FIRE ALARM OPERATION MATRIX

GENERAL NOTES:

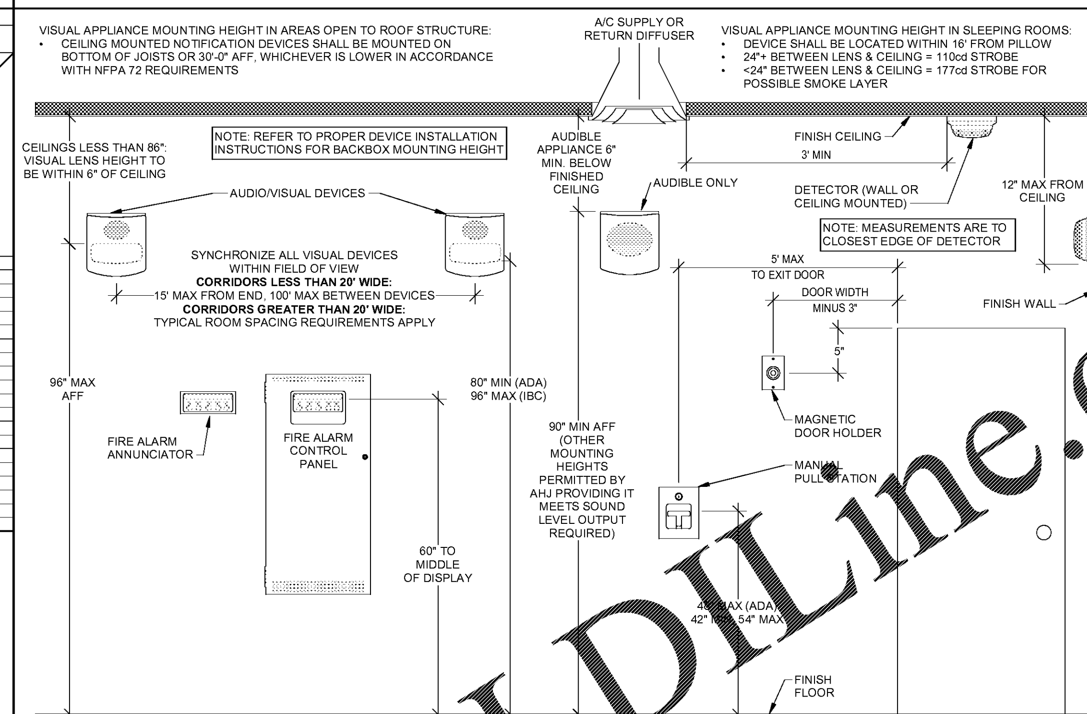
- FIRE ALARM SYSTEM TO BE FULLY SUPERVISED PROTECTIVE PREMISES SYSTEM OPERATIONAL IN ACCORDANCE WITH NFPA 72. ALARM SHALL BE MANUAL RESET ONLY.
- ALL EVENTS SHALL BE RECORDED AT THE FIRE ALARM CONTROL PANEL AND SHALL INDICATE TIME AND DATE OF OCCURRENCE AND LIST DEVICE INITIATED.
- AUDIO ALARM SIGNAL TO BE TEMPORAL 3 CODED SIGNAL
- WHEN THE LOCAL FIRE DEPARTMENT ACTS AS THE SUPERVISING STATION, COORDINATE SIGNALS TRANSMITTED TO THE FD
- NOT ALL SYSTEM INPUTS/OUTPUTS MAY BE USED, SHOWN FOR REFERENCE

SYSTEM OUTPUTS: CONTROL UNIT ANNUNCIATION | NOTIFICATION | REQUIRED FIRE SAFETY CONTROL | SUPPLEMENTARY

- A: ACTUATE COMMON ALARM SIGNAL INDICATOR
- B: ACTUATE AUDIBLE ALARM SIGNAL
- C: ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR
- D: ACTUATE AUDIBLE SUPERVISORY SIGNAL
- E: ACTUATE COMMON TROUBLE SIGNAL INDICATOR
- F: ACTUATE AUDIBLE TROUBLE SIGNAL
- G: ACTUATE APPROPRIATE LOCATION INDICATOR
- H: ACTUATE ALL AUDIBLE EVACUATION SIGNALS
- I: ACTUATE ALL VISIBLE EVACUATION SIGNALS
- J: DISPLAY / PRINT CHANGE OF STATUS
- K: TRANSMIT ALARM TO SUPERVISING STATION
- L: TRANSMIT SUPERVISORY TO SUPERVISING STATION
- M: TRANSMIT TROUBLE TO SUPERVISING STATION
- N: RELEASE MAGNETIC SMOKE DOORS & UNLOCK EXITS
- O: NOT USED
- P: NOT USED
- Q: NOT USED
- R: NOT USED
- S: REMOTELY DISPLAY ACTIVE STATUS
- T: FAN SHUT DOWN
- U: CLOSE SMOKE/FIRE DAMPERS IN RATED WALLS

