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DRAWING TITLE / DESCRIPTION:
ELECTRICAL FIRE ALARM RISER DIAGRAM

PROJECT TITLE:
LUMBERTON EQUIPMENT SHOP
 LUMBERTON HIGHWAY DIVISION 6
 NCDOT HIGHWAY DIVISION 6
 872 NC 711 HIGHWAY
 LUMBERTON, NORTH CAROLINA 28360

STATE CONSTRUCTION ID.# 16-12916-01A

ASSET NUMBER:
 CO.# SITE.# BLDG.#
 78 06 00

REVISIONS
 NO. DATE

DATE ISSUED: 12/15/2017
 DRAWN BY: MKT
 CHECKED BY: MWH
 SHEET NO.

E0.2

FIRE ALARM SYSTEM MATRIX	BUILDING SYSTEM OUTPUTS										CENTRAL COMM							
	ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL INDICATOR	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTIVATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATUS	ACTIVATE EXTERNAL HORN/STROBE	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	SHUT DOWN RESPECTIVE AIR HANDLER	SHOW CHANGE OF STATUS ON ANNUNCIATOR	SHOW CHANGE OF STATUS ON CENTRAL PANEL	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION
MANUAL FIRE ALARM PULL BOXES	X	X					X	X	X	X			X	X	X			
BUILDING SMOKE DETECTOR	X	X					X	X	X	X			X	X	X			
DUCT SMOKE DETECTOR		X	X	X			X	X			X		X	X	X		X	
FIRE ALARM A.C. POWER FAILURE					X	X	X	X				X	X	X			X	
FIRE ALARM SYSTEM LOW BATTERY					X	X	X	X				X	X	X			X	
OPEN CIRCUIT					X	X	X	X				X	X	X			X	
GROUND FAULT					X	X	X	X				X	X	X			X	
NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X	X	X				X	X	X			X	
SPRINKLER FLOW	X	X					X	X	X	X			X	X	X			
SPRINKLER TAMPER SWITCH			X	X			X				X		X	X				
POST INDICATING VALVE			X	X			X				X		X	X				
PUMP RUNNING	X	X					X	X	X	X			X	X	X			
LOSS OF PHASE	X	X					X	X	X	X			X	X	X			
PHASE REVERSAL	X	X					X	X	X	X			X	X	X			
ALTERNATE POWER SOURCE	X	X					X	X	X	X			X	X	X			

SEQUENCE OF OPERATION

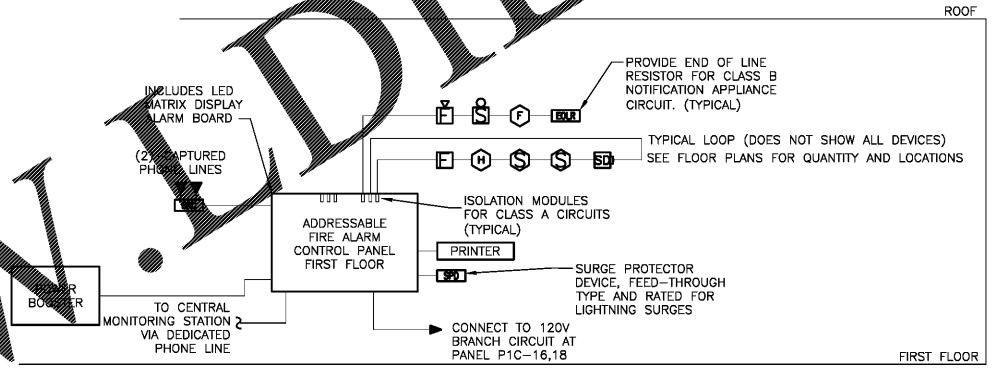
- A. ALARM DETECTION: WHEN A FIRE ALARM CONDITION IS DETECTED BY ONE OF THE SYSTEM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL IMMEDIATELY OCCUR:
1. SYSTEM ALARM INDICATOR SHALL FLASH CONTINUOUSLY.
 2. A LOCAL SOUNDING DEVICE IN THE PANEL SHALL BE ACTIVATED.
 3. CONTROL PANEL DISPLAY SHALL INDICATE ALL PERTINENT INFORMATION ASSOCIATED WITH THE ALARM AND ITS LOCATION IN THE ALARM MESSAGE QUEUE.
 4. APPROPRIATE STATUS CHANGE MESSAGES SHALL BE DISPLAYED ON ALL PRINTERS SO PROGRAMMED.
 5. ALL AUTOMATIC PROGRAMS ASSIGNED TO THE ALARM POINT SHALL BE EXECUTED AND THE ASSOCIATED NOTIFICATION APPLIANCE CIRCUITS AND CONTROL RELAYS ACTIVATED AND DEACTIVATED.
- B. TROUBLE DETECTION: WHEN A TROUBLE CONDITION IS DETECTED BY ONE OF THE SYSTEM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL IMMEDIATELY OCCUR:
1. SYSTEM TROUBLE INDICATOR SHALL FLASH.
 2. A LOCAL SOUNDING DEVICE IN THE PANEL SHALL SOUND.
 3. CONTROL PANEL SHALL INDICATE ALL PERTINENT INFORMATION ASSOCIATED WITH THE TROUBLE CONDITION AND ITS LOCATION.
 4. UNACKNOWLEDGED ALARM MESSAGES SHALL HAVE PRIORITY OVER TROUBLE MESSAGES, AND IF SUCH AN ALARM MUST ALSO BE DISPLAYED, THE TROUBLE MESSAGE WILL NOT BE DISPLAYED UNTIL THE OPERATOR HAS ACKNOWLEDGED ALL ALARM MESSAGES.

