

# FIRE ALARM SYSTEM

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| #  | REVISION      | DATE       |
|----|---------------|------------|
| 1  | FIRST RELEASE | 10/23/2023 |
| 2  | AHJ REVISION  | 04/18/2025 |
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CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
COVER SHEET  
FA-0

SCALE: N.T.S.

DRAWN: JEM

REVIEWED: CSI

DATE: 04/15/2025

DRAWING NUMBER:

FA-0

## GENERAL NOTES

- THESE DRAWINGS DEPICT GENERAL LOCATIONS OF LIFE SAFETY EQUIPMENT & FIELD DEVICES. EXACT ROUTING OF CONDUITS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS.
- ALL FIRE ALARM SYSTEM WIRING SHALL BE CLEAR FROM SHORTS, OPENS AND GROUNDS.
- SHOULD ANY CONDITIONS EXIST THAT DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS WHICH CAUSE MAJOR DEVIATIONS IN THE WORK SHOWN, THE CONTRACTOR SHALL CONTACT THE DESIGNER IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE.
- CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITING AS REQUIRED TO ACCOMMODATE THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE.
- THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
- ANY SMOKE DETECTOR HEAD INSTALLED BEFORE THE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST.
- INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACP ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- ALL WIRING SHALL BE INSTALLED ACCORDING TO NFPA 70 (NEC).
- FIRE ALARM CIRCUITS EXTENDING BEYOND ONE BUILDING AND RUN OUTDOORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 ARTICLES 760, 770, 725 AND 800 WHERE APPLICABLE.
- ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
- ALL SHIELDED WIRE MUST HAVE SHIELD CONTINUITY AT FULL LENGTH OF THE WIRE.
- ONLY FIRE ALARM SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
- MAINTAIN 40 PERCENT MAXIMUM CONDUIT FILL RATIO AS PER NEC REQUIREMENTS.
- EXISTING CONDUITS MAY BE USED BY THE INSTALLATION CONTRACTOR AS DEEMED NECESSARY, HOWEVER, ANY EXISTING CONDUIT WILL BE USED ONLY IF CONDUITS MEET CURRENT STANDARDS AND CODES.
- THE FIRE ALARM SYSTEM SHALL BE MONITORED BY A CENTRAL UL LISTED MONITORING STATION.
- ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.

## SCOPE OF WORK

NEW MANUAL AND AUTOMATIC FIRE ALARM SYSTEM IN A ELECTRONIC DATA PROCESSING. NEW FIRE ALARM PANEL IS BEING INSTALLED ALONG WITH NOTIFICATION DEVICES AS PER THE APPLICABLE CODES WITH PULL STATIONS AT EVERY EXIT.

## CONTRACTOR INFO

### SYSTEM DESIGNER/INSTALLER

NAME:  
EMAIL:  
PHONE #:

### DRAWINGS PREPARED BY

JEM SECURITY LLC  
jmaderaj@jemsystems.com  
480-977-3555

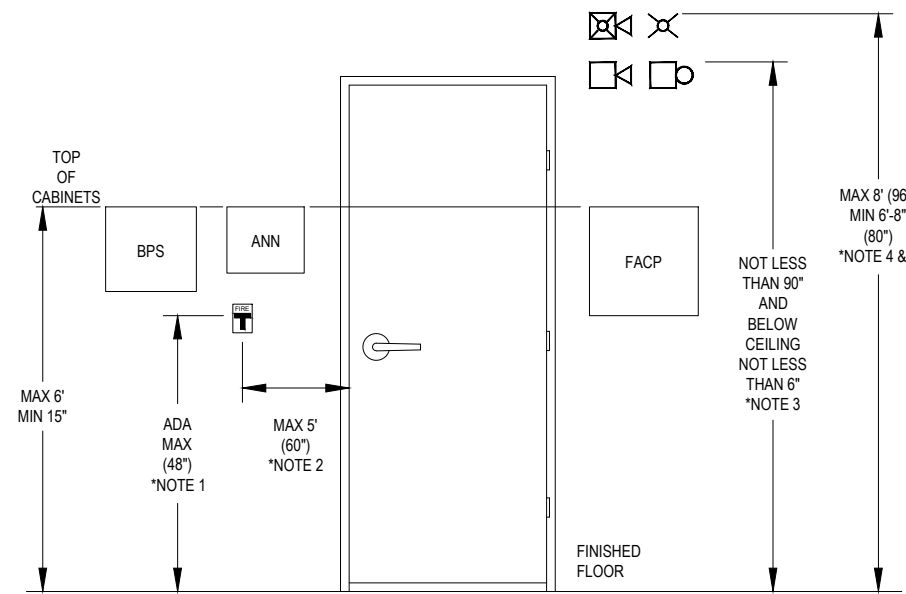
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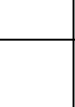
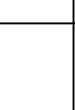
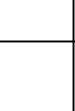
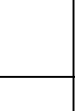
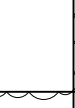
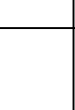
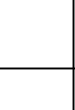
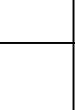
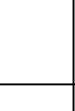
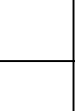
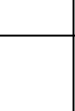
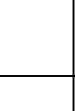
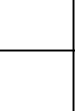
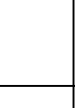
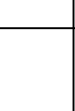
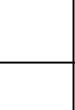
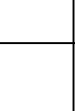
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2017 OHIO MECHANICAL CODE (OMC) (BASED ON 2015 INTERNATIONAL MECHANICAL CODE),  
2017 OHIO PLUMBING CODE (OPC) (BASED ON 2015 INTERNATIONAL PLUMBING CODE),  
2017 NATIONAL ELECTRIC CODE (NEC) - NFPA 70,  
THE 2012 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC WITH AMENDMENTS OR ASHRAE 90.1-2010 WITH AMENDMENTS),  
OHIO FIRE CODE (OFC) - 2017 (NFPA 13, 2016) W/ 2019 AMENDMENTS,  
THE 2015 EDITION OF THE INTERNATIONAL FUEL GAS CODE (IFGC) WITH LOCAL AMENDMENTS,  
ACCESSIBLE & USABLE BUILDINGS AND FACILITIES - ANSI A117.1-2009 AS AMENDED BY OBC SECTION 112,  
NFPA 72 2019 EDITION.

| BUILDING DATA      |      |                    |
|--------------------|------|--------------------|
| CONSTRUCTION TYPE: | II-B | FIRE PROTECTION:   |
| OCCUPANCY GROUP:   | B    | FULLY SPRINKLERED  |
|                    |      | NUMBER OF STORIES: |
|                    |      | 1                  |
|                    |      | WORK AREA:         |
|                    |      | 229,595 SQFT       |

## TYPICAL MOUNTING HEIGHTS

1. NFPA 72 2019 17.15.6 THE OPERABLE PART OF EACH MANUAL FIRE ALARM BOX SHALL NOT BE LESS THAN 42in AND NOT MORE THAN 48in FROM THE FINISHED FLOOR.
2. NFPA 72 2019 17.15.9 A MANUAL FIRE ALARM BOXES SHALL BE LOCATED WITHIN 5ft OF EACH EXIT DOORWAY ON EACH FLOOR.
3. NFPA 72 2019 18.4.9.1 CEILING HEIGHTS ALLOWED, AND UNLESS OTHERWISE PERMITTED BY 18.4.9.2 THROUGH 18.4.9.5, WALL-MOUNTED APPLIANCE SHALL HAVE THEIR TOPS ABOVE THE FINISHED FLOORS AT HEIGHTS OF NOT LESS THAN 90in AND BELOW THE FINISHED CEILINGS AT DISTANCES OF NOT LESS THAN 6in.
4. NFPA 72 2019 18.4.9.3 IF COMBINATION AUDIBLE/ VISIBLE APPLIANCE ARE INSTALLED, THE LOCATION OF THE INSTALLED APPLIANCE SHALL BE DETERMINED BY THE REQUIREMENTS OF 18.5.5. (SEE NOTE 5).
5. NFPA 72 2019 18.5.5.1 WALL-MOUNTED APPLIANCE SHALL BE MOUNTED SUCH THAT THE ENTIRE LENGTH IS NOT LESS THAN 18in AND NOT GREATER THAN 30in ABOVE THE FINISHED FLOOR OR AT THE MOUNTING HEIGHT SPECIFIED USING THE PERFORMANCE BASED ALTERNATIVE OF 18.5.5.7.



| EQUIPMENT LIST                                                                          |     |                       |                          |                                                                     |
|-----------------------------------------------------------------------------------------|-----|-----------------------|--------------------------|---------------------------------------------------------------------|
| SYMBOL                                                                                  | QTY | MANUFACTURER          | PART NO                  | DESCRIPTION                                                         |
|        | 1   | EDWARDS               | EST4                     | FIRE ALARM CONTROL PANEL                                            |
|                                                                                         | 1   | EDWARDS               | 4-CPU                    | MAIN CPU                                                            |
|                                                                                         | 4   | EDWARDS               | 3-SDDC2                  | SIGNATURE DUAL DRIVER CONTROLLER (LRM)                              |
|                                                                                         | 1   | EDWARDS               | 4-PPS/M                  | PRIMARY POWER SUPPLY 120V                                           |
|                                                                                         | 1   | EDWARDS               | 3-MODCOM                 | MODEM COMMUNICATOR AND DIALER                                       |
|                                                                                         | 1   | EDWARDS               | 4-LCDLE                  | DISPLAY,MAIN LCD MODULE                                             |
|                                                                                         | 1   | EDWARDS               | 3-CAB14B                 | BACK BOX /W 14 LRM SPACE W/O DOOR                                   |
|                                                                                         | 2   | EDWARDS               | 3-CHAS7                  | CHASSIS ASS'Y FOR 7 LRMS                                            |
|        | 1   | SPACE AGE ELECTRONICS | SSU00691                 | FIRE ALARM DOCUMENT CABINET                                         |
|        | 46  | EDWARDS               | BPS6A                    | 6.5A, REMOTE POWER SUPPLY                                           |
|        | 1   | EDWARDS               | 4-4ANN                   | FIRE ALARM ANNUNCIATOR                                              |
|                                                                                         | 2   | EDWARDS               | 4-NET-TP                 | TWISTED PAIR SFP NETWORK CONTROLLER                                 |
|                                                                                         | 1   | EDWARDS               | 4-4ANNMT                 | WALLBOX, SURFACE/FLUSH MOUNTING                                     |
|                                                                                         | 1   | EDWARDS               | 4-ANNCPU                 | ANNUNCIATOR CENTRAL PROCESSOR UNIT (CPU)                            |
|                                                                                         | 1   | EDWARDS               | 4-LCDANN                 | COLOR LCD DISPLAY                                                   |
|        | 29  | EDWARDS               | SIGA-278                 | DOUBLE ACTION FIRE ALARM STATION                                    |
|        | 104 | EDWARDS               | SIGA-CT1                 | SINGLE INPUT MODULE                                                 |
|        | 170 | EDWARDS               | SIGA-CT2                 | DUAL INPUT MODULE                                                   |
|        | 26  | EDWARDS               | SIGA-CR                  | CONTROL RELAY MODULE                                                |
|        | 24  | EDWARDS               | SIGA-IM2                 | ISOLATOR MODULE                                                     |
|       | 22  | EDWARDS               | SIGA-CC1S                | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
|  REL | 15  | EDWARDS               | SIGA-REL                 | SIGNATURE RELEASING MODULE                                          |
|      | 15  | EDWARDS               | RELA-SRV-1               | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
|      | 15  | EDWARDS               | MFC-A                    | MULTI-FUNCTION CABINET                                              |
|      | 49  | EDWARDS               | SIGA-OSD W/SIGA-SB4 BASE | ADDRESSABLE SMOKE DETECTOR                                          |
|      | 1   | EDWARDS               | G4ARF                    | HORN, WALL, RED                                                     |
|                                                                                         | 1   | EDWARDS               | GP10                     | ROOM SIDE WIRING                                                    |
|      | 1   | EDWARDS               | G4ARA-CVR                | COVER WITH MARKING "ALERT", RED                                     |
|                                                                                         | 228 | EDWARDS               | G4AVRF                   | HORN STROBE, WALL, RED                                              |
|                                                                                         | 228 | EDWARDS               | GP10                     | ROOM SIDE WIRING                                                    |
|      | 228 | EDWARDS               | G4AVRA-CVR               | COVER WITH MARKING "ALERT", RED                                     |
|                                                                                         | 14  | EDWARDS               | G4VRF                    | STROBE, WALL, RED                                                   |
|                                                                                         | 14  | EDWARDS               | GP10                     | ROOM SIDE WIRING                                                    |
|      | 14  | EDWARDS               | G4VRA-CVR                | COVER WITH MARKING "ALERT", RED                                     |
|                                                                                         | 157 | EDWARDS               | GCAVRF                   | HORN STROBE, CEILING, RED                                           |
|                                                                                         | 157 | EDWARDS               | GP10                     | ROOM SIDE WIRING                                                    |
|      | 157 | EDWARDS               | GCAVRA-CVR               | COVER WITH MARKING "ALERT", RED                                     |
|                                                                                         | 114 | EDWARDS               | GCVRF                    | STROBE, CEILING, RED                                                |
|                                                                                         | 114 | EDWARDS               | GP10                     | ROOM SIDE WIRING                                                    |
|      | 114 | EDWARDS               | GCVRA-CVR                | COVER WITH MARKING "ALERT", RED                                     |
|                                                                                         | 1   | EDWARDS               | CS405-7A-T               | WEATHERPROOF STROBE, CEILING, RED                                   |
|                                                                                         | 1   | EDWARDS               | 449                      | WEATHERPROOF MOUNT BOX                                              |
|      | 1   | EDWARDS               | LKC-10                   | LENS MARKING "ALERT"                                                |
|                                                                                         | 2   | EDWARDS               | 757-7A-T                 | WEATHERPROOF HORN STROBE, WALL, RED                                 |
|                                                                                         | 2   | EDWARDS               | 757A-WB                  | WEATHERPROOF MOUNT BOX                                              |
|      | 2   | EDWARDS               | LKW-10                   | LENS MARKING "ALERT"                                                |
|                                                                                         | 9   | GENERIC               | N/A                      | CONVENTIONAL DUCT DETECTOR (BY OTHERS)                              |
|                                                                                         | 7   | GENERIC               | N/A                      | REMOTE TEST/RESET STATION (BY OTHERS)                               |
|      | 20  | GENERIC               | N/A                      | 120VAC DOOR HOLDER (BY OTHERS)                                      |
|      | 2   | GENERIC               | N/A                      | MOTORIZED BELL - 120VAC (BY OTHERS)                                 |
|      | 93  | EDWARDS               | FHSD8330-ULF             | LASERSENSE MODULASER - DETECTOR MODULE (FOR REFERENCE ONLY)         |
|      | 24  | EDWARDS               | FHSD8310-ULF             | LASERSENSE MODULASER - STANDARD DISPLAY MODULE (FOR REFERENCE ONLY) |
|      | 2   | EDWARDS               | FHSD8320-ULF             | LASERSENSE MODULASER - COMMAND DISPLAY MODULE (FOR REFERENCE ONLY)  |

| CABLE AND WIRE LEGEND |                |     |                    |                                                          |              |
|-----------------------|----------------|-----|--------------------|----------------------------------------------------------|--------------|
| LABEL                 | PART NO        | AWG | RESISTANCE (Ω/KFT) | DESCRIPTION                                              | TOTAL LENGTH |
| A                     | 18/2 FPL (ANN) | 18  | 6.5                | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED | 330'         |
| D                     | 16/2 FPL (SLC) | 16  | 4.1                | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    | 14709'       |
| P                     | 14/2 FPL (AUX) | 14  | 2.6                | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          | 1338'        |
| V                     | 14/2 FPL (NAC) | 14  | 2.6                | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         | 15208'       |

[illegible]

NOTE: ALL SIGNALS WILL BE SENT TO A CENTRAL STATION

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CERTIFIED FIRE ALARM DESIGNER:

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FIRE ALARM SYSTEM  
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SCALE: N.T.S.

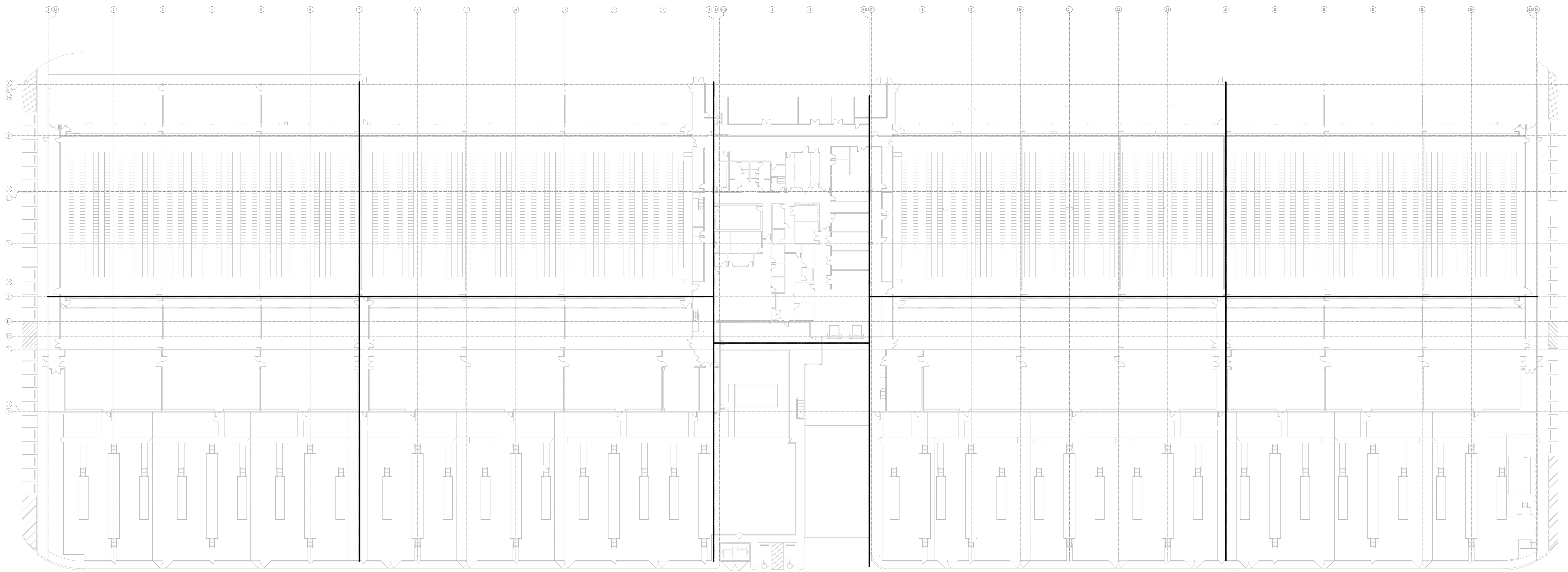
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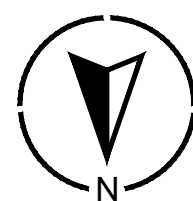
DATE: 04/15/2025

DRAWING NUMBER:

**FA-1**



1 FIRST FLOOR PLAN - OVERALL  
1/32" = 1'-0"



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FIRST FLOOR PLAN -  
OVERALL  
FA-2

SCALE: 1/32" = 1'-0"

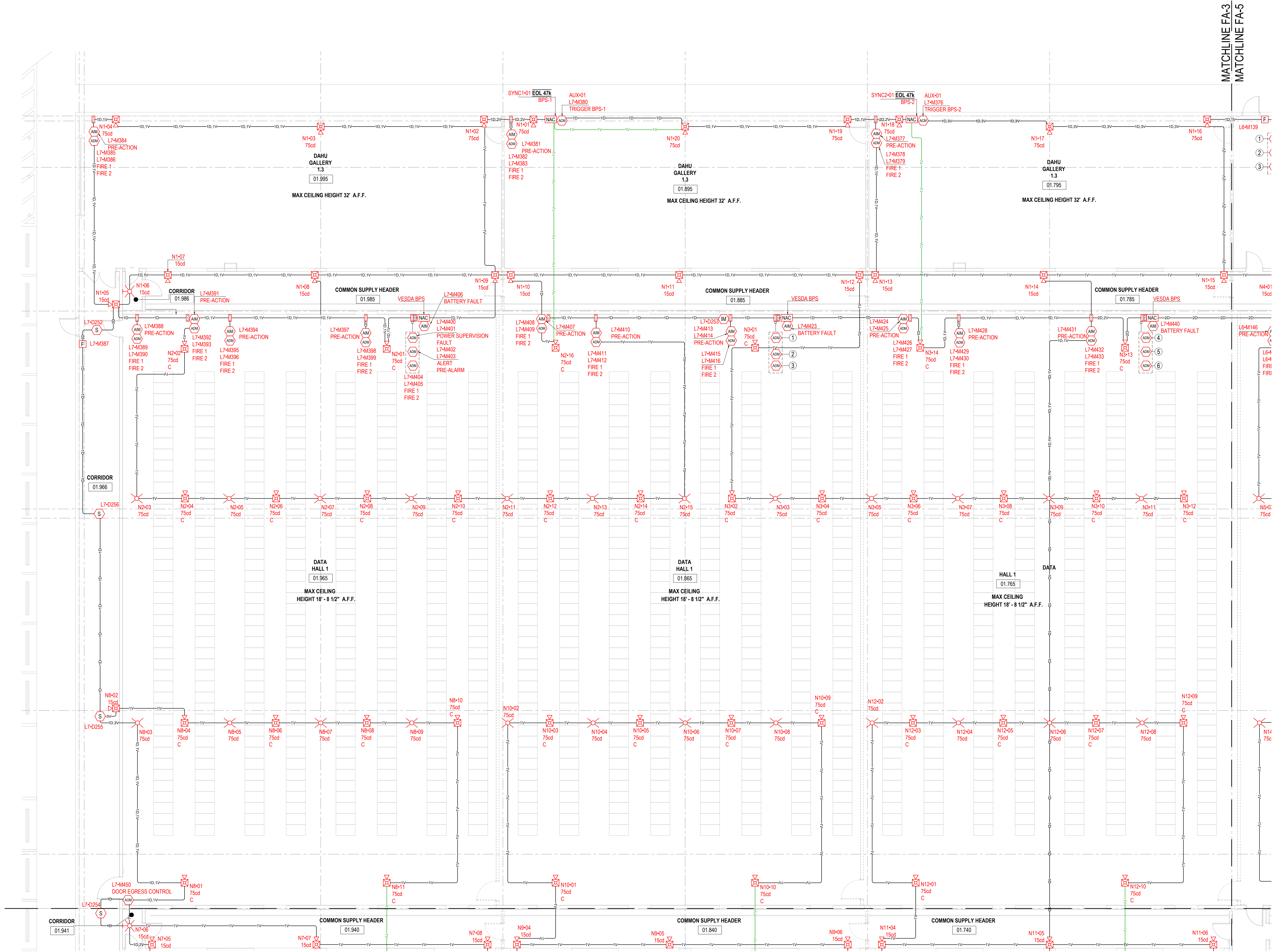
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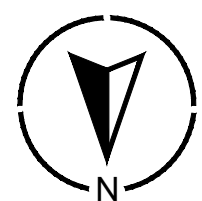
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FA-2



