

FIRE ALARM & MASS NOTIFICATION LEGEND

DEVICE INFORMATION

The diagram shows a rectangular box representing a device label with several fields. Callout lines point from descriptive text to specific parts of the label:

- A line points from "STROBE-CANDELA" to the top-left corner.
- A line points from "DEVICE NUMBER FOR RESPECTIVE CIRCUIT" to the top-right field labeled "P-C-D".
- A line points from "INDICATES PANEL AND CIRCUIT INFORMATION" to the center field containing a square icon with a cross.
- A line points from "INITIAL SPEAKER-WATTAGE" to the bottom-right field labeled "W".
- A line points from "SIGNALING LINE CIRCUIT #" to the bottom-left field containing a bell icon and the letters "SLC".

P-C-D
CD

STROBE-CANDELA

DEVICE NUMBER FOR RESPECTIVE CIRCUIT

P-C-D

W

INDICATES PANEL AND CIRCUIT INFORMATION

INITIAL SPEAKER-WATTAGE

SLC^p

SIGNALING LINE CIRCUIT #

Diagram illustrating the components of a P-C-D (Panel-Circuit-Device) symbol:

- STROBE-CANDELA**: Points to the top of the square symbol.
- DEVICE NUMBER FOR RESPECTIVE CIRCUIT**: Points to the 'W' (Wattage) label.
- INDICATES PANEL AND CIRCUIT INFORMATION**: Points to the 'C' (Circuit) label inside the circle.
- INITIAL SPEAKER-WATTAGE**: Points to the 'S' (Speaker) label.
- SIGNALING LINE CIRCUIT #**: Points to the 'SLC' (Signaling Line Circuit) label.

1. PROVIDE NEW ADDRESSABLE VOICE FIRE ALARM AND MASS NOTIFICATION SYSTEM AS OUTLINED.

1. SYSTEM SHALL COMPLY WITH THE FOLLOWING AT MINIMUM

- INTELLIGIBILITY CONSIDERATIONS:**

- AC POWER FOR FIRE ALARM / MNS EQUIPMENT:**

1. WHERE MORE THAN ONE AC CIRCUIT IS REQUIRED, PROVIDE A DEDICATED AC SUB-PANEL IN ACCORDANCE WITH UFC 3-520-01, 3-2.7.
2. SUB-PANEL SHALL SIZED FOR MINIMUM OF SIX 20A CIRCUITS DEDICATED TO FIRE PROTECTION AND LIFE SAFETY SYSTEMS.
3. SUB-PANEL SHALL BE SERVED BY LOCK-ON BREAKER IN UPSTREAM DISTRIBUTION EQUIPMENT.
4. NO MORE THAN 3 FA/MNS PANELS ON ONE 20A CIRCUIT.