ANNUNCIATION

1. ALL VISUAL NOTIFICATION DEVICES SHALL BE SYNCHRONIZED.

SYSTEM DEVICES

1. PROVIDE ADDRESSABLE DEVICES ONLY IN CONDITIONED SPACES. NO ADDRESSABLE DEVICES ARE ALLOWED IN UNCONDITIONED SPACES.
2. DUCT-MOUNTED SMOKE DETECTORS ARE SUPPLIED AND INSTALLED BY FIRE PROTECTION CONTRACTOR. PROVIDE CONNECTION TO DUCT-MOUNTED SMOKE DETECTORS AFTER DEVICES ARE SECURED IN FINAL LOCATION.
3. PROVIDE PHOTOELECTRIC TYPE SMOKE DETECTORS WHERE MOUNTED IN DUCTWORK.
4. TAMPER SWITCHES AND FLOW SWITCHES ARE SUPPLIED AND INSTALLED BY FIRE PROTECTION CONTRACTOR. DUCT-MOUNTED SMOKE DETECTORS ARE SUPPLIED AND INSTALLED BY FIRE ALARM CONTRACTOR. PROVIDE CONNECTION TO TAMPER SWITCHES, FLOW SWITCHES, AND DUCT-MOUNTED SMOKE DETECTORS AFTER DEVICES ARE SECURED IN FINAL LOCATION.



1 FIRE ALARM RISER
 1/8"=1'-0"

FIRE ALARM SYSTEM NOTES:

- A. AUDIBLE SIGNAL SOUND LEVEL SHALL BE AT LEAST 15dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF 60 SECONDS MINIMUM, WHICHEVER IS LOUDER, MEASURED FIVE FEET ABOVE THE FLOOR IN THE OCCUPIABLE AREA.
- B. THE TOTAL SOUND LEVEL PRODUCED BY COMBINING AMBIENT SOUND WITH ALL ALARM SIGNALS SHALL NOT EXCEED 120dBA.
- C. "cd" RATING IS CALCULATED PER NFPA AND IT IS MINIMUM. PROVIDE MINIMUM OR HIGHER.
- D. IN MECHANICAL EQUIPMENT ROOMS, THE AVERAGE AMBIENT SOUND LEVEL SHALL BE AT LEAST 90dBA. LOCATE FIRE ALARM PULL STATION WITHIN 5' OF EXIT DOORS.
- E. PROVIDE SMOKE/HEAT DETECTOR WITHIN 5' OF THE FIRE ALARM EQUIPMENT FACP, FATC).
- F. LOCATION OF CEILING MOUNTED SMOKE/HEAT DETECTORS SHALL BE FIELD COORDINATED PRIOR TO ROUGH IN. THE DETECTOR SHALL BE A MINIMUM OF 2' AWAY FROM LIGHT FIXTURES AND A MINIMUM OF 3' AWAY FROM AIR DISTRIBUTION DEVICES.
- G. ACTIVATION OF AN ALARM ZONE SHALL CAUSE ALL AIR HANDLING EQUIPMENT TO SHUT DOWN (ALL DAMPERS, AIR HANDLERS AND EXHAUST FANS MUST STOP).
- H. BRANCH CIRCUIT BREAKERS SUPPLYING THE FA SYSTEM MUST BE PHYSICALLY PROTECTED BY PANELBOARD LOCK OR HANDLE LOCK AND MUST BE IDENTIFIED WITH 1/4" PERMANENT RED DOT APPLIED TO HANDLE OR EXPOSED AREA.
- I. END OF LINE DEVICES SHALL BE INSTALLED IN ACCESSIBLE TERMINAL CABINETS OR DEDICATED ACCESSIBLE BOXES TO FACILITATE TESTING AND MAINTENANCE.

GENERAL BUILDING NOTES:

1. UPON ACTIVATION OF FIRE ALARM ALL DOORS CONTROLLED BY CARD READERS SHALL BE UNLOCKED TO PROVIDE FREE EGRESS.
2. THIS OCCUPANCY CONTAINS NO STORAGE OF ANY HAZARDOUS MATERIALS.

Order Plans