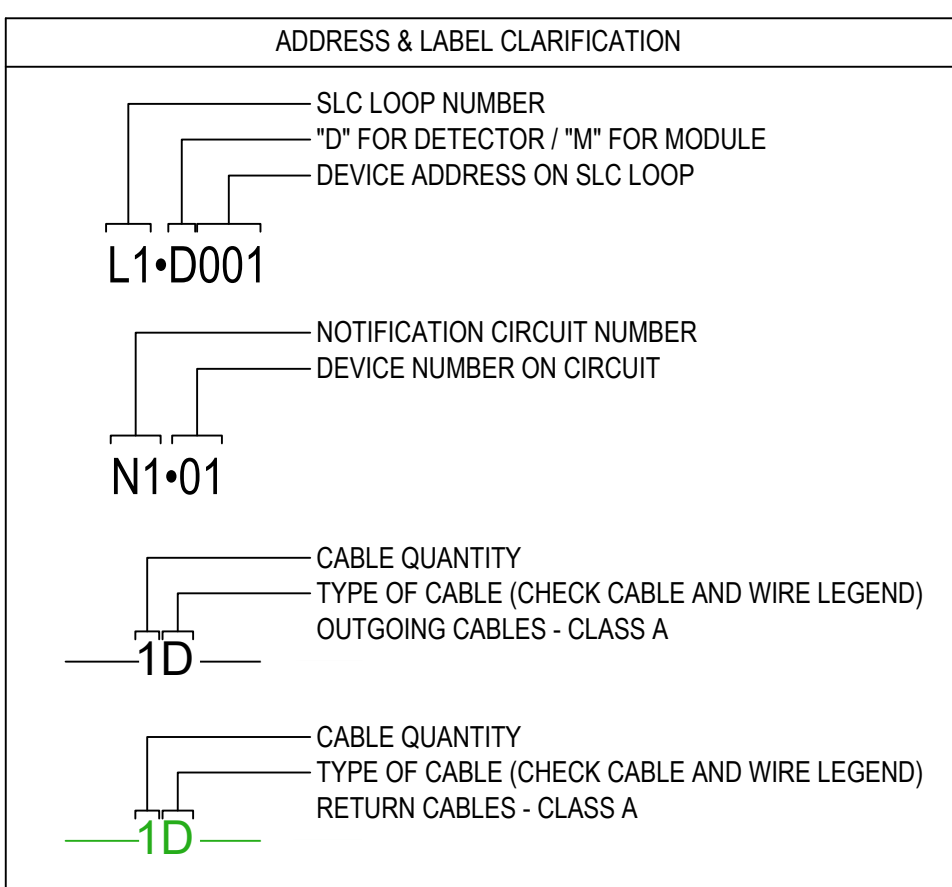
1 FIRST FLOOR PLAN - SECTOR 1



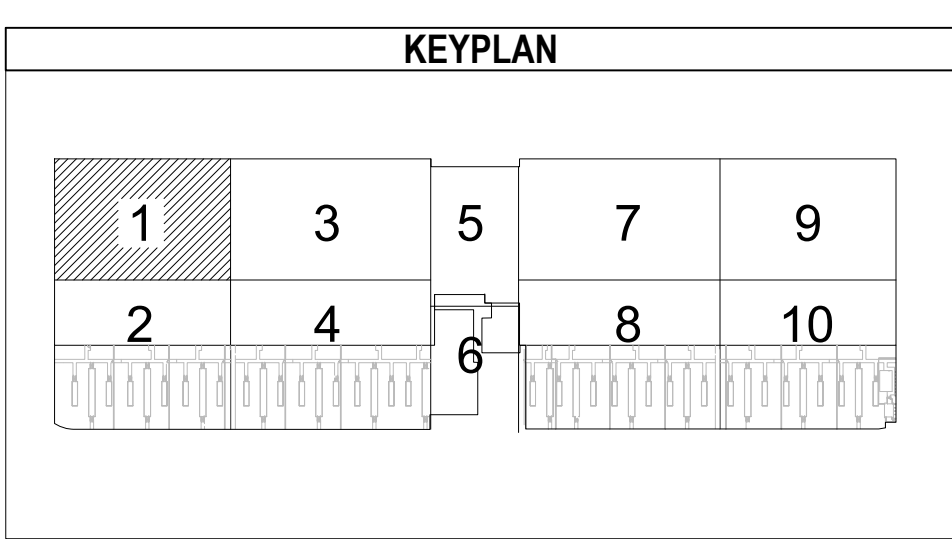
| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
| [FACP]        | FIRE ALARM CONTROL PANEL                                            |
| [DOC]         | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAA]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [AM]          | SINGLE INPUT MODULE                                                 |
| [AM]          | DUAL INPUT MODULE                                                   |
| [AM]          | CONTROL RELAY MODULE                                                |
| [M]           | ISOLATOR MODULE                                                     |
| [AM]          | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [REL]         | SIGNATURE RELEASING MODULE                                          |
| [KS]          | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [S]           | ADDRESSABLE SMOKE DETECTOR                                          |
| [F]           | HORN, WALL, RED                                                     |
| [F]           | HORN STROBE, WALL, RED                                              |
| [F]           | STROBE, WALL, RED                                                   |
| [F]           | HORN STROBE, CEILING, RED                                           |
| [F]           | STROBE, CEILING, RED                                                |
| [WP]          | WEATHERPROOF STROBE, CEILING, RED                                   |
| [WP]          | WEATHERPROOF HORN STROBE, WALL, RED                                 |
| [S]           | CONVENTIONAL DUCT DETECTOR (BY OTHERS)                              |
| [DH]          | REMOTE TEST/RESET STATION (BY OTHERS)                               |
| [DH]          | 120VAC DOOR HOLDER (BY OTHERS)                                      |
| [F]           | MOTORIZED BELL - 120VAC (BY OTHERS)                                 |
| [F]           | LASERSENSE MODULASER - DETECTOR MODULE (FOR REFERENCE ONLY)         |
| [F]           | LASERSENSE MODULASER - STANDARD DISPLAY MODULE (FOR REFERENCE ONLY) |
| [F]           | LASERSENSE MODULASER - COMMAND DISPLAY MODULE (FOR REFERENCE ONLY)  |

| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |     |                                                          |
|---------------------|-----|----------------------------------------------------------|
| LABEL               | AWG | DESCRIPTION                                              |
| A                   | 18  | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
| D                   | 16  | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
| P                   | 14  | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          |
| V                   | 14  | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         |



| ADDRESS & LABEL REFERENCE                          |                                            |                                          |                                                    |                                            |                                          |
|----------------------------------------------------|--------------------------------------------|------------------------------------------|----------------------------------------------------|--------------------------------------------|------------------------------------------|
| ① L7-M417<br>L7-M418<br>POWER SUPERVISION<br>FAULT | ② L7-M419<br>L7-M420<br>ALERT<br>PRE-ALARM | ③ L7-M421<br>L7-M422<br>FIRE 1<br>FIRE 2 | ④ L7-M434<br>L7-M435<br>POWER SUPERVISION<br>FAULT | ⑤ L7-M436<br>L7-M437<br>ALERT<br>PRE-ALARM | ⑥ L7-M438<br>L7-M439<br>FIRE 1<br>FIRE 2 |



LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| # | REVISION      | DATE       |
|---|---------------|------------|
| ① | FIRST RELEASE | 10/23/2023 |
| ② | AHJ REVISION  | 04/18/2025 |
| ③ |               |            |
| ④ |               |            |
| ⑤ |               |            |
| ⑥ |               |            |
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SHEET INDEX:

| SHT # | DWG # | SHEET TITLE             |
|-------|-------|-------------------------|
| 1     | FA-0  | COVER SHEET             |
| 2     | FA-1  | PROJECT INFORMATION     |
| 3     | FA-2  | 1ST FLOOR - OVERALL     |
| 4     | FA-3  | 1ST FLOOR - SECTOR 1    |
| 5     | FA-4  | 1ST FLOOR - SECTOR 2    |
| 6     | FA-5  | 1ST FLOOR - SECTOR 3    |
| 7     | FA-6  | 1ST FLOOR - SECTOR 4    |
| 8     | FA-7  | 1ST FLOOR - SECTOR 5    |
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| 10    | FA-9  | 1ST FLOOR - SECTOR 7    |
| 11    | FA-10 | 1ST FLOOR - SECTOR 8    |
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| 14    | FA-13 | PARTIAL RISER DIAGRAM   |
| 15    | FA-14 | PARTIAL RISER DIAGRAM   |
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| 17    | FA-16 | CALCULATIONS            |
| 18    | FA-17 | CALCULATIONS            |
| 19    | FA-18 | CALCULATIONS            |
| 20    | FA-19 | CALC. & WIRING DIAGRAMS |
| 21    | FA-20 | WIRING DIAGRAMS         |

CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 1  
FA-3

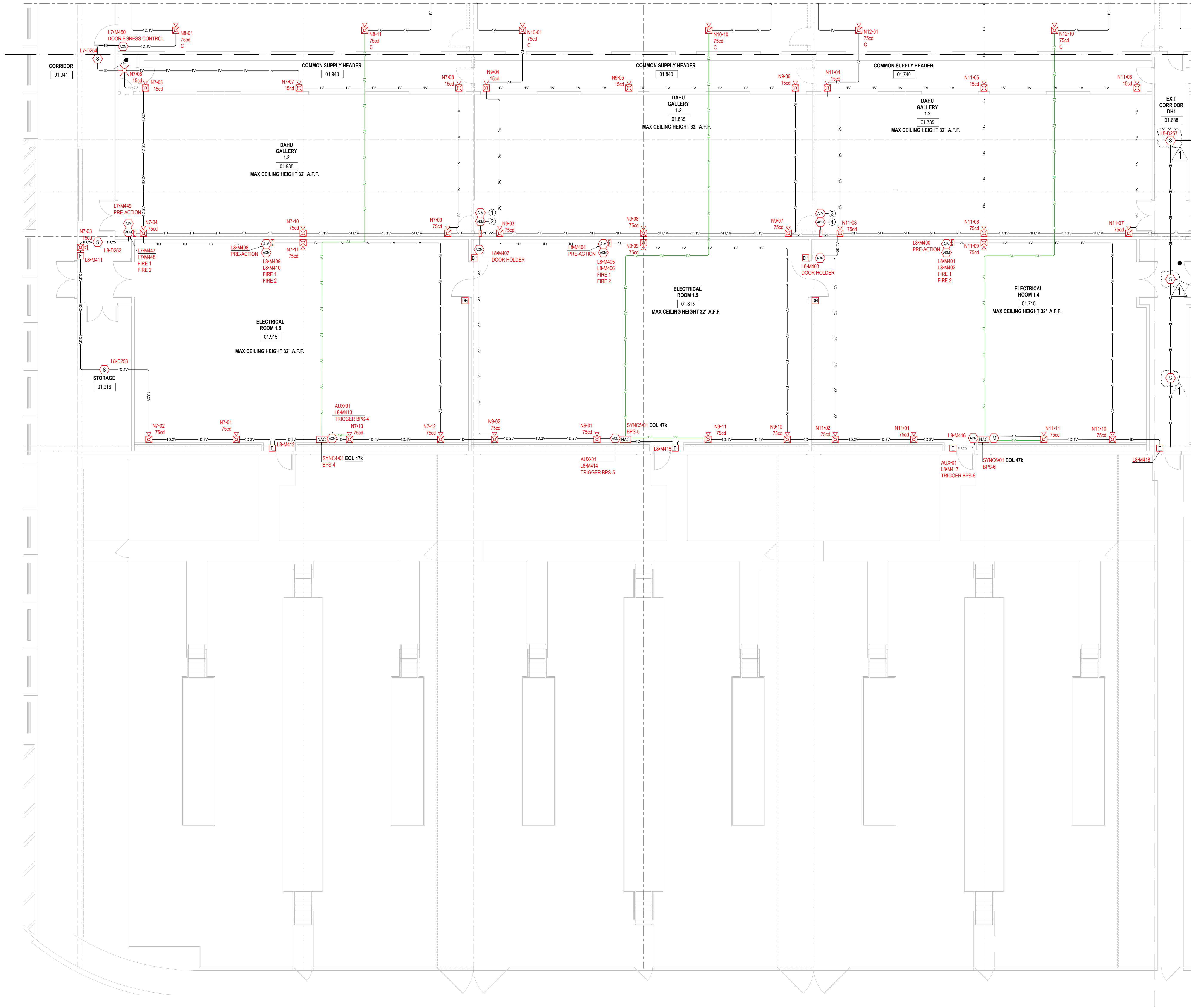
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DRAWN: JEM

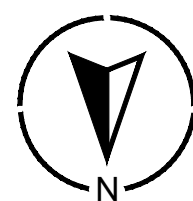
REVIEWED: CSI

DATE: 04/15/2025

DRAWING NUMBER:



1 FIRST FLOOR PLAN - SECTOR 2



| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
| [FACP]        | FIRE ALARM CONTROL PANEL                                            |
| [DOC]         | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAA]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [AM]          | SINGLE INPUT MODULE                                                 |
| [ADM]         | DUAL INPUT MODULE                                                   |
| [CM]          | CONTROL RELAY MODULE                                                |
| [IM]          | ISOLATOR MODULE                                                     |
| [ACM]         | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [REL]         | SIGNATURE RELEASING MODULE                                          |
| [KS]          | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [S]           | ADDRESSABLE SMOKE DETECTOR                                          |
| [F]           | HORN, WALL, RED                                                     |
| [F]           | HORN STROBE, WALL, RED                                              |
| [F]           | STROBE, WALL, RED                                                   |
| [F]           | HORN STROBE, CEILING, RED                                           |
| [F]           | STROBE, CEILING, RED                                                |
| [WP]          | WEATHERPROOF STROBE, CEILING, RED                                   |
| [WP]          | WEATHERPROOF HORN STROBE, WALL, RED                                 |
| [S]           | CONVENTIONAL DUCT DETECTOR (BY OTHERS)                              |
| [S]           | REMOTE TEST/RESET STATION (BY OTHERS)                               |
| [DH]          | 120VAC DOOR HOLDER (BY OTHERS)                                      |
| [F]           | MOTORIZED BELL - 120VAC (BY OTHERS)                                 |
| [F]           | LASERSENSE MODULASER - DETECTOR MODULE (FOR REFERENCE ONLY)         |
| [F]           | LASERSENSE MODULASER - STANDARD DISPLAY MODULE (FOR REFERENCE ONLY) |
| [F]           | LASERSENSE MODULASER - COMMAND DISPLAY MODULE (FOR REFERENCE ONLY)  |

| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |     |                                                          |
|---------------------|-----|----------------------------------------------------------|
| LABEL               | AWG | DESCRIPTION                                              |
| A                   | 18  | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
| D                   | 16  | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
| P                   | 14  | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          |
| V                   | 14  | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         |

| ADDRESS & LABEL CLARIFICATION |                                                                                            |
|-------------------------------|--------------------------------------------------------------------------------------------|
| L1•D001                       | SLC LOOP NUMBER<br>"D" FOR DETECTOR / "M" FOR MODULE<br>DEVICE ADDRESS ON SLC LOOP         |
| N1•01                         | NOTIFICATION CIRCUIT NUMBER<br>DEVICE NUMBER ON CIRCUIT                                    |
| 1D                            | CABLE QUANTITY<br>TYPE OF CABLE (CHECK CABLE AND WIRE LEGEND)<br>OUTGOING CABLES - CLASS A |
| 1D                            | CABLE QUANTITY<br>TYPE OF CABLE (CHECK CABLE AND WIRE LEGEND)<br>RETURN CABLES - CLASS A   |

| ADDRESS & LABEL REFERENCE                |                                          |                         |
|------------------------------------------|------------------------------------------|-------------------------|
| ① L7-M446<br>PRE-ACTION                  | ② L7-M444<br>L7-M445<br>FIRE 1<br>FIRE 2 | ③ L7-M443<br>PRE-ACTION |
| ④ L7-M441<br>L7-M442<br>FIRE 1<br>FIRE 2 |                                          |                         |

| KEYPLAN |    |
|---------|----|
| 1       | 3  |
| 2       | 4  |
| 5       | 6  |
| 7       | 8  |
| 9       | 10 |

LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| # | REVISION      | DATE       |
|---|---------------|------------|
| ① | FIRST RELEASE | 10/23/2023 |
| ② | AHJ REVISION  | 04/18/2025 |
| ③ |               |            |
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| 20    | FA-19 | CALC. & WIRING DIAGRAMS |
| 21    | FA-20 | WIRING DIAGRAMS         |

CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 2  
FA-4

SCALE: 1/8" = 1'-0"

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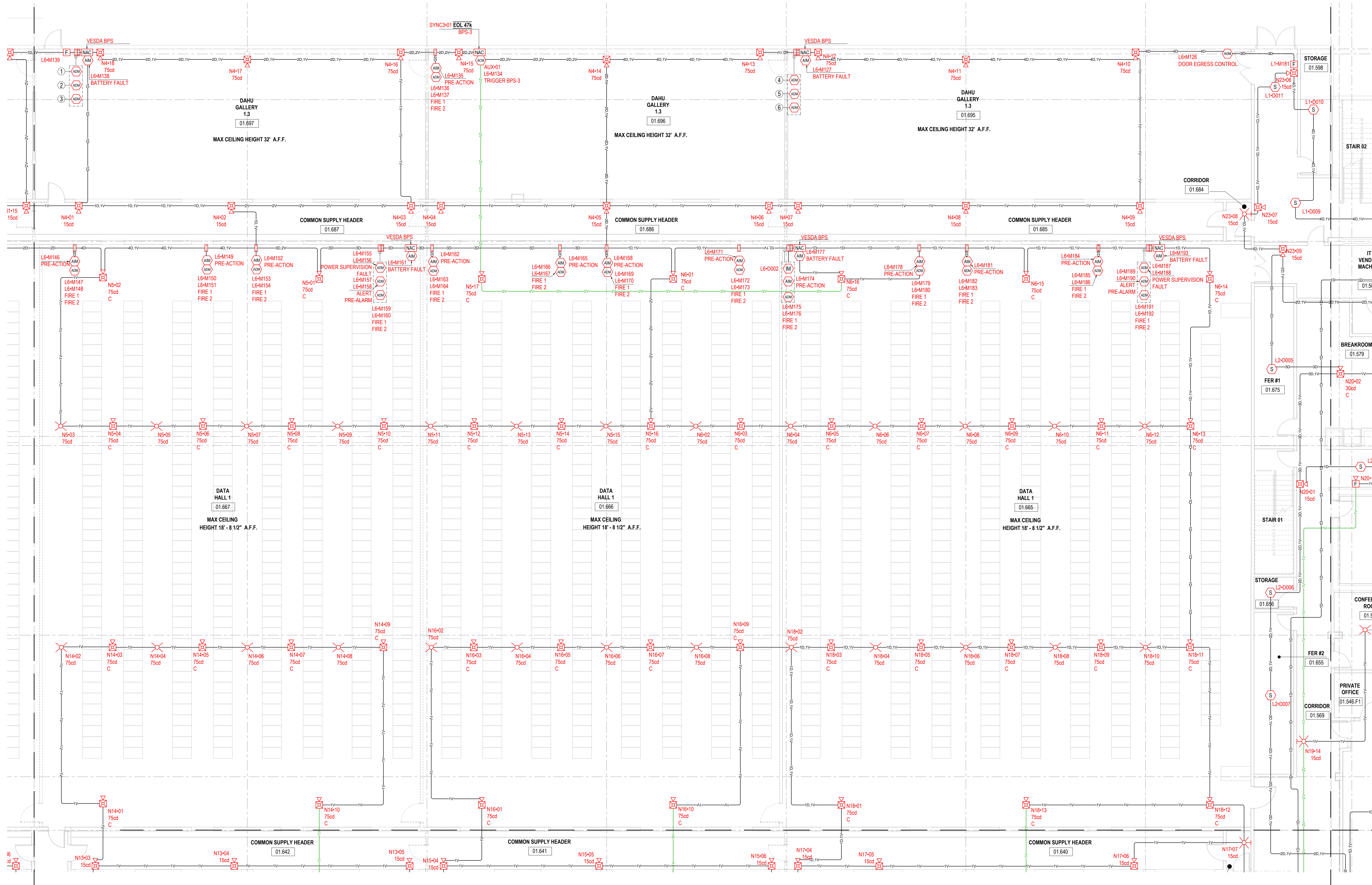
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DATE: 04/15/2025

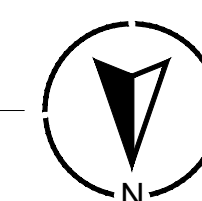
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MATCHLINE FA-3  
MATCHLINE FA-5