1. FIRE ALARM AND MNS NAC/SLC CIRCUITS MUST BE CLASS "A" WITH NO "T" TAPS ALLOWED.
2. PATHWAY SURVIVABILITY MUST BE LEVEL 1.
3. FIRE ALARM AND MNS CIRCUITS TO BE SOLID COPPER FPL/FPLR/FPLP, OR TFFN/THHN UNLESS OTHERWISE RECOMMENDED BY THE MFG. UNDERGROUND (SUCH AS TO PIV) MUST BE LISTED FOR WET LOCATION SUCH AS THWN.
4. ALL FIELD-WIRING COLORS MUST BE THE SAME THROUGHOUT THE CIRCUIT TO WHICH IT IS CONNECTED. DEVELOP A COLOR SCHEME AND SHOW ON SHOP DRAWINGS, SUCH AS DIFFERENT COLORS FOR EACH CIRCUIT.
5. ALL WIRING MUST EITHER TERMINATE AT THE FIRE ALARM CONTROL PANEL, REMOTE POWER SUPPLY, OTHER CABINETS OR DEVICE.
 - 5.1. ALL DEVICES MUST UTILIZE SCREW TERMINALS.
 - 5.2. PULL ALL CONDUCTORS SPLICE FREE.
 - 5.3. THE USE OF WIRE NUTS, CRIMPED CONNECTORS, OR TWISTING OF CONDUCTORS IS PROHIBITED.
 - 5.4. DO NOT USE TERMINAL STRIPS IN THE FIELD WIRING, SUCH AS IN-BETWEEN DEVICES.
 - 5.5. TERMINATION AT A DEVICE MUST BE A COMPLETE BREAK IN THE WIRE, DO NOT LOOP THE WIRE AROUND THE SCREW.
6. UNLESS INDICATED OTHERWISE, THE FOLLOWING WIRE SIZE MUST BE USED:
 - 6.1. SLC AND IDC: MINIMUM 18 AWG
 - 6.2. NAC STROBE AND TEXT SIGNS: MINIMUM 14 AWG.
 - 6.3. SPEAKER: MINIMUM 16 AWG
 - 6.4. REMOTE ANNUNCIATOR, LOC DATA, TEXT SIGN CONTROL (RS485) PER MFG RECOMMENDATIONS FOR DISTANCES OF PROJECT.
7. STROBE CIRCUITS AND SPEAKER CIRCUITS TO BE CALCULATED AS SHOWN. AN ADDITIONAL 15+ TO BE ADDED TO EACH DEVICE DISTANCE TO ACCOUNT FOR ANTICIPATED DROPS AND LOOPS IN JUNCTION BOXES (DOWN/BACK). IN ADDITION, VOLTAGE CALCS TO PROVIDE A SAFETY FACTOR OF AT LEAST 1 VOLT USING POINT-TO-POINT.
 - 7.1. CONTRACTOR MUST PROVIDE VOLTAGE DROP CALCS FOR THEIR PARTICULAR PRODUCTS. THIS MUST INCLUDE SPEAKER AND STROBE CALCULATIONS.
 - 7.2. VOLTAGE FOR STROBES MUST START AT 20.4 VOLTS AND MUST NOT DROP BELOW 17 VOLTS ACCOUNTING FOR TOTAL CIRCUIT PATH (OUT / BACK, AND DROPS / ELEVATION CHANGES).
 - 7.3. EACH 6 FOOT FLEX ADDS 28' PER DROP (DOWN & BACK WITH LOOPS).
8. 70 VOLT SPEAKER CIRCUITS MUST BE USED DUE TO CIRCUIT LENGTHS.
 - 8.1. SPEAKER dB CALCULATIONS TO BE PERFORMED ACCOUNTING FOR DOUBLE THE WATTAGE INDICATED ON FLOOR PLAN. THIS IS TO ACCOUNT FOR FIELD ADJUSTMENTS AND SPARE CAPACITY.
 - 8.2. IN NO CASE ARE SPEAKER CIRCUITS TO BE LOADED TO EXCEED A 5% DROP IN VOLTAGE PER CALCULATIONS WITH DOUBLE ANTICIPATED WATTAGE USED IN CALCS.
9. SIGNALING LINE CIRCUITS MAY BE RUN WITH OTHER FIRE ALARM AND MNS CIRCUITS AS LONG AS THERE IS NO HUM OR OTHER INTERFERING NOISE OVER THE SPEAKERS IMPACTING SLEEPING RESIDENTS.
10. LOC CIRCUITS AND/OR CIRCUITS BETWEEN CONTROL PANELS (SUCH AS RS485, VOICE, ETC.) MUST BE IN RACEWAYS SEPARATE FROM SLC AND NAC.
11. MINIMUM 3/4" EMT RED CONDUIT IS REQUIRED FOR ALL CIRCUITS, UNLESS INDICATED ON DRAWINGS TO HAVE MINIMUM 1".
12. FLEXIBLE METALLIC CONDUIT (FMC) MAY BE USED FOR DROPS TO DEVICES (SUCH AS IN CEILINGS) TO A MAXIMUM OF 6' EACH.
 - 12.1. A SINGLE DROP MUST BE PROVIDED DOWN/BACK TO DEVICE. DO NOT LOOP DROPS TO DEVICES.
13. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT (LTMC) AND FITTINGS MUST BE USED ON THE EXTERIOR OR WET LOCATIONS (SUCH AS FOR SPEAKERS).
13. FLEXIBLE DROPS ARE NOT REQUIRED TO BE RED.
14. UNLESS INDICATED, FIRE ALARM AND MNS CONDUITS AND BACK BOXES MUST BE RED DIPPED / PAINTED BY MFG.
 - 14.1. WIRE TROUGHS AND LARGER JUNCTION BOXES MAY BE FIELD PAINTED RED.
 - 14.2. COVERS MAY BE FIELD PAINTED RED.
 - 16.3. EXPOSED CONDUITS MUST BE PAINTED TO MATCH WALL / CEILING FINISH AND LABELED WITH A RED 3/4" BAND ON EACH SIDE OF A WALL AND EVERY 20'. THE INSIDE COVER OF PULL BOXES MUST BE LABELED AS "FIRE ALARM" WITH THE INTERIOR OF THE BOX PAINTED RED.
17. WIRE TROUGHS (GUTTERS) MUST BE PROVIDED ABOVE PANELS WHEN THERE ARE MORE THAN ONE PANEL AT A LOCATION.
 - 17.1. TROUGHS SHOULD BE ABOVE CEILINGS IN FINISHED AREAS WITH MINIMUM CONDUITS BETWEEN PANELS AND TROUGHS.
 - 17.2. 120VAC CIRCUITS MUST NOT SHARE CONDUITS OR BE RUN IN THE SAME WIRE TROUGH AS LOW VOLTAGE CIRCUITS (<71 VOLTS).
18. ALL CONDUIT MUST BE CONCEALED, UNLESS REQUIRED TO BE RUN IN OPEN EXPOSED AREAS.
19. MINIMUM 25 PERCENT SPARE AMPERAGE MUST BE PROVIDED ON EACH CIRCUIT OF POWER SUPPLIES.
20. MINIMUM 50% SPARE CAPACITY MUST BE PROVIDED ON AMPLIFIER PANELS AND CIRCUITS.
21. RACEWAY FILL MUST BE IN ACCORDANCE WITH NFPA 70. FORTY (40) PERCENT FILL MUST NOT BE EXCEEDED.
22. PROVIDE SPARE CIRCUITS AS INDICATED.