	SYSTEM INPUTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	REMARKS
1	FIRE ALARM AC POWER FAILURE					●	●				●			●						●			1
2	FIRE ALARM LOW BATTERY					●	●				●			●						●			2
3	OPEN CIRCUIT					●	●				●			●						●			3
4	GROUND FAULT					●	●				●			●						●			4
5	NOTIFICATION CIRCUIT SHORT					●	●				●			●						●			5
6	MANUAL PULL STATION	●	●					●	●	●	●	●								●			6
7	SMOKE DETECTOR	●	●					●	●	●	●	●								●			7
8	HEAT DETECTOR	●	●					●	●	●	●	●								●			8
9	DUCT DETECTOR	●	●					●	●	●	●	●								●	●	●	9
10	DUCT DETECTOR (SUPERVISED)			●	●			●			●		●							●	●	●	10
11	CO DETECTOR			●	●			●			●		●							●	●	●	11
12	WATERFLOW SWITCH	●	●					●	●	●	●	●								●			12
13	TAMPER SWITCH			●	●			●			●		●							●			13
14	FIRE PUMP RUNNING	●	●								●	●			●					●			14
15	FIRE PUMP POWER FAILURE			●	●						●		●							●			15
16	FIRE PUMP POWER PHASE REVERSAL			●	●						●		●							●			16
17	WATER STORAGE TANK: LOW/HIGH LEVEL			●	●						●		●							●			17
18	WATER STORAGE TANK: LOW TEMP			●	●						●		●							●			18
19	ANSUL/FIRE SUPPRESSION SYSTEM	●	●					●	●	●	●	●								●			19

FIRE ALARM DEVICE MOUNTING HEIGHTS (PER NFPA 72)



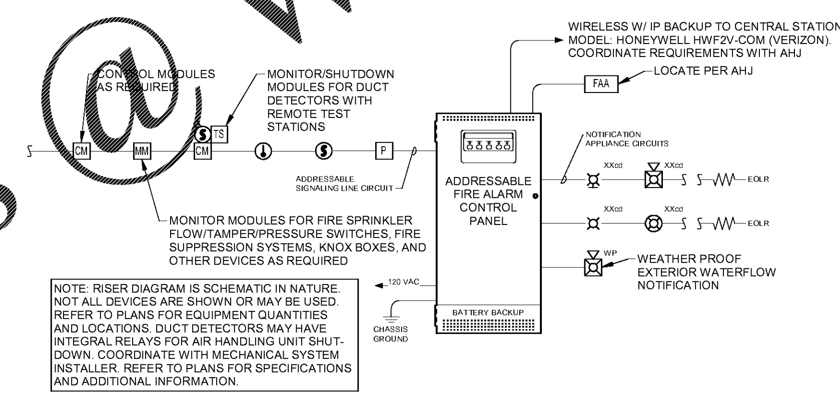
NOTE: FOR SCHEMATIC AND INFORMATION PURPOSES ONLY, NOT TO SCALE.
PLEASE REFER TO LOCAL CODES AND CONSULT WITH AHJ FOR APPROVED DEVICE LOCATIONS AND MOUNTING HEIGHTS.

FIRE ALARM GENERAL NOTES

1. FIRE ALARM SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH NFPA 70 AND NFPA 72. SYSTEM SHALL ALSO MEET ALL APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ) AND INSURANCE CARRIER. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL.
2. INFORMATION ON CONTRACT DOCUMENTS IS GENERAL AND FOR BID PURPOSES ONLY. PERFORM REQUIRED CALCULATIONS AND COORDINATE WITH OTHER TRADES. DEVIATIONS FROM THE ENGINEER'S LAYOUT WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED AND APPROVED.
3. PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
4. PROVIDE ADDITIONAL MATERIALS AND LABOR REQUIRED DUE TO LACK OF COORDINATION OR TO MEET AHJ AND INSURANCE CARRIER REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
5. THE FIRE ALARM CONTROL PANEL (FACP) AND REMOTE ANNUNCIATOR LOCATIONS SHOWN SHALL BE COORDINATED WITH THE FIRE DEPARTMENT AND AHJ PRIOR TO INSTALLATION.
6. PROVIDE A DEDICATED CONNECTION OF THE FIRE ALARM SYSTEM TO A UL LISTED CENTRAL STATION.
7. PROVIDE KNOX BOX FOR FIRE DEPARTMENT ACCESS. PROVIDE TAMPER SWITCH MONITORING IF REQUIRED.
8. PROVIDE CONNECTION TO EXTERIOR WATERFLOW NOTIFICATION AS REQUIRED.
9. PROVIDE NOTIFICATION, INITIATING AND MONITORING DEVICES AS INDICATED ON THE DRAWINGS. FIRE ALARM DEVICES SHALL BE OF ONE MANUFACTURER AND LISTED FOR USE WITH THE FACP.
10. PROVIDE NOTIFICATION APPLIANCE CIRCUIT (NAC) PANELS TO POWER NOTIFICATION DEVICES AS REQUIRED.
11. AUDIBLE NOTIFICATION DEVICES SHALL SOUND UNTIL SILENCED AT THE CONTROL PANEL OR REMOTE ANNUNCIATOR AS REQUIRED. VISUAL ALARM IS DISPLAYED UNTIL DEVICE IS RETURNED TO ITS NORMAL POSITION OR SUPERVISORY CONDITION IS CLEARED.
12. ROOF TOP AIR DISTRIBUTION SYSTEMS EXCEEDING 2,000 CFM: PROVIDE DUCT MOUNTED SMOKE DETECTORS FOR AIR HANDLING UNIT SHUTDOWN AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MONITOR/RELAY MODULE FOR SUPPLY AIR DUCT DETECTOR. REFER TO MECHANICAL SHEETS FOR AIR HANDLING UNIT AND DUCTWORK LAYOUT AND DETAILS.
13. DUCT SMOKE DETECTION SHALL TRANSMIT A SUPERVISORY SIGNAL TO THE FACP.
14. AIR HANDLING SYSTEMS THAT ARE MONITORED SHALL SHUTDOWN AND REMAIN DOWN UNTIL MANUALLY RESET.
15. FORWARD COMPLETED FIRE ALARM CERTIFICATE OF COMPLETION TO THE OWNER.
16. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