MATCHLINE FA-5  
MATCHLINE FA-7



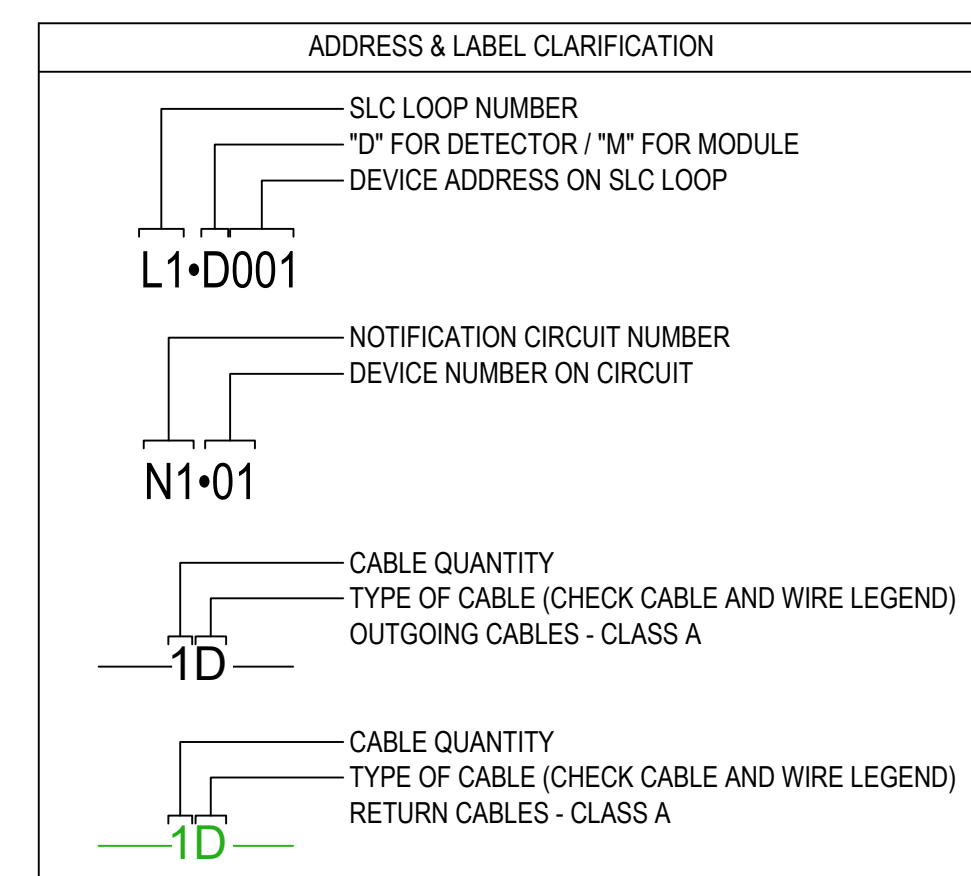
1 FIRST FLOOR PLAN - SECTOR 3



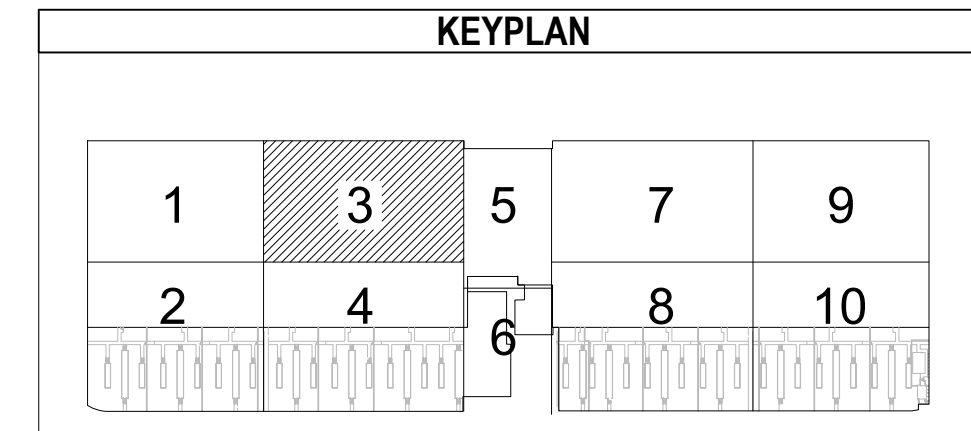
| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
| [FACP]        | FIRE ALARM CONTROL PANEL                                            |
| [DOC]         | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAA]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [AM]          | SINGLE INPUT MODULE                                                 |
| [AM]          | DUAL INPUT MODULE                                                   |
| [REL]         | CONTROL RELAY MODULE                                                |
| [M]           | ISOLATOR MODULE                                                     |
| [SCM]         | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [REL]         | SIGNATURE RELEASING MODULE                                          |
| [KS]          | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [S]           | ADDRESSABLE SMOKE DETECTOR                                          |
| [F]           | HORN, WALL, RED                                                     |
| [F]           | HORN STROBE, WALL, RED                                              |
| [F]           | HORN STROBE, CEILING, RED                                           |
| [F]           | STROBE, WALL, RED                                                   |
| [F]           | STROBE, CEILING, RED                                                |
| [WP]          | WEATHERPROOF STROBE, CEILING, RED                                   |
| [WP]          | WEATHERPROOF HORN STROBE, WALL, RED                                 |
| [S]           | CONVENTIONAL DUCT DETECTOR (BY OTHERS)                              |
| [DH]          | REMOTE TEST/RESET STATION (BY OTHERS)                               |
| [F]           | 120VAC DOOR HOLDER (BY OTHERS)                                      |
| [F]           | MOTORIZED BELL - 120VAC (BY OTHERS)                                 |
| [F]           | LASERSENSE MODULASER - DETECTOR MODULE (FOR REFERENCE ONLY)         |
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| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |     |                                                          |
|---------------------|-----|----------------------------------------------------------|
| LABEL               | AWG | DESCRIPTION                                              |
| A                   | 18  | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
| D                   | 16  | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
| P                   | 14  | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          |
| V                   | 14  | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         |



| ADDRESS & LABEL REFERENCE                          |                                            |                                          |                                                    |                                            |                                          |
|----------------------------------------------------|--------------------------------------------|------------------------------------------|----------------------------------------------------|--------------------------------------------|------------------------------------------|
| ① L6-M140<br>L6-M141<br>POWER SUPERVISION<br>FAULT | ② L6-M142<br>L6-M143<br>ALERT<br>PRE-ALARM | ③ L6-M144<br>L6-M145<br>FIRE 1<br>FIRE 2 | ④ L6-M128<br>L6-M129<br>POWER SUPERVISION<br>FAULT | ⑤ L6-M130<br>L6-M131<br>ALERT<br>PRE-ALARM | ⑥ L6-M132<br>L6-M133<br>FIRE 1<br>FIRE 2 |



LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| #  | REVISION      | DATE       |
|----|---------------|------------|
| 1  | FIRST RELEASE | 10/23/2023 |
| 2  | AHJ REVISION  | 04/18/2025 |
| 3  |               |            |
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| 21    | FA-20 | WIRING DIAGRAMS         |

CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 3  
FA-5

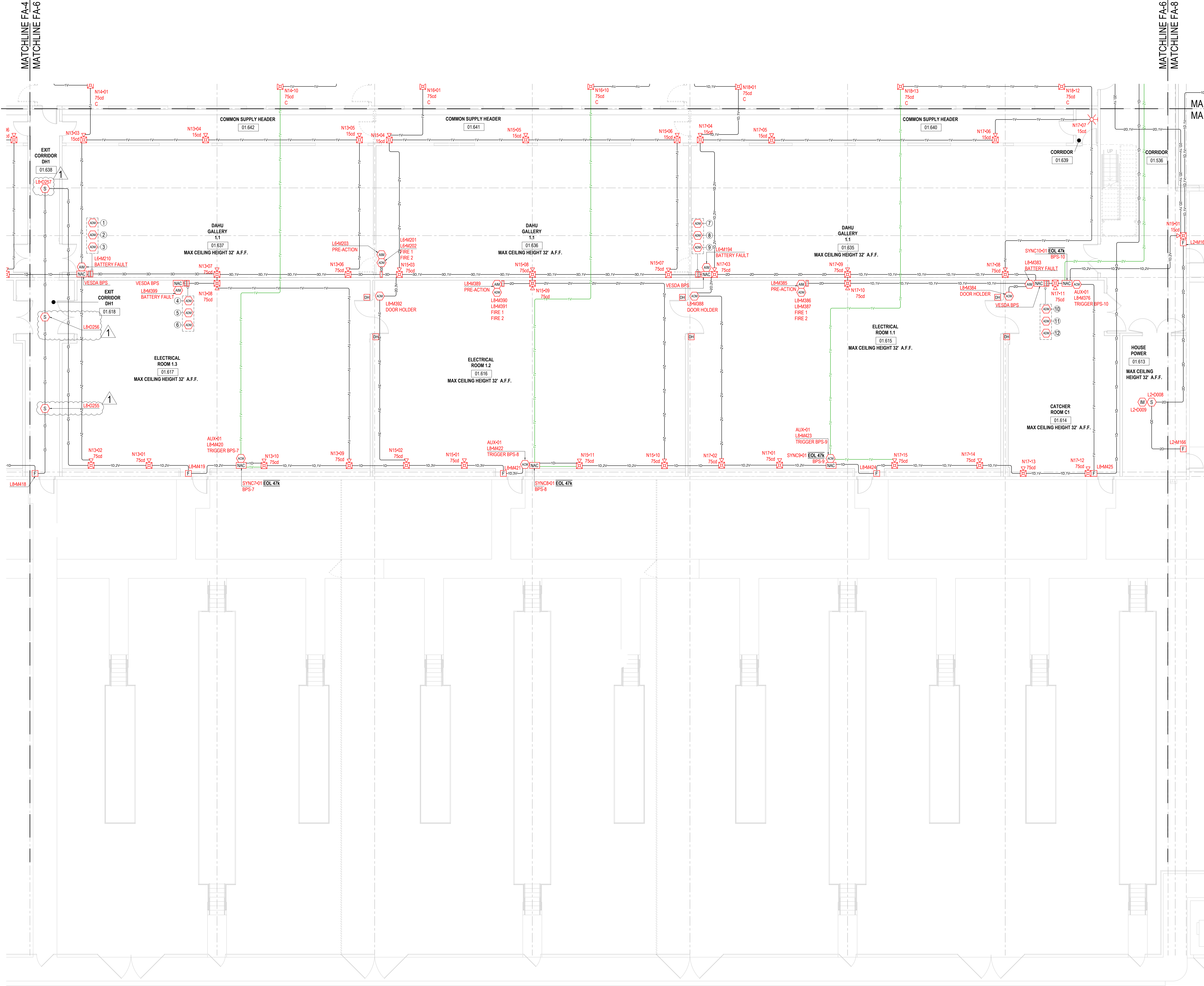
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DRAWN: JEM

REVIEWED: CSI

DATE: 04/15/2025

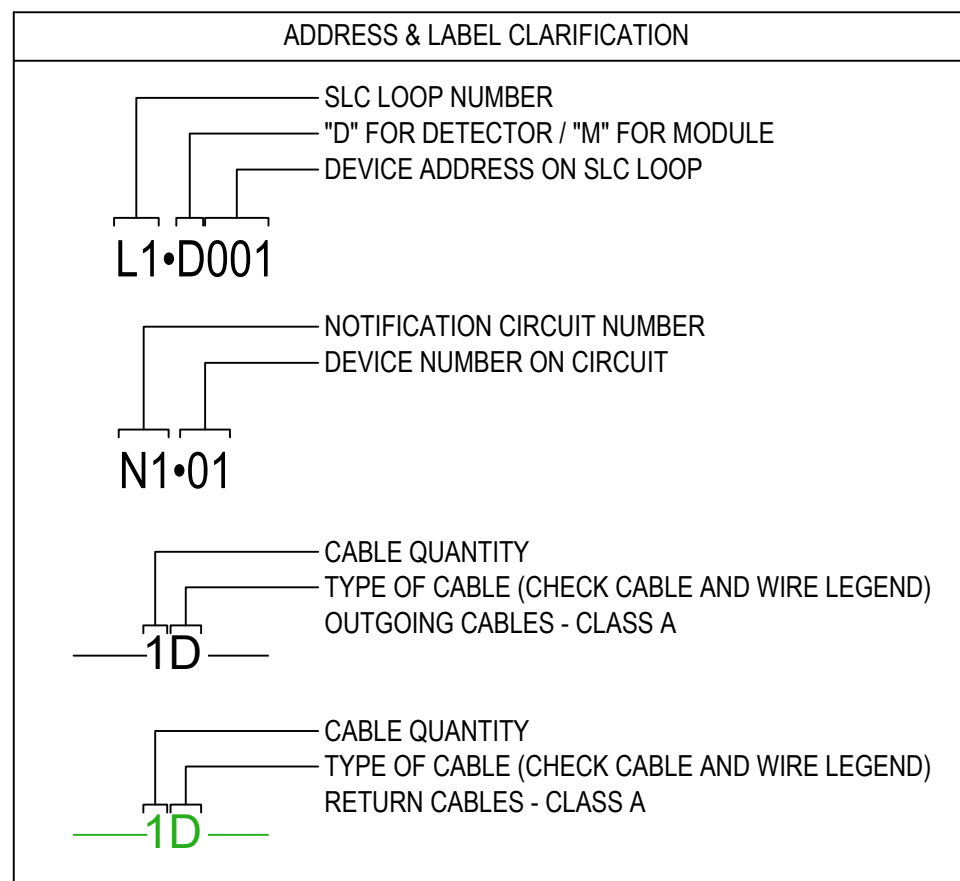
DRAWING NUMBER:



| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
| [FACP]        | FIRE ALARM CONTROL PANEL                                            |
| [FADC]        | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAA]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [SIM]         | SINGLE INPUT MODULE                                                 |
| [CRM]         | DUAL INPUT MODULE                                                   |
| [IM]          | CONTROL RELAY MODULE                                                |
| [SSISM]       | ISOLATOR MODULE                                                     |
| [SRM]         | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [RSS]         | SIGNATURE RELEASING MODULE                                          |
| [MFC]         | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [ASD]         | ADDRESSABLE SMOKE DETECTOR                                          |
| [HORN]        | HORN, WALL, RED                                                     |
| [STROBE]      | HORN STROBE, WALL, RED                                              |
| [STROBE]      | STROBE, WALL, RED                                                   |
| [STROBE]      | HORN STROBE, CEILING, RED                                           |
| [STROBE]      | STROBE, CEILING, RED                                                |
| [WP]          | WEATHERPROOF STROBE, CEILING, RED                                   |
| [WP]          | WEATHERPROOF HORN STROBE, WALL, RED                                 |
| [DDT]         | CONVENTIONAL DUCT DETECTOR (BY OTHERS)                              |
| [RTS]         | REMOTE TEST/RESET STATION (BY OTHERS)                               |
| [DHO]         | 120VAC DOOR HOLDER (BY OTHERS)                                      |
| [MB]          | MOTORIZED BELL - 120VAC (BY OTHERS)                                 |
| [LM]          | LASERSENSE MODULATOR - DETECTOR MODULE (FOR REFERENCE ONLY)         |
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| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |                                                          |
|---------------------|----------------------------------------------------------|
| LABEL               | DESCRIPTION                                              |
| A                   | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
| D                   | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
| P                   | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          |
| V                   | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         |



| ADDRESS & LABEL REFERENCE                                   |                                                                 |                                                                 |
|-------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| ① L6-M208<br>L6-M209<br>POWER SUPERVISION<br>ALERT<br>FAULT | ② L6-M206<br>L6-M207<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM | ③ L6-M204<br>L6-M205<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM |
| ④ L8-M393<br>L8-M394<br>POWER SUPERVISION<br>ALERT<br>FAULT | ⑤ L8-M395<br>L8-M396<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM | ⑥ L8-M397<br>L8-M398<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM |
| ⑦ L6-M199<br>L6-M200<br>POWER SUPERVISION<br>ALERT<br>FAULT | ⑧ L6-M197<br>L6-M198<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM | ⑨ L6-M195<br>L6-M196<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM |
| ⑩ L8-M377<br>L8-M378<br>POWER SUPERVISION<br>ALERT<br>FAULT | ⑪ L8-M379<br>L8-M380<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM | ⑫ L8-M381<br>L8-M382<br>POWER SUPERVISION<br>ALERT<br>PRE-ALARM |

| KEYPLAN |    |
|---------|----|
| 1       | 3  |
| 2       | 4  |
| 5       | 7  |
| 6       | 8  |
| 9       | 10 |

LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
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JOB NUMBER:

X-XXXXXX

| # | REVISION      | DATE       |
|---|---------------|------------|
| ① | FIRST RELEASE | 10/23/2023 |
| ② | AJH REVISION  | 04/18/2025 |
| ③ |               |            |
| ④ |               |            |
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SHEET INDEX:

| SHT # | DWG # | SHEET TITLE             |
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CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 4  
FA-6

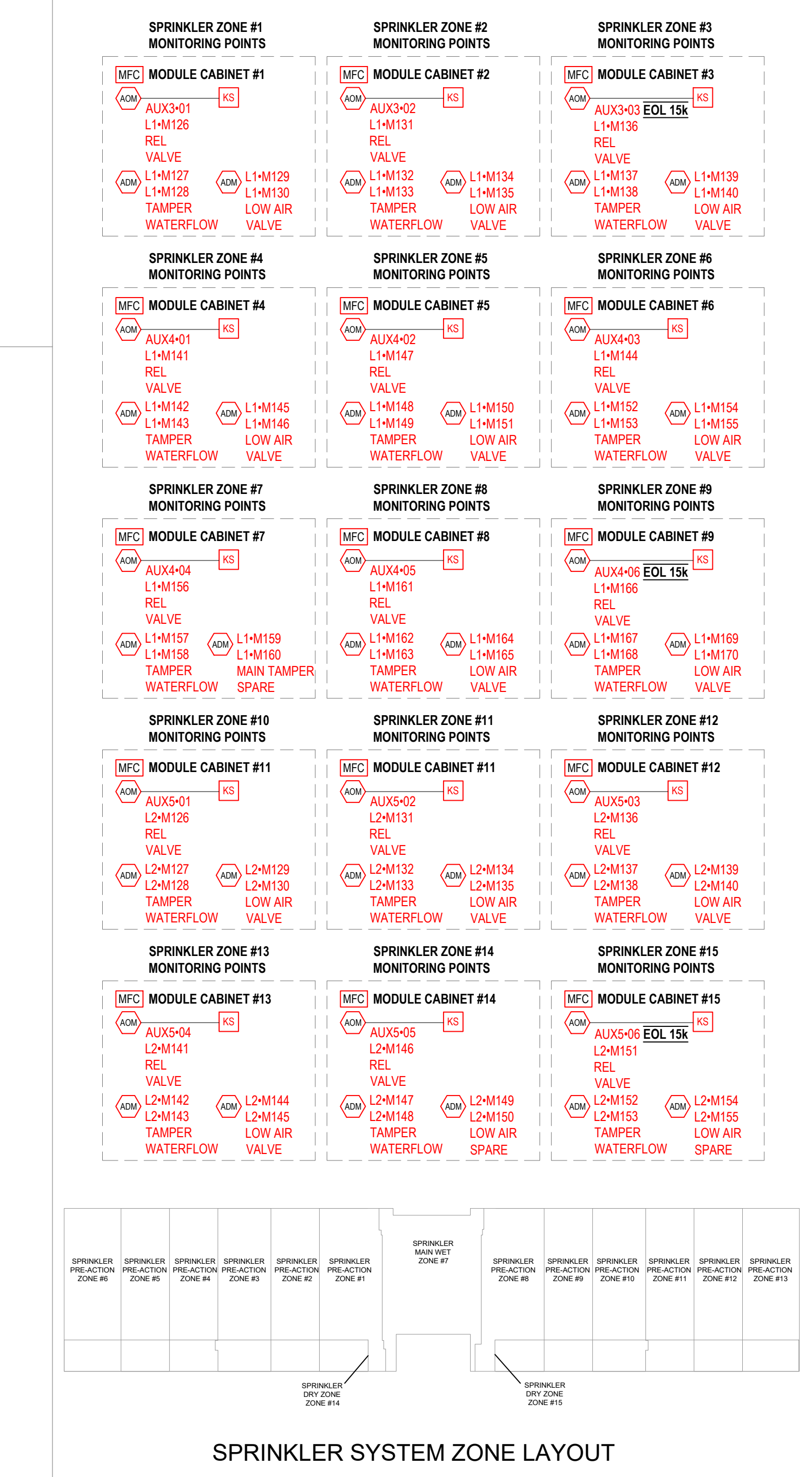
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DRAWN: JEM  
REVIEWED: CSI  
DATE: 04/15/2025

DRAWING NUMBER:

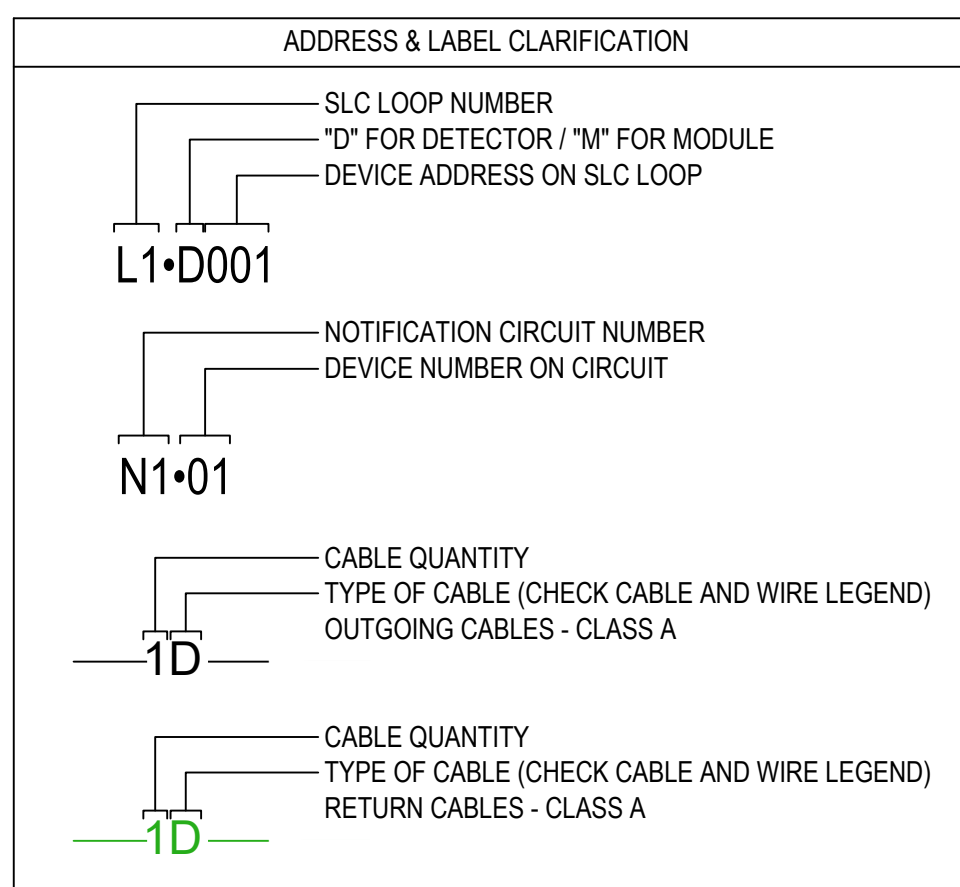
FA-6

1 FIRST FLOOR PLAN - SECTOR 4  
0 5 10 15  
1/8" = 1'-0"





| ABBREVIATIONS       |     |                                                          |
|---------------------|-----|----------------------------------------------------------|
| C                   |     | CEILING MOUNT                                            |
|                     |     |                                                          |
| CABLE & WIRE LEGEND |     |                                                          |
| LABEL               | AWG | DESCRIPTION                                              |
| A                   | 18  | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
| D                   | 16  | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
| P                   | 14  | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          |
| V                   | 14  | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         |