1. EVERY CABINET THAT HAS BACKUP BATTERIES MUST HAVE A LABEL THAT IS PROMINENTLY DISPLAYED JUST ABOVE BATTERIES INDICATING THE VOLTAGE AND AMP-HOUR OF BATTERIES REQUIRED IN THAT CABINET BASED ON CALCULATIONS.
2. EXAMPLE: "TWO-12-VOLT 7-AMP HOUR BATTERIES".
3. BATTERIES MUST HAVE MFG DATE PER NFPA 72, NOT DATE OF INSTALLATION.
4. NEW BATTERIES MUST HAVE BEEN MANUFACTURED WITHIN 6 MONTHS OF OCCUPANCY.

1. COORDINATE BETWEEN TRADES TO PROVIDE SIGNAGE ON RISER ROOM DOOR THAT STATES "FIRE ALARM AND SPRINKLER RISER".
2. LETTERING OF SIGN TO BE MINIMUM 2" HIGH.
3. SIGN TO BE DOT GRADE ALUMINUM / STENCILING TO PREVENT FADING.
4. PROVIDE WHITE LETTERING ON RED BACKGROUND.

LITTLE ROCK A.F.B.
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Registered Professional Engineer (Fire Protection)
 CERTIFICATE NO. 37345
 SCOTT WADE LACEY
 DATE SIGNED 02/29/2022
 ARIZONA USA



No.	Revision/Issue	Date	BY	App'D
1	100 REVISID SUBMITTAL	04/26/2024		

FIRE ALARM & MNS NOTES

SHEET TITLE

DRAWN BY SL	LEAD DESIGNER SL
CHECK REVIEWER SL	PROJECT NUMBER NKAK 21-1034
SIGNED BY SL	SHEET
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SCALE	
AS NOTED	58 OF 100