FIRE ALARM INSTALLATION NOTES

1. FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 72, NECA 1, AND LOCAL CODES AND REGULATIONS. ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
2. FIRE ALARM CONTROL PANEL (FACP) SHALL BE MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, UL 864 LISTED, AND DESIGNED TO TRANSMIT ALARM, TROUBLE, AND SUPERVISORY SIGNALS TO A UL LISTED CENTRAL STATION THROUGH A DIGITAL ALARM COMMUNICATION TRANSMITTER CAPABLE OF TRANSMITTING SIGNALS VIA DEDICATED PHONE LINE AND/OR GSM/IP CONNECTIONS. COORDINATE EXACT REQUIREMENTS WITH THE AHJ.
3. PROVIDE 120V AC POWER THROUGH A DEDICATED LOCKING BREAKER AT POWER PANEL COLORED RED.
4. GROUND THE FACP AND ALL ASSOCIATED CIRCUITS. INSTALL #6 AWG GROUND WIRE FROM THE TELE-COMMUNICATIONS EQUIPMENT GROUNDING POINT TO THE FACP.
5. SYSTEM SHALL INCLUDE 24V DC POWER SYSTEM WITH SEALED LEAD CALCIUM BATTERIES AND AUTOMATIC BATTERY CHARGER IN ACCORDANCE WITH NFPA 72.
6. INTERFACE WITH AND MONITOR ALL FIRE SUPPRESSION SYSTEM DEVICES INCLUDING (BUT NOT LIMITED TO) SPRINKLER FLOW/ TAMPER SWITCHES, HOOD OR CANOPY SYSTEMS, ETC.
7. INTERFACE WITH AND MONITOR DUCT DETECTORS FOR HVAC UNITS OVER 2,000 CFM.
8. WIRE AND CABLE SHALL BE UL LISTED AND LABELED AS COMPLYING WITH NFPA 70, ARTICLE 760. SIGNALING LINE CIRCUITS TO BE TWISTED, SHIELDED PAIR, SIZED AS RECOMMENDED BY SYSTEM MANUFACTURER. NON-POWER-LIMITED CIRCUITS TO BE SOLID-COPPER CONDUCTORS WITH 600V RATED, 75°C, COLOR-CODED INSULATION.
   - 8.1 SIGNALING LINE CIRCUITS: #16 AWG, MIN.
   - 8.2 NOTIFICATION APPLIANCE CIRCUITS: #14 AWG MIN.
9. ALL FIRE ALARM CIRCUITRY SHALL BE PLENUM RATED. EXPOSED WIRES SHALL BE INSTALLED IN DEDICATED CONDUIT.
10. TEST ALL SYSTEM DEVICES FOR PROPER OPERATION ACCORDING TO NFPA 72 IN THE PRESENCE OF THE AHJ AND OTHER OFFICIALS INSPECTING THE FIRE ALARM SYSTEM.
11. IF REQUIRED BY THE LOCAL AHJ, EQUIPMENT DATA SHEETS AND BATTERY CALCULATIONS IN ACCEPTANCE WITH NFPA 72 SHALL BE PERFORMED BY THE FIRE ALARM SYSTEM MANUFACTURER/ INSTALLER TO MATCH EQUIPMENT TO BE INSTALLED.
12. SYSTEM INSTALLER SHALL BE A LICENSED FIRE ALARM CONTRACTOR IN THE RESPECTIVE STATE OF THIS PROJECT.



1 ADDRESSABLE FIRE ALARM RISER DIAGRAM

NTS

NOTE: ELECTRICAL CONTRACTOR TO COORDINATE WITH CUMBERLAND FARMS CPM FOR CONTACT INFORMATION CONCERNING PROGRAMMING

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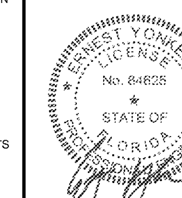

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FIRE ALARM NOTES AND DETAILS

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