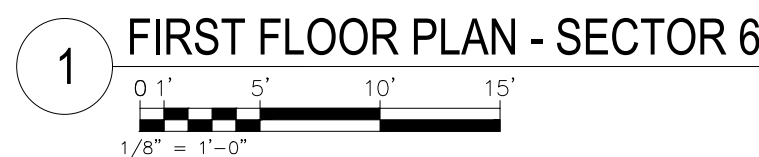
## ADDRESS & LABEL REFERENCE

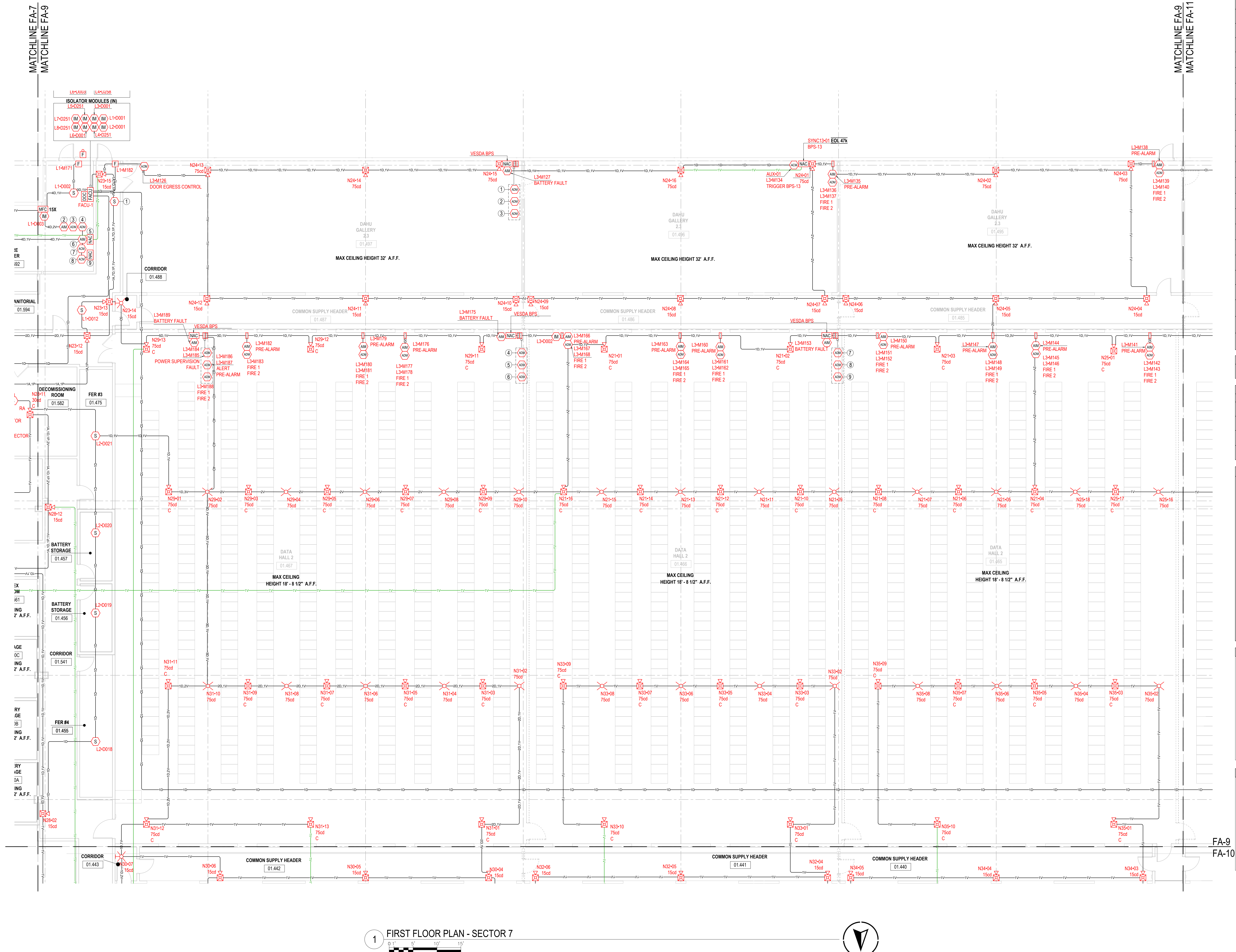
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|---------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------|
| ① L1-D013                                                     | ② L1-M172<br>L1-M173<br>ANTENNA MALFUNCTION                                |                                       |
| ③ L1-M174<br>L1-M175<br>SIGNAL BOOSTER FAILURE<br>LOW BATTERY | ④ L1-M176<br>L1-M177<br>LOSS OF NORMAL POWER<br>FAILURE OF BATTERY CHARGER |                                       |
| ⑤ SYNC12-01 <b>EOL 47k</b><br>BPS-12                          | ⑥ L1-M178<br>BATTERY FAULT                                                 | ⑦ AUX-01<br>L1-M179<br>TRIGGER BPS-12 |
| ⑧ AUX-01<br>L1-M180<br>TRIGGER BPS-22                         | ⑨ SYNC22-01 <b>EOL 47k</b><br>BPS-22                                       | ⑩ L2-M161<br>SHUTDOWN                 |
| ⑪ L2-M162<br>DUCT DETECTOR                                    | ⑫ L2-M163<br>SHUTDOWN                                                      | ⑬ L2-M164<br>DUCT DETECTOR            |
| ⑭ AUX-01<br>L2-M180<br>TRIGGER BPS-11                         | ⑮ SYNC11-01 <b>EOL 47k</b><br>BPS-11                                       |                                       |
| ⑯ L2-M181<br>DOOR EGRESS CONTROL                              |                                                                            |                                       |

**KEYPLAN**

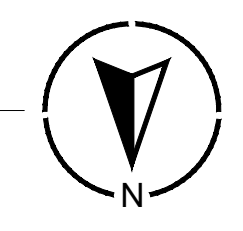
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|---|---|---|---|----|
| 1 | 3 | 5 | 7 | 9  |
| 2 | 4 | 6 | 8 | 10 |

**FA-7**





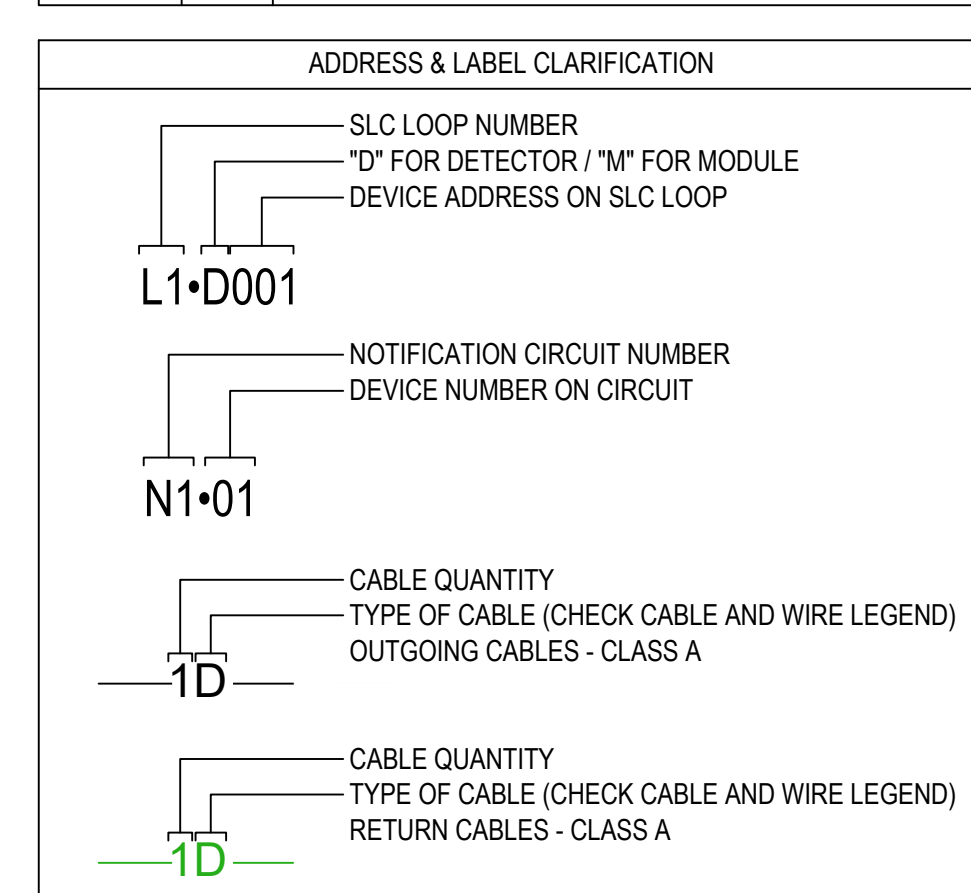
1 FIRST FLOOR PLAN - SECTOR 7



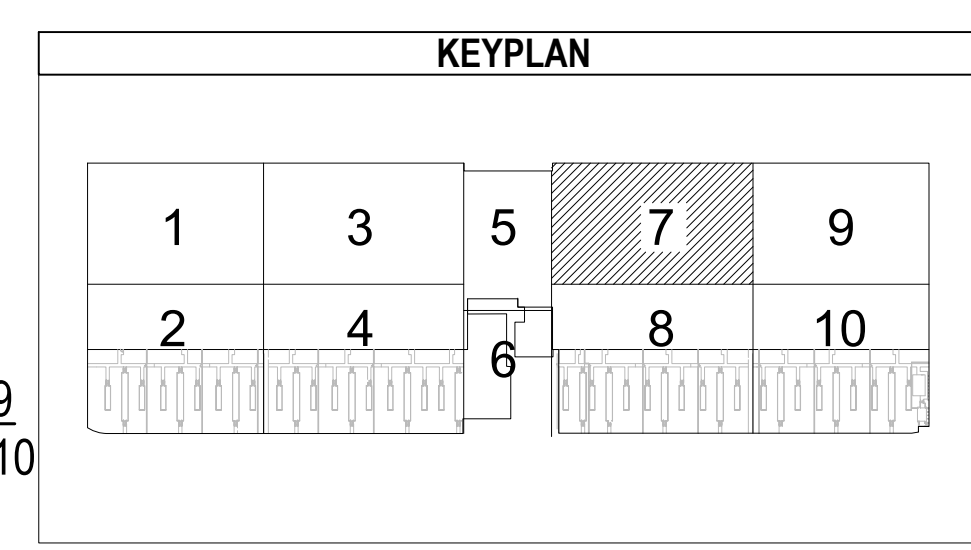
| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
| [FACP]        | FIRE ALARM CONTROL PANEL                                            |
| [DOC]         | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAA]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [AM]          | SINGLE INPUT MODULE                                                 |
| [ADM]         | DUAL INPUT MODULE                                                   |
| [CRM]         | CONTROL RELAY MODULE                                                |
| [IM]          | ISOLATOR MODULE                                                     |
| [SCM]         | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [REL]         | SIGNATURE RELEASING MODULE                                          |
| [KS]          | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [S]           | ADDRESSABLE SMOKE DETECTOR                                          |
| [F]           | HORN, WALL, RED                                                     |
| [F]           | HORN STROBE, WALL, RED                                              |
| [F]           | STROBE, WALL, RED                                                   |
| [F]           | HORN STROBE, CEILING, RED                                           |
| [F]           | STROBE, CEILING, RED                                                |
| [WP]          | WEATHERPROOF STROBE, CEILING, RED                                   |
| [WP]          | WEATHERPROOF HORN STROBE, WALL, RED                                 |
| [S]           | CONVENTIONAL DUCT DETECTOR (BY OTHERS)                              |
| [DH]          | REMOTE TEST/RESET STATION (BY OTHERS)                               |
| [F]           | 120VAC DOOR HOLDER (BY OTHERS)                                      |
| [F]           | MOTORIZED BELL - 120VAC (BY OTHERS)                                 |
| [F]           | LASERSENSE MODULASER - DETECTOR MODULE (FOR REFERENCE ONLY)         |
| [F]           | LASERSENSE MODULASER - STANDARD DISPLAY MODULE (FOR REFERENCE ONLY) |
| [F]           | LASERSENSE MODULASER - COMMAND DISPLAY MODULE (FOR REFERENCE ONLY)  |

| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |     |                                                          |
|---------------------|-----|----------------------------------------------------------|
| LABEL               | AWG | DESCRIPTION                                              |
| A                   | 18  | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
| D                   | 16  | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
| P                   | 14  | AUX POWER - 2 COND. SOLID COPPER FPL UNSHIELDED          |
| V                   | 14  | NAC - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED         |



| ADDRESS & LABEL REFERENCE                          |                                            |                                          |
|----------------------------------------------------|--------------------------------------------|------------------------------------------|
| ① L3-M128<br>L3-M129<br>POWER SUPERVISION<br>FAULT | ② L3-M130<br>L3-M131<br>ALERT<br>PRE-ALARM | ③ L3-M132<br>L3-M133<br>FIRE 1<br>FIRE 2 |
| ④ L3-M169<br>L3-M170<br>POWER SUPERVISION<br>FAULT | ⑤ L3-M171<br>L3-M172<br>ALERT<br>PRE-ALARM | ⑥ L3-M173<br>L3-M174<br>FIRE 1<br>FIRE 2 |
| ⑦ L3-M154<br>L3-M155<br>POWER SUPERVISION<br>FAULT | ⑧ L3-M156<br>L3-M157<br>ALERT<br>PRE-ALARM | ⑨ L3-M158<br>L3-M159<br>FIRE 1<br>FIRE 2 |



LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

| #  | REVISION      | DATE       |
|----|---------------|------------|
| 1  | FIRST RELEASE | 10/23/2023 |
| 2  | AHJ REVISION  | 04/18/2025 |
| 3  |               |            |
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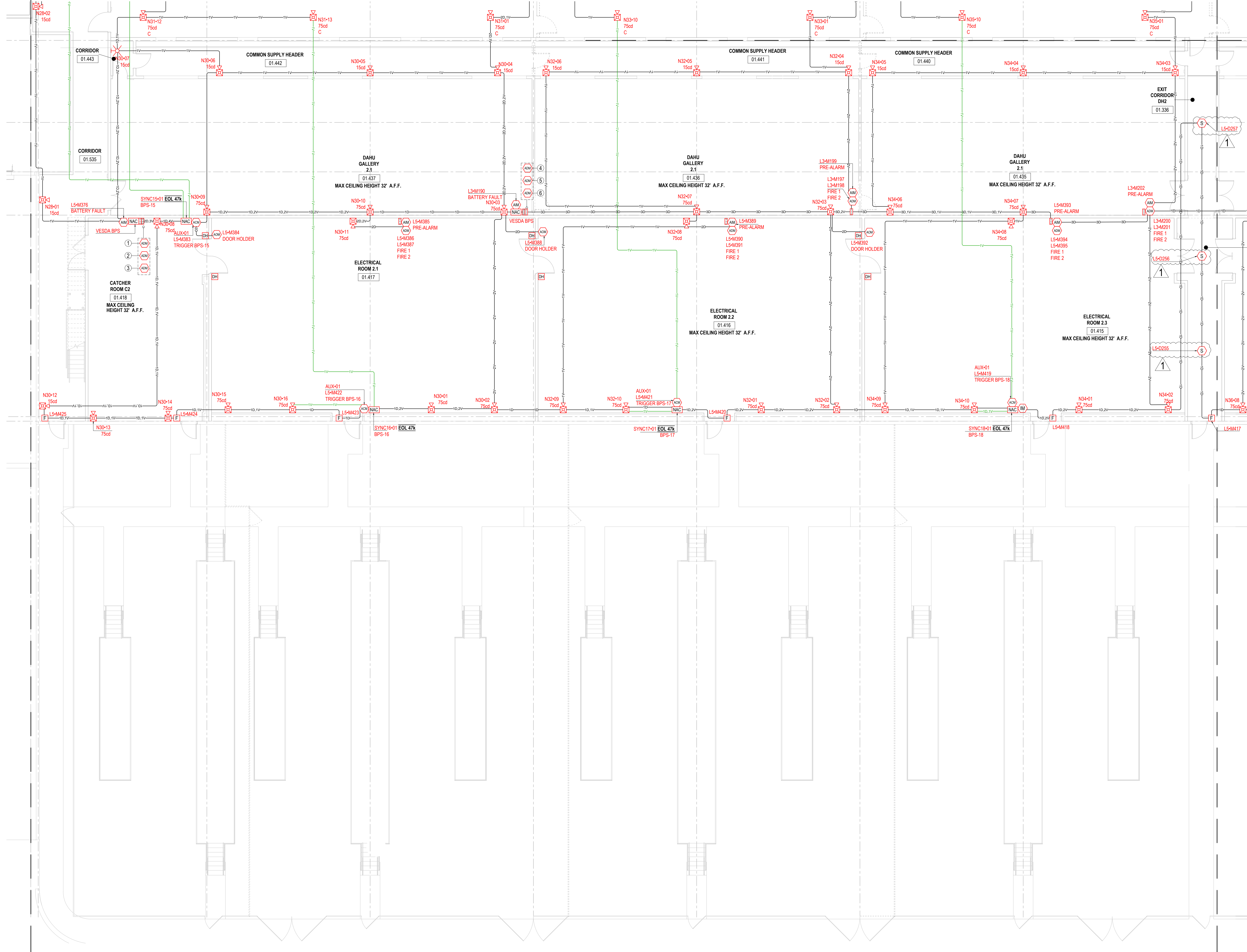
CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:  
FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 7  
FA-9

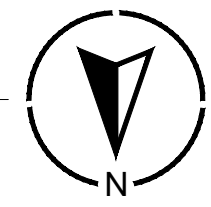
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DRAWN: JEM  
REVIEWED: CSI  
DATE: 04/15/2025

DRAWING NUMBER:

MATCHLINE FA-8  
MATCHLINE FA-10



1 FIRST FLOOR PLAN - SECTOR 8  
0 1' 2' 3' 4' 5' 6' 7' 8' 9' 10' 11' 12' 13' 14' 15'  
1/8" = 1'-0"

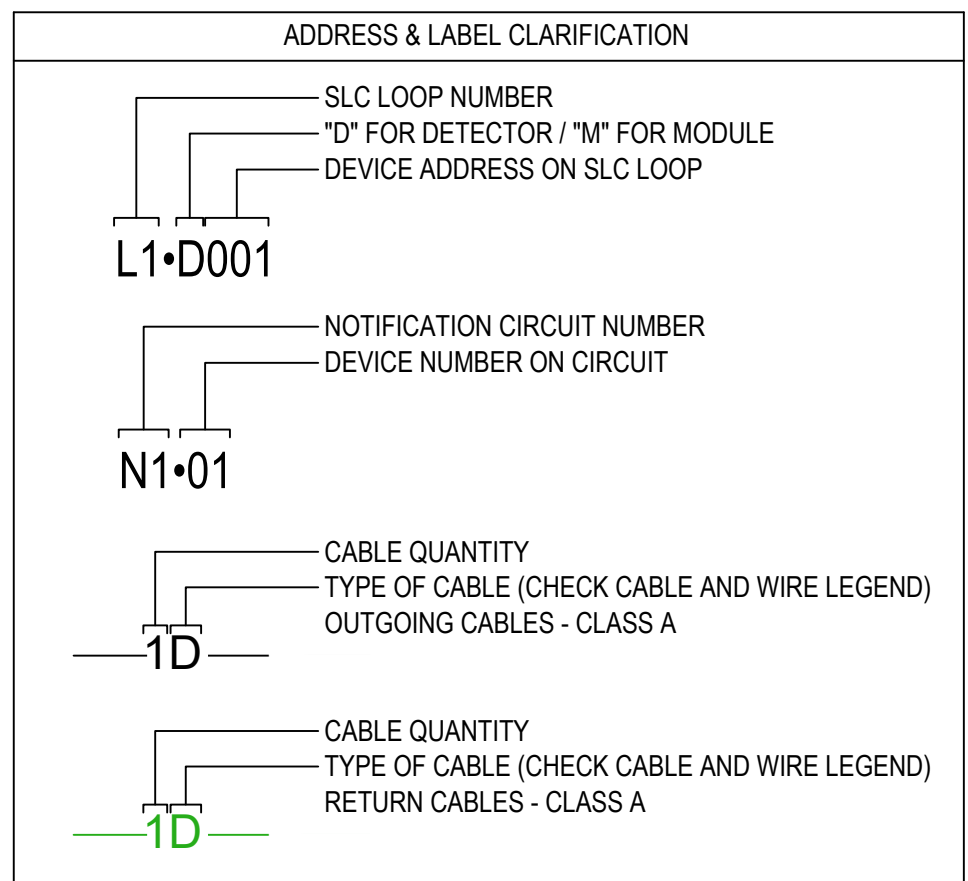


FA-9  
FA-10

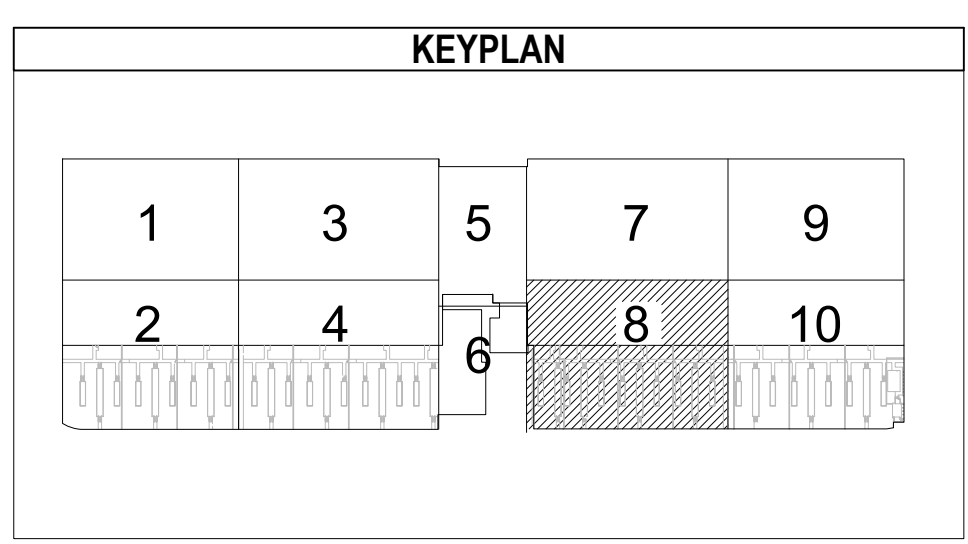
| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
| [FACP]        | FIRE ALARM CONTROL PANEL                                            |
| [DOC]         | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAI]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [AM]          | SINGLE INPUT MODULE                                                 |
| [ADM]         | DUAL INPUT MODULE                                                   |
| [CRM]         | CONTROL RELAY MODULE                                                |
| [IM]          | ISOLATOR MODULE                                                     |
| [SCM]         | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [REL]         | SIGNATURE RELEASING MODULE                                          |
| [KS]          | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [S]           | ADDRESSABLE SMOKE DETECTOR                                          |
| [F]           | HORN, WALL, RED                                                     |
| [F]           | HORN STROBE, WALL, RED                                              |
| [C]           | STROBE, WALL, RED                                                   |
| [C]           | HORN STROBE, CEILING, RED                                           |
| [C]           | STROBE, CEILING, RED                                                |
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| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |     |                                                          |
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| LABEL               | AWG | DESCRIPTION                                              |
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| D                   | 16  | SLC - 2 COND. SOLID COPPER FPL ADDRESSABLE UNSHIELDED    |
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| ADDRESS & LABEL REFERENCE                          |                                            |                                          |
|----------------------------------------------------|--------------------------------------------|------------------------------------------|
| ① L5-M377<br>L5-M378<br>POWER SUPERVISION<br>FAULT | ② L5-M379<br>L5-M380<br>ALERT<br>PRE-ALARM | ③ L5-M381<br>L5-M382<br>FIRE 1<br>FIRE 2 |
| ④ L3-M195<br>L3-M196<br>POWER SUPERVISION<br>FAULT | ⑤ L3-M193<br>L3-M194<br>ALERT<br>PRE-ALARM | ⑥ L3-M191<br>L3-M192<br>FIRE 1<br>FIRE 2 |



LICENSE:

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| ② | AJH REVISION  | 04/18/2025 |
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| 21    | FA-20 | WIRING DIAGRAMS         |

CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 8  
FA-10

SCALE: 1/8" = 1'-0"

