOCAL FIRE PREVENTION CODES.

**System Information:**

FIKE PRE-ENGINEERED FM-200 SYSTEMS  
WITH SHP PRO CONTROL & RELEASING  
PANELS PROTECTING AN EQUIPMENT  
ROOM & GENERATOR SHELTER

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FIKE FM-200 CLEAN AGENT FIRE SYSTEM  
DEVICE WIRING DETAIL

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**SHEET :**

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