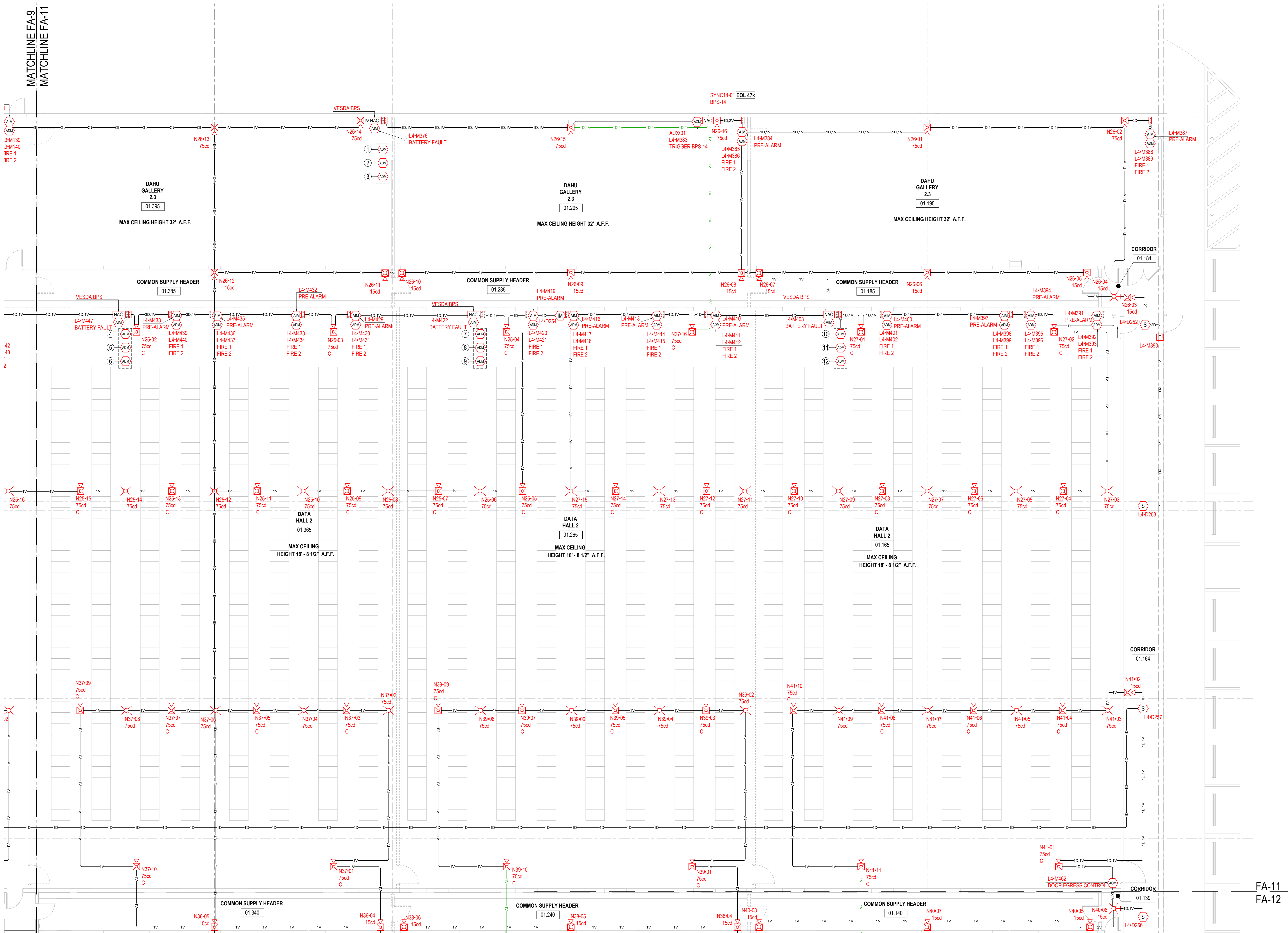
DRAWN: JEM

REVIEWED: CSI

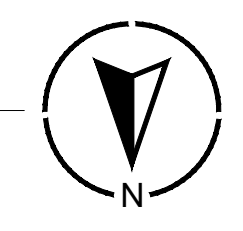
DATE: 04/15/2025

DRAWING NUMBER:

FA-10



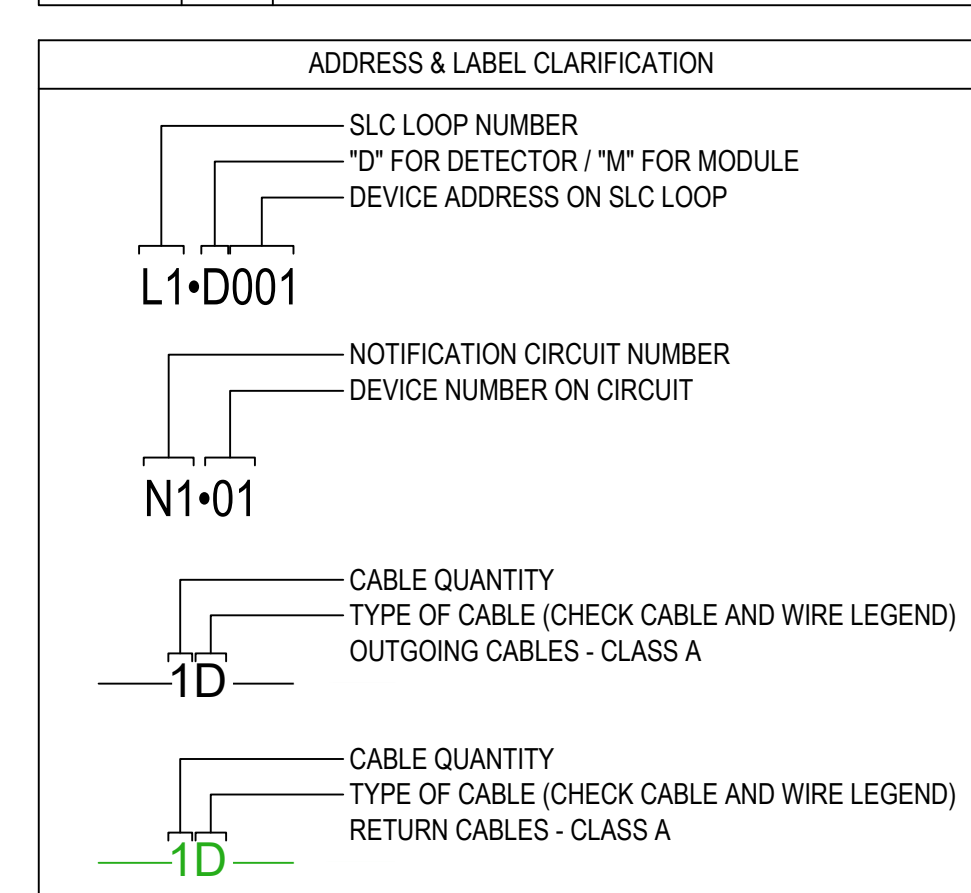
1 FIRST FLOOR PLAN - SECTOR 9



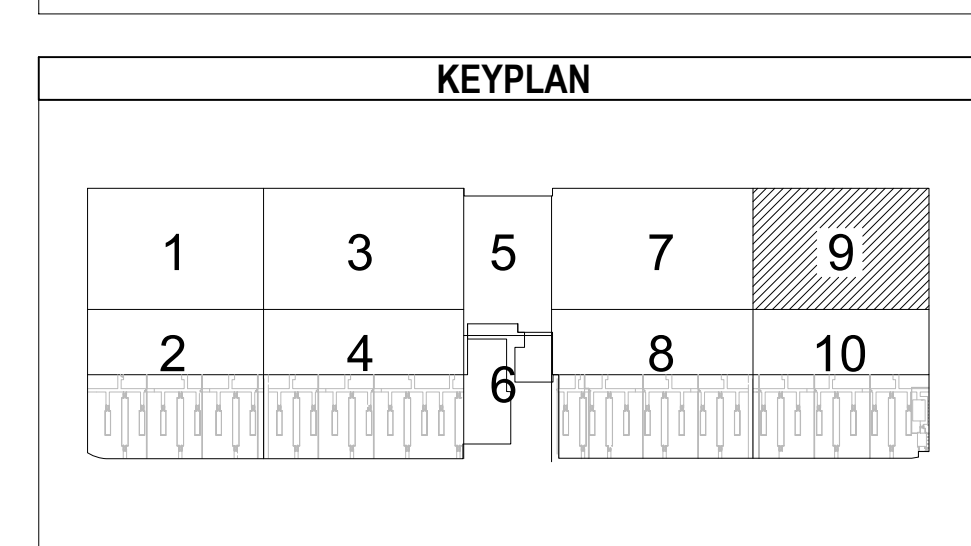
| DEVICE LEGEND |                                                                     |
|---------------|---------------------------------------------------------------------|
| SYMBOL        | DESCRIPTION                                                         |
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| [DOC]         | FIRE ALARM DOCUMENT CABINET                                         |
| [NAC]         | 6.5A, REMOTE POWER SUPPLY                                           |
| [FAA]         | FIRE ALARM ANNUNCIATOR                                              |
| [F]           | DOUBLE ACTION FIRE ALARM STATION                                    |
| [AM]          | SINGLE INPUT MODULE                                                 |
| [DM]          | DUAL INPUT MODULE                                                   |
| [RM]          | CONTROL RELAY MODULE                                                |
| [IM]          | ISOLATOR MODULE                                                     |
| [SCM]         | SIGNATURE SINGLE INPUT SIGNAL SYNCHRONIZATION MODULE                |
| [REL]         | SIGNATURE RELEASING MODULE                                          |
| [KS]          | RELEASING SERVICE SOLENOID DISCONNECT SWITCH                        |
| [MFC]         | MULTI-FUNCTION CABINET                                              |
| [S]           | ADDRESSABLE SMOKE DETECTOR                                          |
| [F]           | HORN, WALL, RED                                                     |
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| ABBREVIATIONS |               |
|---------------|---------------|
| C             | CEILING MOUNT |

| CABLE & WIRE LEGEND |     |                                                          |
|---------------------|-----|----------------------------------------------------------|
| LABEL               | AWG | DESCRIPTION                                              |
| A                   | 18  | ANNUNCIATOR - 2 COND. SOLID COPPER FPL ANALOG UNSHIELDED |
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| ADDRESS & LABEL REFERENCE                          |                                            |                                          |
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| ① L4-M377<br>L4-M378<br>POWER SUPERVISION<br>FAULT | ② L4-M379<br>L4-M380<br>ALERT<br>PRE-ALARM | ③ L4-M381<br>L4-M382<br>FIRE 1<br>FIRE 2 |
| ④ L4-M441<br>L4-M442<br>POWER SUPERVISION<br>FAULT | ⑤ L4-M443<br>L4-M444<br>ALERT<br>PRE-ALARM | ⑥ L4-M445<br>L4-M446<br>FIRE 1<br>FIRE 2 |
| ⑦ L4-M423<br>L4-M424<br>POWER SUPERVISION<br>FAULT | ⑧ L4-M425<br>L4-M426<br>ALERT<br>PRE-ALARM | ⑨ L4-M427<br>L4-M428<br>FIRE 1<br>FIRE 2 |
| ⑩ L4-M404<br>L4-M405<br>POWER SUPERVISION<br>FAULT | ⑪ L4-M406<br>L4-M407<br>ALERT<br>PRE-ALARM | ⑫ L4-M408<br>L4-M409<br>FIRE 1<br>FIRE 2 |



LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| # | REVISION      | DATE       |
|---|---------------|------------|
| ① | FIRST RELEASE | 10/23/2023 |
| ② | AHJ REVISION  | 04/18/2025 |
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CERTIFIED FIRE ALARM DESIGNER:

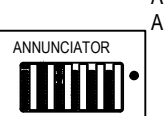
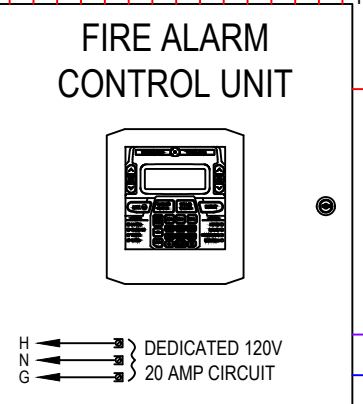
SHEET TITLE:  
FIRE ALARM SYSTEM  
FIRE ALARM  
FIRST FLOOR PLAN -  
SECTOR 9  
FA-11

SCALE: 1/8" = 1'-0"  
DRAWN: JEM  
REVIEWED: CSI  
DATE: 04/15/2025

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CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
PARTIAL RISER  
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FA-14

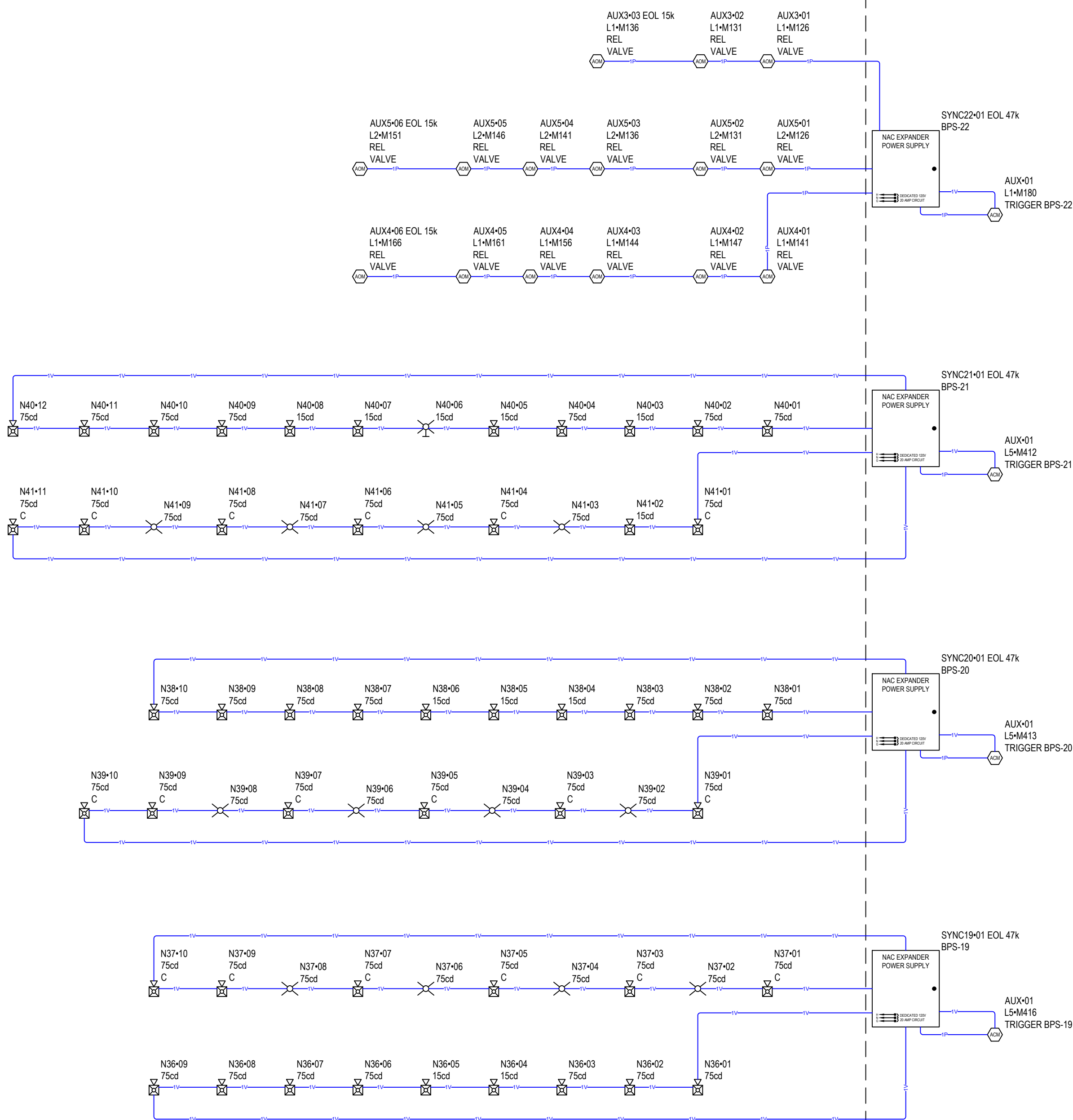
SCALE: N.T.S.

DRAWN: JEM

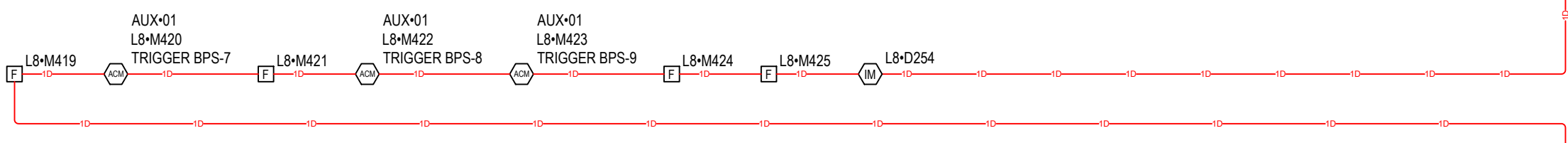
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DATE: 01/15/2005

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PARTIAL RISER DIAGRAM



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LICENSE:

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CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
PARTIAL RISER  
DIAGRAM  
FA-15

SCALE: N.T.S.

DRAWN: JEM

REVIEWED: CSI

DATE: 04/15/2025

DRAWING NUMBER:

| PANEL FACU-1 (EST4 VOICE PANEL) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                        |                        |                          |                                                                        |                  |                                |                  |                                 |  |        |
|----------------------------------------------------------------------------------------------|----------------------------------------|------------------------|--------------------------|------------------------------------------------------------------------|------------------|--------------------------------|------------------|---------------------------------|--|--------|
|                                                                                              |                                        | STANDBY CURRENT (AMPS) |                          |                                                                        |                  | SECONDARY ALARM CURRENT (AMPS) |                  |                                 |  |        |
|                                                                                              |                                        | QTY                    | PART NO.                 | DESCRIPTION                                                            | CURRENT DRAW (A) | TOTAL (A)                      | CURRENT DRAW (A) | TOTAL (A)                       |  |        |
| PANEL COMPONENTS                                                                             |                                        | 1                      | 3-MODCOM                 | Modem Communicator and Digib                                           | 0.06             | 0.06                           | 0.095            | 0.095                           |  |        |
|                                                                                              |                                        | 4                      | 3-SDCC2                  | Signature Dual Driver Controller (LRM)                                 | 0.264            | 1.056                          | 0.336            | 1.344                           |  |        |
|                                                                                              |                                        | 1                      | 4-CPU                    | Main CPU                                                               | 0.211            | 0.211                          | 0.211            | 0.211                           |  |        |
|                                                                                              |                                        | 1                      | 4-LCDLE                  | DISPLAY MAIN LCD MODULE                                                | 0.04             | 0.04                           | 0.093            | 0.093                           |  |        |
|                                                                                              |                                        | 1                      | 4-PPSM                   | Primary Power Supply 120V                                              | -                | -                              | -                | -                               |  |        |
| CIRCUIT                                                                                      | SYMBOL                                 | QTY                    | PART NO.                 | DESCRIPTION                                                            | CURRENT DRAW (A) | TOTAL (A)                      | CURRENT DRAW (A) | TOTAL (A)                       |  |        |
| FACU-1-MNN                                                                                   | [FAM]                                  | 1                      | 4-4ANN (BASE)            | Metallic Inertia Annunciator w/4-ANNCPU, 4-LCDANN, 4-NET-SM, 4-4ANNMIT | -                | -                              | -                | -                               |  |        |
| FACU-1-AUX1                                                                                  | [FAM]                                  | 1                      | 4-4ANN (BASE)            | Metallic Inertia Annunciator w/4-ANNCPU, 4-LCDANN, 4-NET-SM, 4-4ANNMIT | 0.2              | 0.2                            | 0.253            | 0.253                           |  |        |
| FACU-1-1                                                                                     | [F]                                    | 3                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 2                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 2                      | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 18                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 2                      | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 11                     | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [REL]                                  | 9                      | SIGA-REL                 | Signature Releasing Module                                             | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 4                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
| FACU-1-2                                                                                     | [S]                                    | 12                     | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 9                      | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 12                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 19                     | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [REL]                                  | 6                      | SIGA-REL                 | Signature Releasing Module                                             | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 19                     | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 29                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
| FACU-1-3                                                                                     | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 2                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 21                     | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 31                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 5                      | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 9                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 7                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
| FACU-1-4                                                                                     | [S]                                    | 5                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 7                      | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 11                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 2                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 5                      | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 1                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 20                     | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 31                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
| FACU-1-5                                                                                     | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 1                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 2                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 19                     | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 25                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 4                      | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 9                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 7                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
| FACU-1-6                                                                                     | [S]                                    | 5                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 7                      | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 11                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 2                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 5                      | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 1                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 20                     | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 31                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
| FACU-1-7                                                                                     | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 1                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 2                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 1                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 19                     | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 25                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 3                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 4                      | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | [F]                                    | 9                      | SIGA-278                 | Double Action Fire Alarm Station                                       | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 7                      | SIGA-CC1S                | Signature single input signal synchronization module                   | -                | -                              | -                | -                               |  |        |
| FACU-1-8                                                                                     | [S]                                    | 5                      | SIGA-CR                  | Control Relay Module                                                   | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 7                      | SIGA-CT1                 | Single Input Module                                                    | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 11                     | SIGA-CT2                 | Dual Input Module                                                      | -                | -                              | -                | -                               |  |        |
|                                                                                              | [M]                                    | 2                      | SIGA-IM2                 | Isolator Module                                                        | -                | -                              | -                | -                               |  |        |
|                                                                                              | [S]                                    | 5                      | SIGA-OSD w/SIGA-SB4 BASE | Intelligent Optical Smoke Detector                                     | -                | -                              | -                | -                               |  |        |
|                                                                                              | TOTAL STANDBY (A)                      |                        |                          |                                                                        |                  | 1.5679                         |                  | TOTAL ALARM (A)                 |  | 1.9960 |
|                                                                                              | REQUIRED STANDBY TIME = 24 HOURS       |                        |                          |                                                                        |                  |                                |                  | REQUIRED ALARM TIME = 5 MINUTES |  |        |
|                                                                                              | SECONDARY STANDBY LOAD (A)             |                        |                          |                                                                        |                  | 1.5679                         | 24               | 37.6989                         |  |        |
|                                                                                              | SECONDARY ALARM LOAD (A)               |                        |                          |                                                                        |                  | 1.9960                         | 0.0833           | 6.1661                          |  |        |
|                                                                                              | STANDBY AND ALARM SUBTOTAL (AMP HOURS) |                        |                          |                                                                        |                  |                                |                  | 37.7743                         |  |        |
| DERATING FACTOR                                                                              |                                        |                        |                          |                                                                        |                  |                                | 1.25             |                                 |  |        |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                                      |                                        |                        |                          |                                                                        |                  |                                | 47.2175          |                                 |  |        |
| PROVIDE (2) 12V 55AH BATTERIES                                                               |                                        |                        |                          |                                                                        |                  |                                |                  |                                 |  |        |

| PANEL BPS-9 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |        |     |           |                                                      |                                  |           |                                |           |       |  |
|----------------------------------------------------------------------------------|--------|-----|-----------|------------------------------------------------------|----------------------------------|-----------|--------------------------------|-----------|-------|--|
| PANEL COMPONENTS                                                                 |        | QTY | PART NO   | DESCRIPTION                                          | STANDBY CURRENT (AMPS)           |           | SECONDARY ALARM CURRENT (AMPS) |           |       |  |
|                                                                                  |        |     |           |                                                      | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |       |  |
| CIRCUIT                                                                          | SYMBOL | QTY | PART NO   | DESCRIPTION                                          | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |       |  |
| BPS-9-AUX                                                                        |        | 1   | SIGA-CC1S | Signature single input signal synchronization module | 0                                | 0         | 0                              | 0         |       |  |
|                                                                                  |        | 3   | GAVRF     | Wall horn-strobe, red, FIRE 15cd                     | 0                                | 0         | 0.05                           | 0.15      |       |  |
| BPS-9-N17                                                                        |        | 11  | GAVRF     | Wall horn-strobe, red, FIRE 75cd                     | 0                                | 0         | 0.05                           | 0.55      |       |  |
|                                                                                  |        | 1   | GAVRF     | Wall strobe, red, FIRE 15cd                          | 0                                | 0         | 0.036                          | 0.036     |       |  |
| BPS-9-N18                                                                        |        | 8   | GCAVRF    | Horn/Strobe, Ceiling, Red, Fire 75cd                 | 0                                | 0         | 0.06                           | 0.48      |       |  |
|                                                                                  |        | 5   | GCVRF     | Strobe, Ceiling, Red, Fire 75cd                      | 0                                | 0         | 0.045                          | 0.225     |       |  |
| TOTAL STANDBY (A)                                                                |        |     |           |                                                      | 0.07                             |           | TOTAL ALARM(A)                 |           | 1.711 |  |
|                                                                                  |        |     |           |                                                      | REQUIRED STANDBY TIME = 24 HOURS |           |                                |           |       |  |
|                                                                                  |        |     |           |                                                      | REQUIRED ALARM TIME = 5 MINUTES  |           |                                |           |       |  |
| SECONDARY STANDBY LOAD (A)                                                       |        |     |           |                                                      | 0.07                             | 24        | 1.68                           |           |       |  |
| SECONDARY ALARM LOAD (A)                                                         |        |     |           |                                                      | 1.711                            | 0.08333   | 0.14258                        |           |       |  |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                           |        |     |           |                                                      | 1.82258                          |           |                                |           |       |  |
| DERATING FACTOR                                                                  |        |     |           |                                                      | 1.25                             |           |                                |           |       |  |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                          |        |     |           |                                                      | 2.27823                          |           |                                |           |       |  |
| PROVIDE (2) 12V 7AH BATTERIES                                                    |        |     |           |                                                      |                                  |           |                                |           |       |  |

| PANEL BPS-1 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                     |     |                 |                                                      |                                  |           |                                |           |  |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|-----------------|------------------------------------------------------|----------------------------------|-----------|--------------------------------|-----------|--|
| PANEL COMPONENTS                                                                 |                                                                                     | QTY | PART NO.        | DESCRIPTION                                          | STANDBY CURRENT (AMPS)           |           | SECONDARY ALARM CURRENT (AMPS) |           |  |
|                                                                                  |                                                                                     |     |                 |                                                      | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |  |
|                                                                                  |                                                                                     | 1   | BPS6A Mainboard | Mainboard for BPS6A assembly                         | 0.07                             | 0.07      | 0.27                           | 0.27      |  |
| CIRCUIT                                                                          | SYMBOL                                                                              | QTY | PART NO.        | DESCRIPTION                                          | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |  |
| BPS-1AUX                                                                         |  | 1   | SIGA-CC1S       | Signature single input signal synchronization module | 0                                | 0         | 0                              | 0         |  |
| BPS-1-N1                                                                         |  | 10  | GAVRF           | Wall horn-strobe, red, FIRE 15cd                     | 0                                | 0         | 0.05                           | 0.5       |  |
|                                                                                  |  | 9   | GAVRF           | Wall horn-strobe, red, FIRE 75cd                     | 0                                | 0         | 0.05                           | 0.45      |  |
| BPS-1-N2                                                                         |  | 1   | GAVRF           | Wall strobe, red, FIRE 15cd                          | 0                                | 0         | 0.036                          | 0.036     |  |
|                                                                                  |  | 9   | GCAVRF          | Horn/Strobe, Ceiling, Red, Fire 75cd                 | 0                                | 0         | 0.06                           | 0.54      |  |
|                                                                                  |  | 7   | GCVRF           | Strobe, Ceiling, Red, Fire 75cd                      | 0                                | 0         | 0.045                          | 0.315     |  |
|                                                                                  |                                                                                     |     |                 |                                                      | TOTAL STANDBY (A)                | 0.07      | TOTAL ALARM (A)                | 2.111     |  |
|                                                                                  |                                                                                     |     |                 |                                                      | REQUIRED STANDBY TIME = 24 HOURS |           |                                |           |  |
|                                                                                  |                                                                                     |     |                 |                                                      | REQUIRED ALARM TIME = 5 MINUTES  |           |                                |           |  |
| SECONDARY STANDBY LOAD (A)                                                       |                                                                                     |     |                 |                                                      | 0.07                             | 24        | 1.68                           |           |  |
| SECONDARY ALARM LOAD (A)                                                         |                                                                                     |     |                 |                                                      | 2.111                            | 0.08333   | 0.17592                        |           |  |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                           |                                                                                     |     |                 |                                                      |                                  |           | 1.85592                        |           |  |
| DERATING FACTOR                                                                  |                                                                                     |     |                 |                                                      |                                  |           | 1.25                           |           |  |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                          |                                                                                     |     |                 |                                                      |                                  |           | 2.319                          |           |  |
| PROVIDE (2) 12V 7AH BATTERIES                                                    |                                                                                     |     |                 |                                                      |                                  |           |                                |           |  |

| PANEL BPS-3 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                     |     |                 |                                                      |                                  |           |                                |           |       |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|-----------------|------------------------------------------------------|----------------------------------|-----------|--------------------------------|-----------|-------|
| PANEL COMPONENTS                                                                 |                                                                                     | QTY | PART NO.        | DESCRIPTION                                          | STANDBY CURRENT (AMPS)           |           | SECONDARY ALARM CURRENT (AMPS) |           |       |
|                                                                                  |                                                                                     |     |                 |                                                      | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |       |
|                                                                                  |                                                                                     | 1   | BPS6A Mainboard | Mainboard for BPS6A assembly                         | 0.07                             | 0.07      | 0.27                           | 0.27      |       |
| CIRCUIT                                                                          | SYMBOL                                                                              | QTY | PART NO.        | DESCRIPTION                                          | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |       |
| BPS-3-AUX                                                                        |  | 1   | SIGA-CC1S       | Signature single input signal synchronization module | 0                                | 0         | 0                              | 0         |       |
| BPS-3-N5                                                                         |  | 10  | GCAVRF          | Horn/Strobe, Ceiling, Red, Fire 75cd                 | 0                                | 0         | 0.06                           | 0.6       |       |
|                                                                                  |  | 7   | GCVRF           | Strobe, Ceiling, Red, Fire 75cd                      | 0                                | 0         | 0.045                          | 0.315     |       |
| BPS-3-N6                                                                         |  | 10  | GCAVRF          | Horn/Strobe, Ceiling, Red, Fire 75cd                 | 0                                | 0         | 0.06                           | 0.6       |       |
|                                                                                  |  | 6   | GCVRF           | Strobe, Ceiling, Red, Fire 75cd                      | 0                                | 0         | 0.045                          | 0.27      |       |
| TOTAL STANDBY (A)                                                                |                                                                                     |     |                 |                                                      | 0.07                             |           | TOTAL ALARM (A)                |           | 2.055 |
|                                                                                  |                                                                                     |     |                 |                                                      | REQUIRED STANDBY TIME = 24 HOURS |           |                                |           |       |
|                                                                                  |                                                                                     |     |                 |                                                      | REQUIRED ALARM TIME = 5 MINUTES  |           |                                |           |       |
| SECONDARY STANDBY LOAD (A)                                                       |                                                                                     |     |                 |                                                      | 0.07                             | 24        | 1.68                           |           |       |
| SECONDARY ALARM LOAD (A)                                                         |                                                                                     |     |                 |                                                      | 2.055                            | 0.08333   | 0.17125                        |           |       |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                           |                                                                                     |     |                 |                                                      | 1.89125                          |           |                                |           |       |
| DERATING FACTOR                                                                  |                                                                                     |     |                 |                                                      | 1.25                             |           |                                |           |       |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                          |                                                                                     |     |                 |                                                      | 2.3406                           |           |                                |           |       |
| PROVIDE (2) 12V 7AH BATTERIES                                                    |                                                                                     |     |                 |                                                      |                                  |           |                                |           |       |

| PANEL BPS-5 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                       |     |                 |                                                    |                                  |           |                                |           |  |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----|-----------------|----------------------------------------------------|----------------------------------|-----------|--------------------------------|-----------|--|
| PANEL COMPONENTS                                                                 |                                                                                       | QTY | PART NO         | DESCRIPTION                                        | STANDBY CURRENT (AMPS)           |           | SECONDARY ALARM CURRENT (AMPS) |           |  |
|                                                                                  |                                                                                       |     |                 |                                                    | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL     |  |
| CIRCUIT                                                                          | SYMBOL                                                                                | 1   | BPS6A Mainboard | Mainboard for BPS6A assembly                       | 0.07                             | 0.07      | 0.27                           | 0.27      |  |
|                                                                                  |                                                                                       | QTY | PART NO         | DESCRIPTION                                        | CURRENT DRAW (A)                 | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |  |
| BPS-5-AUX                                                                        |   | 1   | SIGA-CC1S       | Signature single mod. panel synchronization module | 0                                | 0         | 0                              | 0         |  |
| BPS-5-N10                                                                        |  | 6   | GCAVRF          | Horn/Strobe, Ceiling, Red, Fire 75cd               | 0                                | 0         | 0.06                           | 0.36      |  |
|                                                                                  |  | 4   | GCVRF           | Strobe, Ceiling, Red, Fire 75cd                    | 0                                | 0         | 0.045                          | 0.18      |  |
| BPS-5-N9                                                                         |  | 3   | GAVRF           | Wall horn-strobe, red, FIRE 15cd                   | 0                                | 0         | 0.05                           | 0.15      |  |
|                                                                                  |  | 8   | GAVRF           | Wall horn-strobe, red, FIRE 75cd                   | 0                                | 0         | 0.05                           | 0.4       |  |
| TOTAL STANDBY (A)                                                                |                                                                                       |     |                 |                                                    | 0.07                             |           | TOTAL ALARM (A)                | 1.36      |  |
|                                                                                  |                                                                                       |     |                 |                                                    | REQUIRED STANDBY TIME = 24 HOURS |           |                                |           |  |
|                                                                                  |                                                                                       |     |                 |                                                    | REQUIRED ALARM TIME = 5 MINUTES  |           |                                |           |  |
| SECONDARY STANDBY LOAD (A)                                                       |                                                                                       |     |                 |                                                    | 0.07                             | 24        | 1.68                           |           |  |
| SECONDARY ALARM LOAD (A)                                                         |                                                                                       |     |                 |                                                    | 1.36                             | 0.08333   | 0.11333                        |           |  |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                           |                                                                                       |     |                 |                                                    |                                  |           |                                |           |  |
| DERATING FACTOR                                                                  |                                                                                       |     |                 |                                                    |                                  |           |                                |           |  |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                          |                                                                                       |     |                 |                                                    | 2.24167                          |           |                                |           |  |
| PROVIDE (2) 12V 7AH BATTERIES                                                    |                                                                                       |     |                 |                                                    |                                  |           |                                |           |  |

| PANEL BPS-10 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                   |     |                 |                                                      |                                                                     |           |                                |           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----|-----------------|------------------------------------------------------|---------------------------------------------------------------------|-----------|--------------------------------|-----------|
| PANEL COMPONENTS                                                                  |                                                                                   | QTY | PART NO.        | DESCRIPTION                                          | STANDBY CURRENT (AMPS)                                              |           | SECONDARY ALARM CURRENT (AMPS) |           |
|                                                                                   |                                                                                   | 1   | BPS6A Mainboard | Mainboard for BPS6A assembly                         | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |
|                                                                                   |                                                                                   |     |                 |                                                      | 0.07                                                                |           | 0.07                           |           |
| CIRCUIT                                                                           | SYMBOL                                                                            | QTY | PART NO         | DESCRIPTION                                          | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |
| BPS-10-4UX                                                                        |  | 1   | SIGA-CC1S       | Signature single input signal synchronization module | 0                                                                   | 0         | 0                              | 0         |
|                                                                                   |  | 3   | GA4VRF          | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.05                           | 0.15      |
|                                                                                   |  | 1   | GA4VRF          | Wall horn-strobe, red, FIRE 30cst                    | 0                                                                   | 0         | 0.05                           | 0.05      |
|                                                                                   |  | 1   | GA4VRF          | Wall horn-strobe, red, FIRE 75cst                    | 0                                                                   | 0         | 0.05                           | 0.05      |
| BPS-10-4N19                                                                       |  | 2   | GA4VRF          | Wall strobe, red, FIRE 15cst                         | 0                                                                   | 0         | 0.036                          | 0.072     |
|                                                                                   |  | 1   | GC4VRF          | HornStrobe, Ceiling, Red, Fire 75cst                 | 0                                                                   | 0         | 0.06                           | 0.06      |
|                                                                                   |  | 3   | GC4VRF          | Strobe, Ceiling, Red, Fire 30cst                     | 0                                                                   | 0         | 0.035                          | 0.105     |
|                                                                                   |  | 3   | GC4VRF          | Strobe, Ceiling, Red, Fire 15cst                     | 0                                                                   | 0         | 0.045                          | 0.135     |
|                                                                                   |  | 1   | CS405-7A-T      | Outdoor Strobe, 15/75cst, Red, Terminals 75cst       | 0                                                                   | 0         | 0.09                           | 0.09      |
|                                                                                   |  | 1   | GA4RF           | Wall horn, red, FIRE 15cst                           | 0                                                                   | 0         | 0.038                          | 0.038     |
| BPS-10-420                                                                        |  | 2   | GA4VRF          | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.05                           | 0.1       |
|                                                                                   |  | 2   | GA4RF           | Wall strobe, red, FIRE 15cst                         | 0                                                                   | 0         | 0.036                          | 0.072     |
|                                                                                   |  | 1   | GC4VRF          | HornStrobe, Ceiling, Red, Fire 30cst                 | 0                                                                   | 0         | 0.06                           | 0.06      |
|                                                                                   |  | 4   | GC4VRF          | Strobe, Ceiling, Red, Fire 30cst                     | 0                                                                   | 0         | 0.035                          | 0.14      |
|                                                                                   |  | 1   | GC4VRF          | Strobe, Ceiling, Red, Fire 75cst                     | 0                                                                   | 0         | 0.035                          | 0.035     |
|                                                                                   |                                                                                   |     |                 |                                                      | TOTAL STANDBY (A)                                                   | 0.07      | TOTAL ALARM (A)                | 1.427     |
|                                                                                   |                                                                                   |     |                 |                                                      | REQUIRED STANDBY TIME = 24 HOURS<br>REQUIRED ALARM TIME = 5 MINUTES |           |                                |           |
| SECONDARY STANDBY LOAD (A)                                                        |                                                                                   |     |                 |                                                      | 0.07                                                                | 24        | 1.68                           |           |
| SECONDARY ALARM LOAD (A)                                                          |                                                                                   |     |                 |                                                      | 1.427                                                               | 0.08333   | 0.11992                        |           |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                            |                                                                                   |     |                 |                                                      |                                                                     |           | 1.79892                        |           |
| DERATING FACTOR                                                                   |                                                                                   |     |                 |                                                      |                                                                     |           | 1.25                           |           |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                           |                                                                                   |     |                 |                                                      |                                                                     |           | 2.24865                        |           |
| PROVIDE (2) 12V 7AH BATTERIES                                                     |                                                                                   |     |                 |                                                      |                                                                     |           |                                |           |

| PANEL BPS-13 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                   |     |           |                                                      |                                                                     |           |                                |           |         |         |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----|-----------|------------------------------------------------------|---------------------------------------------------------------------|-----------|--------------------------------|-----------|---------|---------|
| PANEL COMPONENTS                                                                  |                                                                                   | QTY | PART NO.  | DESCRIPTION                                          | STANDBY CURRENT (AMPS)                                              |           | SECONDARY ALARM CURRENT (AMPS) |           | TOTAL   |         |
|                                                                                   |                                                                                   |     |           |                                                      | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |         |         |
| CIRCUIT                                                                           | SYMBOL                                                                            | QTY | PART NO   | DESCRIPTION                                          | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |         |         |
| BPS-13-4UX                                                                        |  | 1   | SIGA-CC1S | Signature single input signal synchronization module | 0                                                                   | 0         | 0                              | 0         |         |         |
| BPS-13-424                                                                        |  | 9   | GA4VRF    | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.05                           | 0.45      |         |         |
|                                                                                   |  | 7   | GA4VRF    | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.05                           | 0.35      |         |         |
| BPS-13-425                                                                        |  | 11  | GC4VRF    | HornStrobe, Ceiling, Red, Fire 75cst                 | 0                                                                   | 0         | 0.06                           | 0.66      |         |         |
|                                                                                   |  | 7   | GC4VRF    | Strobe, Ceiling, Red, Fire 75cst                     | 0                                                                   | 0         | 0.045                          | 0.315     |         |         |
| TOTAL STANDBY (A)                                                                 |                                                                                   |     |           |                                                      | 0.07                                                                |           | TOTAL ALARM (A)                |           | 2.045   |         |
|                                                                                   |                                                                                   |     |           |                                                      | REQUIRED STANDBY TIME = 24 HOURS<br>REQUIRED ALARM TIME = 5 MINUTES |           |                                |           |         |         |
| SECONDARY STANDBY LOAD (A)                                                        |                                                                                   |     |           |                                                      | 0.07                                                                | 24        |                                |           | 1.68    |         |
| SECONDARY ALARM LOAD (A)                                                          |                                                                                   |     |           |                                                      | 2.045                                                               | 0.08333   |                                |           | 0.17042 |         |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                            |                                                                                   |     |           |                                                      |                                                                     |           |                                |           |         |         |
| DERATING FACTOR                                                                   |                                                                                   |     |           |                                                      |                                                                     |           |                                |           |         | 1.25    |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                           |                                                                                   |     |           |                                                      |                                                                     |           |                                |           |         | 2.31302 |
| PROVIDE (2) 12V 7AH BATTERIES                                                     |                                                                                   |     |           |                                                      |                                                                     |           |                                |           |         |         |

| PANEL BPS-16 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |         |         |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|-----------|------------------------------------------------------|---------------------------------------------------------------------|-----------|--------------------------------|-----------|---------|---------|
| PANEL COMPONENTS                                                                  |                                                                                     | QTY | PART NO.  | DESCRIPTION                                          | STANDBY CURRENT (AMPS)                                              |           | SECONDARY ALARM CURRENT (AMPS) |           |         |         |
|                                                                                   |                                                                                     |     |           |                                                      | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |         |         |
| CIRCUIT                                                                           | SYMBOL                                                                              | QTY | PART NO   | DESCRIPTION                                          | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |         |         |
| BPS-16-4UX                                                                        |  | 1   | SIGA-CC1S | Signature single input signal synchronization module | 0                                                                   | 0         | 0                              | 0         |         |         |
| BPS-16-430                                                                        |  | 4   | GA4VRF    | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.05                           | 0.2       |         |         |
|                                                                                   |  | 11  | GA4VRF    | Wall horn-strobe, red, FIRE 75cst                    | 0                                                                   | 0         | 0.05                           | 0.55      |         |         |
|                                                                                   |  | 1   | GA4RF     | Wall strobe, red, FIRE 15cst                         | 0                                                                   | 0         | 0.036                          | 0.036     |         |         |
| BPS-16-431                                                                        |  | 8   | GC4VRF    | HornStrobe, Ceiling, Red, Fire 75cst                 | 0                                                                   | 0         | 0.06                           | 0.48      |         |         |
|                                                                                   |  | 5   | GC4VRF    | Strobe, Ceiling, Red, Fire 75cst                     | 0                                                                   | 0         | 0.045                          | 0.225     |         |         |
|                                                                                   |                                                                                     |     |           |                                                      | TOTAL STANDBY (A)                                                   | 0.07      | TOTAL ALARM (A)                |           | 1.761   |         |
|                                                                                   |                                                                                     |     |           |                                                      | REQUIRED STANDBY TIME = 24 HOURS<br>REQUIRED ALARM TIME = 5 MINUTES |           |                                |           |         |         |
| SECONDARY STANDBY LOAD (A)                                                        |                                                                                     |     |           |                                                      | 0.07                                                                | 24        |                                |           | 1.68    |         |
| SECONDARY ALARM LOAD (A)                                                          |                                                                                     |     |           |                                                      | 1.761                                                               | 0.08333   |                                |           | 0.14675 |         |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                            |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |         | 1.82675 |
| DERATING FACTOR                                                                   |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |         | 1.25    |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                           |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |         | 2.28344 |
| PROVIDE (2) 12V 7AH BATTERIES                                                     |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |         |         |

| PANEL BPS-19 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |       |         |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|-----------|------------------------------------------------------|---------------------------------------------------------------------|-----------|--------------------------------|-----------|-------|---------|
| PANEL COMPONENTS                                                                  |                                                                                     | QTY | PART NO.  | DESCRIPTION                                          | STANDBY CURRENT (AMPS)                                              |           | SECONDARY ALARM CURRENT (AMPS) |           |       |         |
|                                                                                   |                                                                                     | 1   |           |                                                      | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) | TOTAL |         |
| CIRCUIT                                                                           | SYMBOL                                                                              | QTY | PART NO   | DESCRIPTION                                          | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) | TOTAL |         |
| BPS-19-4UX                                                                        |  | 1   | SIGA-CC1S | Signature single input signal synchronization module | 0                                                                   | 0         | 0                              | 0         | 0     |         |
| BPS-19-436                                                                        |  | 2   | GA4VRF    | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.06                           | 0.1       | 0.1   |         |
|                                                                                   |  | 7   | GA4VRF    | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0         | 0.06                           | 0.35      | 0.35  |         |
|                                                                                   |  | 6   | GC4VRF    | HornStrobe, Ceiling, Red, Fire 75cst                 | 0                                                                   | 0         | 0.06                           | 0.36      | 0.36  |         |
| BPS-19-437                                                                        |  | 4   | GC4VRF    | Strobe, Ceiling, Red, Fire 75cst                     | 0                                                                   | 0         | 0.045                          | 0.18      | 0.18  |         |
| TOTAL STANDBY (A)                                                                 |                                                                                     |     |           |                                                      | 0.07                                                                |           | TOTAL ALARM (A)                |           | 1.26  |         |
|                                                                                   |                                                                                     |     |           |                                                      | REQUIRED STANDBY TIME = 24 HOURS<br>REQUIRED ALARM TIME = 5 MINUTES |           |                                |           |       |         |
| SECONDARY STANDBY LOAD (A)                                                        |                                                                                     |     |           |                                                      | 0.07                                                                | 24        |                                |           | 1.68  |         |
| SECONDARY ALARM LOAD (A)                                                          |                                                                                     |     |           |                                                      | 1.26                                                                | 0.08333   |                                |           | 0.105 |         |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                            |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |       |         |
| DERATING FACTOR                                                                   |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |       |         |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                           |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |       | 2.23125 |
| PROVIDE (2) 12V 7AH BATTERIES                                                     |                                                                                     |     |           |                                                      |                                                                     |           |                                |           |       |         |

| PANEL BPS-11 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                     |     |              |                                                      |                                                                     |           |                                |           |      |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|--------------|------------------------------------------------------|---------------------------------------------------------------------|-----------|--------------------------------|-----------|------|
| PANEL COMPONENTS                                                                  |                                                                                     | QTY | PART NO.     | DESCRIPTION                                          | STANDBY CURRENT (AMPS)                                              |           | SECONDARY ALARM CURRENT (AMPS) |           |      |
|                                                                                   |                                                                                     |     |              |                                                      | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |      |
| CIRCUIT                                                                           | SYMBOL                                                                              | QTY | PART NO      | DESCRIPTION                                          | CURRENT DRAW (A)                                                    | TOTAL (A) | CURRENT DRAW (A)               | TOTAL (A) |      |
| BPS-11-4UX                                                                        |  | 1   | SIGA-CC1S    | Signature single input signal synchronization module | 0                                                                   | 0         | 0                              | 0         |      |
| BPS-11-4UX2                                                                       |  | 2   | FHSD8329-ULF | LaserSense Modulator - Command display module        | 0                                                                   | 0         | 0                              | 0         |      |
|                                                                                   |  | 10  | GC4VRF       | HornStrobe, Ceiling, Red, Fire 75cst                 | 0                                                                   | 0         | 0                              | 0.06      | 0.6  |
| BPS-11A21                                                                         |  | 6   | GC4VRF       | Strobe, Ceiling, Red, Fire 75cst                     | 0                                                                   | 0         | 0                              | 0.045     | 0.27 |
|                                                                                   |                                                                                     |     |              |                                                      | TOTAL STANDBY (A)                                                   | 0.07      | TOTAL ALARM (A)                | 1.14      |      |
|                                                                                   |                                                                                     |     |              |                                                      | REQUIRED STANDBY TIME = 24 HOURS<br>REQUIRED ALARM TIME = 5 MINUTES |           |                                |           |      |
| SECONDARY STANDBY LOAD (A)                                                        |                                                                                     |     |              |                                                      | 0.07                                                                | 24        | 1.68                           |           |      |
| SECONDARY ALARM LOAD (A)                                                          |                                                                                     |     |              |                                                      | 1.14                                                                | 0.08333   | 0.095                          |           |      |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                            |                                                                                     |     |              |                                                      |                                                                     |           | 1.775                          | 1.25      |      |
| DERATING FACTOR                                                                   |                                                                                     |     |              |                                                      |                                                                     |           |                                | 1.25      |      |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                           |                                                                                     |     |              |                                                      |                                                                     |           |                                | 2.21875   |      |
| PROVIDE (2) 12V 7AH BATTERIES                                                     |                                                                                     |     |              |                                                      |                                                                     |           |                                |           |      |

| PANEL BPS-14 (BPS6A) BATTERY CALCULATION<br>(SECONDARY POWER SOURCE REQUIREMENTS) |                                                                                     |     |             |                                                      |                                                                     |                  |                                |           |         |  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|-------------|------------------------------------------------------|---------------------------------------------------------------------|------------------|--------------------------------|-----------|---------|--|
| PANEL COMPONENTS                                                                  |                                                                                     | QTY | PART NO.    | DESCRIPTION                                          | STANDBY CURRENT (AMPS)                                              |                  | SECONDARY ALARM CURRENT (AMPS) |           |         |  |
|                                                                                   |                                                                                     |     |             |                                                      | CURRENT DRAW (A)                                                    | TOTAL (A)        | CURRENT DRAW (A)               | TOTAL (A) |         |  |
| CIRCUIT                                                                           | SYMBOL                                                                              | QTY | DESCRIPTION | CURRENT DRAW (A)                                     | TOTAL (A)                                                           | CURRENT DRAW (A) | TOTAL (A)                      |           |         |  |
| BPS-14-4UX                                                                        |  | 1   | SIGA-CC1S   | Signature single input signal synchronization module | 0                                                                   | 0                | 0                              | 0         |         |  |
|                                                                                   |                                                                                     | 9   | GA4VRF      | Wall horn-strobe, red, FIRE 15cst                    | 0                                                                   | 0                | 0.05                           | 0.45      |         |  |
| BPS-14-426                                                                        |  | 6   | GA4VRF      | Wall horn-strobe, red, FIRE 75cst                    | 0                                                                   | 0                | 0.05                           | 0.3       |         |  |
|                                                                                   |                                                                                     | 1   | GA4VRF      | Wall strobe, red, FIRE 15cst                         | 0                                                                   | 0                | 0.036                          | 0.036     |         |  |
| BPS-14-427                                                                        |  | 9   | GC4VRF      | HornStrobe, Ceiling, Red, Fire 75cst                 | 0                                                                   | 0                | 0.06                           | 0.54      |         |  |
|                                                                                   |                                                                                     | 7   | GC4VRF      | Strobe, Ceiling, Red, Fire 75cst                     | 0                                                                   | 0                | 0.045                          | 0.315     |         |  |
| TOTAL STANDBY (A)                                                                 |                                                                                     |     |             |                                                      | 0.07                                                                |                  | TOTAL ALARM (A)                |           | 1.911   |  |
|                                                                                   |                                                                                     |     |             |                                                      | REQUIRED STANDBY TIME = 24 HOURS<br>REQUIRED ALARM TIME = 5 MINUTES |                  |                                |           |         |  |
| SECONDARY STANDBY LOAD (A)                                                        |                                                                                     |     |             |                                                      | 0.07                                                                | 24               |                                |           | 1.68    |  |
| SECONDARY ALARM LOAD (A)                                                          |                                                                                     |     |             |                                                      | 1.911                                                               | 0.08333          |                                |           | 0.15925 |  |
| STANDBY AND ALARM SUBTOTAL (AMP HOURS)                                            |                                                                                     |     |             |                                                      |                                                                     |                  | 1.83925                        |           | 1.25    |  |
| DERATING FACTOR                                                                   |                                                                                     |     |             |                                                      |                                                                     |                  |                                |           | 1.25    |  |
| SECONDARY LOAD REQUIREMENTS (AMP HOURS)                                           |                                                                                     |     |             |                                                      |                                                                     |                  |                                |           | 2.2996  |  |
| PROVIDE (2) 12V 7AH BATTERIES                                                     |                                                                                     |     |             |                                                      |                                                                     |                  |                                |           |         |  |

|                                                                                                      |        |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|--------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|----------|
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 2.17332  |
|                                                                                                      |        |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 18.22668 |
|                                                                                                      |        |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 10.65 %  |
|                                                                                                      |        |          |                                      | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.986    |
|                                                                                                      |        |          |                                      | Total Circuit Length (Ft):    | 424                | Spare Current (A):         | 2.014    |
|                                                                                                      |        |          |                                      | Total Circuit Resistance (Ω): | 2.204174           | Spare Current (A) Percent: | 87.13 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | G4VRF    | Wall strobe, red, FIRE 15cd          | 1                             | 0.036              | 0.036                      |          |
|                                                                                                      |        | G4AVRF   | Wall horn-strobe, red, FIRE 75cd     | 9                             | 0.05               | 0.45                       |          |
|                                                                                                      |        | G4AVRF   | Wall horn-strobe, red, FIRE 15cd     | 10                            | 0.05               | 0.5                        |          |
|                                                                                                      |        |          |                                      |                               |                    |                            |          |
| <b>Calculation Methods:</b>                                                                          |        |          |                                      |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |        |          |                                      |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                                      |                               |                    |                            |          |
|                                                                                                      |        |          |                                      |                               |                    |                            |          |
|                                                                                                      |        |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.25165  |
|                                                                                                      |        |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.14815 |
|                                                                                                      |        |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 6.14 %   |
|                                                                                                      |        |          |                                      | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.855    |
|                                                                                                      |        |          |                                      | Total Circuit Length (Ft):    | 282                | Spare Current (A):         | 2.145    |
|                                                                                                      |        |          |                                      | Total Circuit Resistance (Ω): | 1.464157           | Spare Current (A) Percent: | 71.50 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | GCVRF    | Strobe, Ceiling, Red, Fire 75cd      | 7                             | 0.045              | 0.315                      |          |
|                                                                                                      |        | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 75cd | 9                             | 0.06               | 0.54                       |          |
|                                                                                                      |        |          |                                      |                               |                    |                            |          |
|                                                                                                      |        |          |                                      |                               |                    |                            |          |
| <b>Calculation Methods:</b>                                                                          |        |          |                                      |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |        |          |                                      |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                                      |                               |                    |                            |          |

| BPS-4 N7 LUMP SUM REPORT                                                                               |        |          |                                  | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|--------------------------------------------------------------------------------------------------------|--------|----------|----------------------------------|-------------------------------|--------------------|----------------------------|----------|
| Circuit Wiring Properties: "Y" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                  | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.04104  |
|                                                                                                        |        |          |                                  | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.35896 |
|                                                                                                        |        |          |                                  | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 5.10 %   |
|                                                                                                        |        |          |                                  | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.636    |
|                                                                                                        |        |          |                                  | Total Circuit Length (Ft):    | 315                | Spare Current (A):         | 2.364    |
|                                                                                                        |        |          |                                  | Total Circuit Resistance (Ω): | 1.636849           | Spare Current (A) Percent: | 78.80 %  |
| DEVICE TOTALS                                                                                          | Symbol | Part No. | Description                      | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                        |        | G4VRF    | Wall strobe, red, FIRE 15cd      | 1                             | 0.036              | 0.036                      |          |
|                                                                                                        |        | G4AVRF   | Wall horn-strobe, red, FIRE 75cd | 8                             | 0.05               | 0.4                        |          |
|                                                                                                        |        | G4AVRF   | Wall horn-strobe, red, FIRE 15cd | 4                             | 0.05               | 0.2                        |          |
| <b>Calculation Methods:</b>                                                                            |        |          |                                  |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                           |        |          |                                  |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                  |        |          |                                  |                               |                    |                            |          |

| BPS-4 N8 LUMP SUM REPORT                                                                               |        |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|--------------------------------------------------------------------------------------------------------|--------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|----------|
| Circuit Wiring Properties: "Y" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.15649  |
|                                                                                                        |        |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.24352 |
|                                                                                                        |        |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 5.67 %   |
|                                                                                                        |        |          |                                      | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.59     |
|                                                                                                        |        |          |                                      | Total Circuit Length (Ft):    | 377                | Spare Current (A):         | 2.41     |
|                                                                                                        |        |          |                                      | Total Circuit Resistance (Ω): | 1.960144           | Spare Current (A) Percent: | 80.33 %  |
| DEVICE TOTALS                                                                                          | Symbol | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                        |        | GCVRF    | Strobe, Ceiling, Red, Fire 75cd      | 4                             | 0.045              | 0.18                       |          |
|                                                                                                        |        | G4AVRF   | Wall horn-strobe, red, FIRE 15cd     | 1                             | 0.05               | 0.05                       |          |
|                                                                                                        |        | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 75cd | 6                             | 0.06               | 0.36                       |          |
| <b>Calculation Methods:</b>                                                                            |        |          |                                      |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                           |        |          |                                      |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                  |        |          |                                      |                               |                    |                            |          |

| BPS-7 N13 LUMP SUM REPORT                                                                            |        |          |                                  | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|--------|----------|----------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |        |          |                                  | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.76189  |
|                                                                                                      |        |          |                                  | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.63811 |
|                                                                                                      |        |          |                                  | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 3.73 %   |
|                                                                                                      |        |          |                                  | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.5      |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                  | Total Circuit Length (Ft):    | 293                | Spare Current (A):         | 2.5      |
|                                                                                                      |        |          |                                  | Total Circuit Resistance (Ω): | 1.523788           | Spare Current (A) Percent: | 83.33 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                      | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | G4AVRF   | Wall horn-strobe, red, FIRE 75cd | 7                             | 0.05               | 0.35                       |          |
|                                                                                                      |        | G4AVRF   | Wall horn-strobe, red, FIRE 15cd | 3                             | 0.05               | 0.15                       |          |
|                                                                                                      |        |          |                                  |                               |                    |                            |          |
|                                                                                                      |        |          |                                  |                               |                    |                            |          |
| <b>Calculation Methods:</b>                                                                          |        |          |                                  |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |        |          |                                  |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                                  |                               |                    |                            |          |

| BPS-7 N14 LUMP SUM REPORT                                                                            |                                                                                     |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |                                                                                     |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.70734  |
|                                                                                                      |                                                                                     |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.69266 |
|                                                                                                      |                                                                                     |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 3.47     |
|                                                                                                      |                                                                                     |          |                                      | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.54     |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                     |          |                                      | Total Circuit Length (Ft):    | 252                | Spare Current (A):         | 2.46     |
|                                                                                                      |                                                                                     |          |                                      | Total Circuit Resistance (Ω): | 1.309884           | Spare Current (A) Percent: | 82.00    |
| DEVICE TOTALS                                                                                        | Symbol                                                                              | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |  | GCVRF    | Strobe, Ceiling, Red, Fire 75cd      | 4                             | 0.045              | 0.18                       |          |
|                                                                                                      |  | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 75cd | 6                             | 0.06               | 0.36                       |          |
|                                                                                                      |                                                                                     |          |                                      |                               |                    |                            |          |
|                                                                                                      |                                                                                     |          |                                      |                               |                    |                            |          |
| <b>Calculation Methods:</b>                                                                          |                                                                                     |          |                                      |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |                                                                                     |          |                                      |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |                                                                                     |          |                                      |                               |                    |                            |          |

| BPS-2 N3 LUMP SUM REPORT                                                                             |                                                                                     |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |         |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|---------|
|                                                                                                      |                                                                                     |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.0049  |
|                                                                                                      |                                                                                     |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.3951 |
|                                                                                                      |                                                                                     |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 4.93 %  |
|                                                                                                      |                                                                                     |          |                                      | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.765   |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                     |          |                                      | Total Circuit Length (Ft):    | 253                | Spare Current (A):         | 2.235   |
|                                                                                                      |                                                                                     |          |                                      | Total Circuit Resistance (Ω): | 1.31359            | Spare Current (A) Percent: | 74.50 % |
| DEVICE TOTALS                                                                                        | Symbol                                                                              | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |         |
|                                                                                                      |  | GCVRF    | Strobe, Ceiling, Red, Fire 75cd      | 5                             | 0.045              | 0.225                      |         |
|                                                                                                      |  | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 75cd | 9                             | 0.06               | 0.54                       |         |
|                                                                                                      |                                                                                     |          |                                      |                               |                    |                            |         |
|                                                                                                      |                                                                                     |          |                                      |                               |                    |                            |         |
| <b>Calculation Methods:</b>                                                                          |                                                                                     |          |                                      |                               |                    |                            |         |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |                                                                                     |          |                                      |                               |                    |                            |         |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |                                                                                     |          |                                      |                               |                    |                            |         |

| BPS-2 N4 LUMP SUM REPORT                                                                             |        |          |                                  | CIRCUIT SETTINGS              |                    | TOTALS                     |         |
|------------------------------------------------------------------------------------------------------|--------|----------|----------------------------------|-------------------------------|--------------------|----------------------------|---------|
|                                                                                                      |        |          |                                  | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 2.2731  |
|                                                                                                      |        |          |                                  | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 18.1269 |
|                                                                                                      |        |          |                                  | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 11.14   |
|                                                                                                      |        |          |                                  | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.9     |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                  | Total Circuit Length (Ft):    | 486                | Spare Current (A):         | 2.1     |
|                                                                                                      |        |          |                                  | Total Circuit Resistance (Ω): | 2.525668           | Spare Current (A) Percent: | 70.00   |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                      | Qty.                          | Device Current (A) | Total Current (A)          |         |
|                                                                                                      |        | G4VRF    | Wall horn-strobe, red, FIRE 15cd | 9                             | 0.05               | 0.45                       |         |
|                                                                                                      |        | G4AVRF   | Wall horn-strobe, red, FIRE 75cd | 9                             | 0.05               | 0.45                       |         |
|                                                                                                      |        |          |                                  |                               |                    |                            |         |
| Calculation Methods:                                                                                 |        |          |                                  |                               |                    |                            |         |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |        |          |                                  |                               |                    |                            |         |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                                  |                               |                    |                            |         |

| BPS-5 N10 LUMP SUM REPORT                                                                            |                                                                                     |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |                                                                                     |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.83068  |
|                                                                                                      |                                                                                     |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.56992 |
|                                                                                                      |                                                                                     |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 4.07 %   |
|                                                                                                      |                                                                                     |          |                                      | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.54     |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                     |          |                                      | Total Circuit Length (Ft):    | 296                | Spare Current (A):         | 2.45     |
|                                                                                                      |                                                                                     |          |                                      | Total Circuit Resistance (Ω): | 1.537191           | Spare Current (A) Percent: | 82.00 %  |
| DEVICE TOTALS                                                                                        | Symbol                                                                              | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |  | GCVRF    | Strobe, Ceiling, Red, Fire 75cd      | 4                             | 0.045              | 0.18                       |          |
|                                                                                                      |  | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 75cd | 6                             | 0.06               | 0.36                       |          |
| <b>Calculation Methods:</b>                                                                          |                                                                                     |          |                                      |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DNF) x 2 x Total Circuit Length (Ft)                         |                                                                                     |          |                                      |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |                                                                                     |          |                                      |                               |                    |                            |          |

| BPS-5 N9 LUMP SUM REPORT                                                                             |        |          |                                  | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|--------|----------|----------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |        |          |                                  | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.84421  |
|                                                                                                      |        |          |                                  | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.55579 |
|                                                                                                      |        |          |                                  | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 4.14 %   |
|                                                                                                      |        |          |                                  | Wire Resistance (DNF):        | 2.6                | Total Circuit Current (A): | 0.55     |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                  | Total Circuit Length (Ft):    | 295                | Spare Current (A):         | 2.45     |
|                                                                                                      |        |          |                                  | Total Circuit Resistance (Ω): | 1.534932           | Spare Current (A) Percent: | 81.67 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                      | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | G4VRF    | Wall horn-strobe, red, FIRE 75cd | 8                             | 0.05               | 0.4                        |          |
|                                                                                                      |        | G4VRF    | Wall horn-strobe, red, FIRE 15cd | 3                             | 0.05               | 0.15                       |          |
|                                                                                                      |        |          |                                  |                               |                    |                            |          |
| Calculation Methods:                                                                                 |        |          |                                  |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (Ω) x 2 x Total Circuit Current (A)                           |        |          |                                  |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                                  |                               |                    |                            |          |

| BPS-10 N19 LUMP SUM REPORT                                                                             |                                                                                   |          | CIRCUIT SETTINGS                     |          | TOTALS                     |                   |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------|--------------------------------------|----------|----------------------------|-------------------|
|                                                                                                        |                                                                                   |          | Starting Calculation Voltage         | 20.4     | Max. Voltage Drop:         | 1.34752           |
|                                                                                                        |                                                                                   |          | Min. Operational Voltage             | 16       | End Of Line Voltage:       | 19.05248          |
|                                                                                                        |                                                                                   |          | Max. Circuit Current (A):            | 3        | Voltage Drop Percent:      | 6.61 %            |
|                                                                                                        |                                                                                   |          | Wire Resistance (dXFL):              | 2.6      | Total Circuit Current (A): | 0.622             |
|                                                                                                        |                                                                                   |          | Total Circuit Length (Ft):           | 417      | Spare Current (A):         | 2.378             |
| Circuit Wiring Properties: "Y" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                   |          | Total Circuit Resistance (Ω):        | 2.165432 | Spare Current (A) Percent: | 79.27 %           |
| DEVICE TOTALS                                                                                          | Symbol                                                                            | Part No. | Description                          | Qty.     | Device Current (A)         | Total Current (A) |
|                                                                                                        |  | GCVRF    | Strobe, Ceiling, Red, Fire 300d      | 3        | 0.035                      | 0.105             |
|                                                                                                        |  | GA4VRF   | Wall strobe, red, FIRE 150d          | 2        | 0.036                      | 0.072             |
|                                                                                                        |  | GCVRF    | Strobe, Ceiling, Red, Fire 150d      | 3        | 0.045                      | 0.135             |
|                                                                                                        |  | GA4VRF   | Wall horn-strobe, red, FIRE 150d     | 3        | 0.05                       | 0.15              |
|                                                                                                        |  | GA4VRF   | Wall horn-strobe, red, FIRE 300d     | 1        | 0.05                       | 0.05              |
|                                                                                                        |  | GA4VRF   | Wall horn-strobe, red, FIRE 750d     | 1        | 0.05                       | 0.05              |
|                                                                                                        |  | GC4VRF   | Horn-Strobe, Ceiling, Red, Fire 750d | 1        | 0.06                       | 0.06              |
|                                                                                                        |  | GC4VRF   | Horn-Strobe, Ceiling, Red, Fire 750d | 1        | 0.06                       | 0.06              |

| BPS-10 N20 LUMP SUM REPORT                                                                             |                                                                                                                                                                                        |            |                                              | CIRCUIT SETTINGS             |                    | TOTALS                    |          |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------|------------------------------|--------------------|---------------------------|----------|
|                                                                                                        |                                                                                                                                                                                        |            |                                              | Starting Calculation Voltage | 20.4               | Max. Voltage Drop         | 1.1955%  |
|                                                                                                        |                                                                                                                                                                                        |            |                                              | 1Min. Operational Voltage    | 16                 | End Of Line Voltage       | 19.2044% |
|                                                                                                        |                                                                                                                                                                                        |            |                                              | Max. Circuit Current (A)     | 3                  | Voltage Drop Percent      | 5.86 %   |
|                                                                                                        |                                                                                                                                                                                        |            |                                              | Wire Resistance (ΩN/Ft)      | 2.6                | Total Circuit Current (A) | 0.535    |
|                                                                                                        |                                                                                                                                                                                        |            |                                              | Total Circuit Length (Ft)    | 430                | Spare Current (A)         | 2.485    |
| Circuit Wiring Properties: "Y" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                                                                                                                        |            |                                              | Total Circuit Resistance (Ω) | 2.2348             | Spare Current (A) Percent | 92.17 %  |
| DEVICE TOTALS                                                                                          | Symbol                                                                                                                                                                                 | Part No.   | Description                                  | Qty.                         | Device Current (A) | Total Current (A)         |          |
|                                                                                                        |                                                                                                       | GCVRF      | Strobe, Ceiling, Red, Fire 30cd              | 4                            | 0.035              | 0.14                      |          |
|                                                                                                        |                                                                                                       | GCVRF      | Strobe, Ceiling, Red, Fire 75cd              | 1                            | 0.035              | 0.035                     |          |
|                                                                                                        |                                                                                                       | G4VRF      | Wall strobe, red, FIRE 15cd                  | 2                            | 0.036              | 0.072                     |          |
|                                                                                                        |                                                                                                       | G4ARF      | Wall hom, red, FIRE                          | 1                            | 0.038              | 0.038                     |          |
|                                                                                                        |                                                                                                       | G4AVRF     | Wall hom-strobe, red, FIRE 15cd              | 2                            | 0.05               | 0.1                       |          |
|                                                                                                        |                                                                                                       | GCAVRF     | Hom/Strobe, Ceiling, Red, Fire 30cd          | 1                            | 0.06               | 0.06                      |          |
|                                                                                                        |                                                                                                       | CS405-7A-T | Outdoor Strobe, 15/75cd, Red, Terminals 75cd | 1                            | 0.09               | 0.09                      |          |
|                                                                                                        | <b>Calculation Methods:</b><br>Total Resistance (Ω) = Wire Resistance (ΩN/Ft) x 2 x Total Circuit Length (Ft)<br>Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A) |            |                                              |                              |                    |                           |          |

|                                                                                                    |                                                                                   | CIRCUIT SETTINGS              |                                   |      |                            | TOTALS            |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------|-----------------------------------|------|----------------------------|-------------------|--|
| BPS-13 N24 LUMP SUM REPORT                                                                         |                                                                                   | Starting Calculation Voltage  | 20.4                              |      | Max. Voltage Drop:         | 2.22872           |  |
|                                                                                                    |                                                                                   | Min. Operational Voltage      | 16                                |      | Err Ch Line Voltage:       | 15.11128          |  |
|                                                                                                    |                                                                                   | Max. Circuit Current (A)      | 3                                 |      | Voltage Drop Percent:      | 10.93%            |  |
|                                                                                                    |                                                                                   | Wire Resistance (Ohm/Ft)      | 2.6                               |      | Total Circuit Current (A)  | 0.8               |  |
|                                                                                                    |                                                                                   | Total Circuit Length (Ft)     | 536                               |      | Spare Current (A)          | 2.2               |  |
| Circuit Wiring Properties: #142 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                   | Total Circuit Resistance (Oh) | 2.78587                           |      | Spare Current (A) Percent: | 73.33%            |  |
| DEVICE TOTALS                                                                                      | Symbol                                                                            | Part No.                      | Description                       | Qty. | Device Current (A)         | Total Current (A) |  |
|                                                                                                    |  | GAVRF                         | Wall-horn-strobe, red, FIRE 75sd  | 7    | 0.05                       | 0.35              |  |
|                                                                                                    |  | GAVRF                         | Wall-horn-strobe, red, FIRE 150sd | 9    | 0.05                       | 0.45              |  |
|                                                                                                    |                                                                                   |                               |                                   |      |                            |                   |  |
| <b>Calculation Methods:</b>                                                                        |                                                                                   |                               |                                   |      |                            |                   |  |
| Total Resistance (Oh) = Wire Resistance (Oh/Ft) x 2 x Total Circuit Length (Ft)                    |                                                                                   |                               |                                   |      |                            |                   |  |
| Total Voltage Drop = Total Resistance (Oh) x Total Circuit Current (A)                             |                                                                                   |                               |                                   |      |                            |                   |  |

| BPS-13 N2S LUMP SUM REPORT                                                                                                                                                                                                                                        |                                                                                     |          |                                      | CIRCUIT SETTINGS             |                    | TOTALS                    |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--------------------------------------|------------------------------|--------------------|---------------------------|----------|
| Circuit Wiring Properties: # 142 FPL (NAC) 14 AWG, NAC- 2 Cond. Solid Copper FPL Analog Unshielded                                                                                                                                                                |                                                                                     |          |                                      | Starting Operational Voltage | 20.4               | Max. Voltage Drop         | 1,827.47 |
|                                                                                                                                                                                                                                                                   |                                                                                     |          |                                      | Min. Operational Voltage     | 16                 | End Of Line Voltage       | 1,857.23 |
|                                                                                                                                                                                                                                                                   |                                                                                     |          |                                      | Max. Circuit Current (A)     | 3                  | Voltage Drop Percent      | 9.96     |
|                                                                                                                                                                                                                                                                   |                                                                                     |          |                                      | Wire Resistance (Ohm/Ft)     | 2.6                | Total Circuit Current (A) | 0.86     |
|                                                                                                                                                                                                                                                                   |                                                                                     |          |                                      | Total Circuit Length (Ft)    | 360                | Spare Current (A)         | 2.05     |
|                                                                                                                                                                                                                                                                   |                                                                                     |          |                                      | Total Circuit Resistance (Ω) | 1.874325           | Spare Current (A) Percent | 67.50    |
| DEVICE TOTALS                                                                                                                                                                                                                                                     | Symbol                                                                              | Part No. | Description                          | Qty.                         | Device Current (A) | Total Current (A)         |          |
|                                                                                                                                                                                                                                                                   |  | GCVRF    | Strobe, Ceiling, Red, Fire 750d      | 7                            | 0.045              | 0.315                     |          |
|                                                                                                                                                                                                                                                                   |  | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 750d | 11                           | 0.06               | 0.66                      |          |
|                                                                                                                                                                                                                                                                   |                                                                                     |          |                                      |                              |                    |                           |          |
| <b>Calculation Methods:</b><br>Total Resistance (Ω) = Wire Resistance (dFt) x 2 x Total Circuit Length (Ft)<br>Total Resistance Drop = Total Resistance (Ω) x Total Circuit Current (A)<br>Total Voltage Drop = Wire Resistance (dFt) x Total Circuit Current (A) |                                                                                     |          |                                      |                              |                    |                           |          |

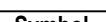
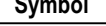
| BPS-16 K30 LUMP SUM REPORT                                                                            |                                                                                                                                                                                        |          |                                  | CIRCUIT SETTINGS             |                    | TOTALS                    |         |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------|------------------------------|--------------------|---------------------------|---------|
| Circuit Wiring Properties: Y 142 (PL) (NAC) 14 AWG, NAC - 2 Cond. Solid Copper (PL) Analog Unshielded |                                                                                                                                                                                        |          |                                  | Starting Calculation Voltage | 20.4               | Max. Voltage Drop         | 1.6342  |
|                                                                                                       |                                                                                                                                                                                        |          |                                  | Min. Operational Voltage     | 16                 | End Of Line Voltage       | 16.7678 |
|                                                                                                       |                                                                                                                                                                                        |          |                                  | Max. Circuit Current (A)     | 3                  | Voltage Drop Percent      | 8.01    |
|                                                                                                       |                                                                                                                                                                                        |          |                                  | Wire Resistance (mV/Ft)      | 2.6                | Total Circuit Current (A) | 0.86    |
|                                                                                                       |                                                                                                                                                                                        |          |                                  | Total Circuit Length (Ft)    | 400                | Spore Current (A)         | 2.214   |
|                                                                                                       |                                                                                                                                                                                        |          |                                  | Total Circuit Resistance (Ω) | 2.079168           | Spore Current (A) Percent | 7.38    |
| DEVICE TOTALS                                                                                         | Symbol                                                                                                                                                                                 | Part No. | Description                      | Qty.                         | Device Current (A) | Total Current (A)         |         |
|                                                                                                       |                                                                                                     | G4VRF    | Wall strobe, red, FIRE 15cd      | 1                            | 0.036              | 0.036                     |         |
|                                                                                                       |                                                                                                     | G4VRF    | Wall horn-strobe, red, FIRE 75cd | 11                           | 0.05               | 0.55                      |         |
|                                                                                                       |                                                                                                     | G4VRF    | Wall horn-strobe, red, FIRE 15cd | 4                            | 0.05               | 0.2                       |         |
|                                                                                                       | <b>Calculation Methods:</b><br>Total Resistance (Ω) = Wire Resistance (mV/Ft) x 2 x Total Circuit Length (Ft)<br>Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A) |          |                                  |                              |                    |                           |         |

| BPS-16 N31 LUMP SUM REPORT                                                                          |  |          |                                      | CIRCUIT SETTINGS             |                    | TOTALS                     |          |
|-----------------------------------------------------------------------------------------------------|--|----------|--------------------------------------|------------------------------|--------------------|----------------------------|----------|
| Circuit Wiring Properties: Y 142 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |  |          |                                      | Starting Calculation Voltage | 20.4               | Max. Voltage Drop          | 1.29419  |
|                                                                                                     |  |          |                                      | Min. Operational Voltage     | 16                 | End Of Line Voltage        | 19.16581 |
|                                                                                                     |  |          |                                      | Max. Circuit Current (A)     | 2.3                | Voltage Drop Percent       | 6.34     |
|                                                                                                     |  |          |                                      | Wire Resistance (DIFR)       | 0.6                | Spares Current (A)         | 0.705    |
|                                                                                                     |  |          |                                      | Total Circuit Length (Ft)    | 383                | Total Current (A) Percent  | 2.295    |
|                                                                                                     |  |          |                                      | Total Resistance (Ω)         | 1.85736            | Spares Current (A) Percent | 76.50    |
|                                                                                                     |  |          |                                      |                              |                    |                            |          |
| Symbol                                                                                              |  | Part No. | Description                          | Qty.                         | Device Current (A) | Total Current (A)          |          |
|                  |  | GC4VFR   | Stroke, Ceiling, Rad, Fire 750d      | 5                            | 0.045              | 0.225                      |          |
|                  |  | GC4VFR   | Horn/Stroke, Ceiling, Rad, Fire 750d | 8                            | 0.06               | 0.48                       |          |
| DEVICE TOTALS                                                                                       |  |          |                                      |                              |                    |                            |          |
| <b>Calculation Methods:</b>                                                                         |  |          |                                      |                              |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DIFR) x 2 x Total Circuit Length (Ft)                       |  |          |                                      |                              |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                               |  |          |                                      |                              |                    |                            |          |

| BPS-11 N21 LUMP SUM REPORT                                                                           |                                                                                     |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|----------|
| Circuit Wiring Properties: 1/2" ALF PPL (NAC) 14 AWG, NAC-2 Cont. Solid Copper PPL Analog Unshielded |                                                                                     |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 2.77722  |
|                                                                                                      |                                                                                     |          |                                      | Min. Operative Voltage:       | 15                 | Est. Of Voltage:           | 17.82278 |
|                                                                                                      |                                                                                     |          |                                      | Max. Current (A):             | 3                  | Voltage Drop Percent:      | 13.81    |
|                                                                                                      |                                                                                     |          |                                      | Wire Resistance (dHP):        | 2.6                | Total Circuit (A):         | 0.687    |
|                                                                                                      |                                                                                     |          |                                      | Total Circuit Length (F):     | 614                | Spare Current (A):         | 2.13     |
|                                                                                                      |                                                                                     |          |                                      | Total Circuit Resistance (Ω): | 1.39208            | Spare Current (A) Percent: | 71.69 %  |
| DEVICE TOTALS                                                                                        | Symbol                                                                              | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |  | GCVRF    | Shble, Gcelng, Red, Fir<br>75sd      | 6                             | 0.045              | 0.27                       |          |
|                                                                                                      |  | GCARVF   | Horn/Shble, Gcelng, Red,<br>Fir 75sd | 10                            | 0.046              | 0.6                        |          |

**Calculation Methods:**  
 Total Resistance (Ω) = Wire Resistance (dHP) × 2 x Total Circuit Length (F)  
 Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)

| BPS-14 N26 LUMP SUM REPORT                                                                       |          |                                  | CIRCUIT SETTINGS                |                    | TOTALS                      |          |
|--------------------------------------------------------------------------------------------------|----------|----------------------------------|---------------------------------|--------------------|-----------------------------|----------|
|                                                                                                  |          |                                  | Starting Calculation Voltage    | 20.4               | Max. Voltage Drop           | 1.54457  |
|                                                                                                  |          |                                  | Min. Operational Voltage        | 16                 | End Of Line Voltage         | 16.85443 |
|                                                                                                  |          |                                  | Max. Circuit Current (A):       | 3                  | Voltage Drop Percent:       | 7.57 %   |
|                                                                                                  |          |                                  | Wire Resistance (Ohm/Ft):       | 1.6                | Total Circuit Amp (A):      | 0.786    |
|                                                                                                  |          |                                  | Total Circuit Length (Ft):      | 379                | Spare Capacity (A):         | 2.214    |
|                                                                                                  |          |                                  | Total Circuit Resistance (Ohm): | 1.98258            | Spare Capacity (A) Percent: | 73.90 %  |
| Circuit Wiring Properties: V 14/FI (NAC) 14 AWG, NAC- 2 Cond. Solid Copper FPL Analog Unshielded |          |                                  | Qty.                            | Device Current (A) | Total Current (A)           |          |
| Symbol                                                                                           | Part No. | Description                      |                                 |                    |                             |          |
|               | G4VRF    | Wall strobe, red, FIRE 15cd      | 1                               | 0.036              | 0.036                       |          |
|               | G4VRF    | Wall horn-strobe, red, FIRE 75cd | 6                               | 0.05               | 0.3                         |          |
|               | G4VRF    | Wall horn-strobe, red, FIRE 15cd | 9                               | 0.05               | 0.45                        |          |
| DEVICE TOTALS                                                                                    |          |                                  |                                 |                    |                             |          |

|                                                                                                       |                                                                                     |          |                                     | CIRCUIT SETTINGS                       |                    | TOTALS                     |          |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|-------------------------------------|----------------------------------------|--------------------|----------------------------|----------|
| BPS-14 N7P LUMP SUM REPORT                                                                            |                                                                                     |          |                                     | Starting Calculation Voltage           | 20.4               | Max. Voltage Drop          | 1.25522  |
|                                                                                                       |                                                                                     |          |                                     | Min. Operational Voltage               | 16                 | End Of Line Voltage        | 19.14478 |
|                                                                                                       |                                                                                     |          |                                     | Max. Circuit Current (A):              | 3                  | Voltage Drop Percent       | 6.15 %   |
| Circuit Wiring Properties: "Y" 14Z PFI (NAC) 14 AWG; NAC - 2 Cond. Solid Copper PFI Analog Unshielded |                                                                                     |          |                                     | Wire Resistance ( $\Delta V/I$ ):      | 2.6                | Total Circuit Current (A): | 0.855    |
|                                                                                                       |                                                                                     |          |                                     | Total Circuit Length (ft):             | 282                | Spare Current (A):         | 2.145    |
|                                                                                                       |                                                                                     |          |                                     | Total Circuit Resistance ( $\Omega$ ): | 1.468092           | Spare Current (A) Percent: | 71.50 %  |
| DEVICE TOTALS                                                                                         |  | Part No. | Description                         | Qty.                                   | Device Current (A) | Total Current (A)          |          |
|                                                                                                       | GCVRF                                                                               |          | Shobe, Ceiling, Red, Fire 75cd      | 7                                      | 0.045              | 0.315                      |          |
|                                                                                                       |  | GCAVRF   | Horn/Shobe, Ceiling, Red, Fire 75cd | 9                                      | 0.06               | 0.54                       |          |
| Calculation Methods:                                                                                  |                                                                                     |          |                                     |                                        |                    |                            |          |
| Total Resistance ( $\Omega$ ) = Wire Resistance ( $\Delta V/I$ ) x 2 x Total Circuit Length (Ft)      |                                                                                     |          |                                     |                                        |                    |                            |          |
| Total Voltage Drop = Total Resistance ( $\Omega$ ) x Total Circuit Current (A)                        |                                                                                     |          |                                     |                                        |                    |                            |          |

|                            |  |          |                                    | CIRCUIT SETTINGS                     |                  | TOTALS                     |         |
|----------------------------|--|----------|------------------------------------|--------------------------------------|------------------|----------------------------|---------|
| BPS-17 K32 LUMP SUM REPORT |  |          |                                    | Starting Calculation Voltage:        | 20.4             | Max. Voltage Drop:         | 0.7734  |
|                            |  |          |                                    | Min. Operative Voltage:              | 16               | Error Of Voltage:          | 18.6566 |
|                            |  |          |                                    | Max. Current (A) (I <sub>sc</sub> ): | 3                | Voltage Drop Percent:      | 3.79    |
|                            |  |          |                                    | Weir Resistance (ΩV <sub>A</sub> ):  | 2.6              | Total Circuit A (A):       | 0.95    |
|                            |  |          |                                    | Total Circuit Length (ft):           | 207              | Spare Current (A):         | 2.5     |
|                            |  |          |                                    | Total Circuit Resistance (Ω):        | 1.546802         | Spare Current (A) Percent: | 83.33 % |
|                            |  |          |                                    |                                      |                  |                            |         |
| Symbol                     |  | Part No. | Description                        | Qty.                                 | Device Count (A) | Total Current (A)          |         |
|                            |  | GIAVR    | Wal-horn-strobe, red, FIRE<br>750d | 7                                    | 0.05             | 0.35                       |         |
|                            |  | GIAVR    | Wal-horn-strobe, red, FIRE<br>150d | 3                                    | 0.05             | 0.15                       |         |
| DEVICE TOTALS              |  |          |                                    |                                      |                  |                            |         |

| BPS-17 N33 LUMP SUM REPORT                                                                           |          |                                      |  | CIRCUIT SETTINGS              |                    |                            | TOTALS   |  |
|------------------------------------------------------------------------------------------------------|----------|--------------------------------------|--|-------------------------------|--------------------|----------------------------|----------|--|
|                                                                                                      |          |                                      |  | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.92035  |  |
| Circuit Wiring Properties: V 142F PPL (NAG) 14 AWG, NAC - 2 Cond. Solid Copper PPL Analog Unshielded |          |                                      |  | Min. Operating Voltage:       | 16                 | Exc Of Low Voltage:        | 18.47666 |  |
|                                                                                                      |          |                                      |  | Max. Circuit Current (A):     | 4.2                | Voltage Drop Percent:      | 0.51     |  |
|                                                                                                      |          |                                      |  | Wire Resistance (Ω/ft):       | 2.8                | Total Circuit Current (A): | 4.54     |  |
|                                                                                                      |          |                                      |  | Total Circuit Length (ft):    | 329                | Spare Current (A):         | 2.46     |  |
|                                                                                                      |          |                                      |  | Total Circuit Resistance (Ω): | 170.342            | Spare Current (A) Percent: | 82.60 %  |  |
| DEVICE TOTALS                                                                                        |          |                                      |  | Qty.                          | Device Current (A) | Total Current (A)          |          |  |
| Symbol                                                                                               | Part No. | Description                          |  | 4                             | 0.045              | 0.18                       |          |  |
|                 | GCMVR    | Strobe, Ceiling, Red, Fire 750d      |  | 4                             | 0.045              | 0.18                       |          |  |
|                 | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 750d |  | 6                             | 0.06               | 0.36                       |          |  |
| Calculation Methods:                                                                                 |          |                                      |  |                               |                    |                            |          |  |
| Total Resistance (Ω) = Total Resistance (Ω/ft) x 2 x Total Circuit Length (ft)                       |          |                                      |  |                               |                    |                            |          |  |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |          |                                      |  |                               |                    |                            |          |  |

| BPS-19 N36 LUMP SUM REPORT                                                                         |                                                                                       |          | CIRCUIT SETTINGS                |                   | TOTALS                    |                   |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|---------------------------------|-------------------|---------------------------|-------------------|
|                                                                                                    |                                                                                       |          | Starting Calculation Voltage    | 20.4              | Max. Voltage Drop         | 0.56638           |
| Circuit Wiring Properties: "1/42 PLF (NAC) 14 AWG, NAC- 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                       |          | Min. Operational Voltage        | 16                | End of Line Voltage       | 19.83363          |
|                                                                                                    |                                                                                       |          | Max. Circuit Current (A)        | 3                 | Voltage Drop Percent      | 2.78 %            |
|                                                                                                    |                                                                                       |          | Wire Resistance (Ω/FT)          | 2.6               | Total Circuit Current (A) | 0.45              |
| Total Circuit Length (FT)                                                                          |                                                                                       |          | 242                             | Spare Current (A) | 2.55                      |                   |
|                                                                                                    |                                                                                       |          | Total Circuit Resistance (Ω)    | 1.258612          | Spare Current (A) Percent | 85.00 %           |
| DEVICE TOTALS                                                                                      | Symbol                                                                                | Part No. | Description                     | Qty.              | Device Current (A)        | Total Current (A) |
|                                                                                                    |  | G4AVRF   | Wall-hom-strobe, red, FIRE 75sd | 7                 | 0.05                      | 0.35              |
|                                                                                                    |  | G4AVRF   | Wall-hom-strobe, red, FIRE 15sd | 2                 | 0.05                      | 0.1               |
|                                                                                                    |  |          |                                 |                   |                           |                   |

**Calculation Methods:**

Total Resistance (Ω) = Wire Resistance (Ω/FT) x 2 x Total Circuit Length (FT)

Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)

| BPS-15 N37 LUMP SUM REPORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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Voltage Drop          | 1.96678           |  |
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Operative Voltage         | 16       | End Of Line Voltage        | 19.33322          |  |
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Circuit Current (A):      | 2.6      | Voltage Drop Percent:      | 5.23              |  |
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Current (DNI):            | 3        | Total Circuit Drop (A):    | 0.54              |  |
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| BPS-12 N2Z KUM SUM REPORT                                                                            |  |         |                                             | CIRCUIT SETTINGS              |                    | TOTALS                      |         |
|------------------------------------------------------------------------------------------------------|--|---------|---------------------------------------------|-------------------------------|--------------------|-----------------------------|---------|
|                                                                                                      |  |         |                                             | Starting Calculation Voltage  | 20.4               | Max. Voltage Drop:          | 0.33903 |
| Circuit Wiring Properties: 75/142 PFI, NAC1 14 AWG, NAC- 2 Cond. Solid Copper PFI, Analog Unshielded |  |         |                                             | Min. Operational Voltage:     | 16                 | End Of Line Voltage:        | 20.0697 |
|                                                                                                      |  |         |                                             | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:       | 1.65    |
|                                                                                                      |  |         |                                             | Wire Resistance (Ω/Kft):      | 2.6                | Total Circuit Current (A):  | 2.58    |
|                                                                                                      |  |         |                                             | Total Circuit Length (Ft):    | 155                | Spares Current (A):         | 2.58    |
|                                                                                                      |  |         |                                             | Total Circuit Resistance (Ω): | 0.807215           | Spares Current (A) Percent: | 86.00   |
| DEVICE TOTALS                                                                                        |  |         |                                             | Qty:                          | Device Current (A) | Total Current (A)           |         |
|                   |  | Part No | Description                                 | 2                             | 0.21               | 0.42                        |         |
| WP                                                                                                   |  | 75A-7AT | 15/75otWg Strobe, Horn 97 dbA Avg., Red/5to |                               |                    |                             |         |

Calculation Methods:  
Total Resistance (Ω) = Wire Resistance (Ω/Ft) x 2 x Total Circuit Length (Ft)  
Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)

| BPS-12 N23 LUMP SUM REPORT                                                                                                                                                            |                                                                                     |                             | CIRCUIT SETTINGS                     |                    | TOTALS                     |          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------|--------------------------------------|--------------------|----------------------------|----------|--|
|                                                                                                                                                                                       |                                                                                     |                             | Starting Calculation Voltage:        | 20.4               | Max. Voltage Drop:         | 1.625%   |  |
| Circuit Wiring Properties: 1/2" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded                                                                               |                                                                                     |                             | Min. Operating Voltage:              | 16                 | End Of Line Voltage:       | 18.7742% |  |
|                                                                                                                                                                                       |                                                                                     |                             | Max. Circuit Current (A):            | 3                  | Voltage Drop Percent:      | 7.97%    |  |
|                                                                                                                                                                                       |                                                                                     |                             | Wire Resistance (Ω/Ft):              | 1.6                | Total Circuit Current (A): | 0.718    |  |
|                                                                                                                                                                                       |                                                                                     |                             | Total Circuit Length (Ft):           | 435                | Spare Current (A):         | 2.282    |  |
|                                                                                                                                                                                       |                                                                                     |                             | Total Circuit Resistance (Ω):        | 2.325422           | Spare Current (A) Percent: | 76.67%   |  |
| Symbol                                                                                                                                                                                | Part No.                                                                            | Description                 | Qty.                                 | Device Current (A) | Total Current (A)          |          |  |
|                                                                                                    | GA4RF                                                                               | Wall strobe, red, FIRE 15cd | 3                                    | 0.036              | 0.108                      |          |  |
| DEVICE TOTALS                                                                                                                                                                         |  | GA4RF                       | Wall horn-strobe, red, FIRE 75cd     | 4                  | 0.05                       | 0.2      |  |
|                                                                                                                                                                                       |  | GA4RF                       | Wall horn-strobe, red, FIRE 15cd     | 7                  | 0.05                       | 0.35     |  |
|                                                                                                                                                                                       |  | GCA4RF                      | Horn/Strobe, Ceiling, Red, Fire 75cd | 1                  | 0.06                       | 0.06     |  |
| <b>Calculation Methods:</b><br>Total Resistance (Ω) = Wire Resistance (Ω/Ft) x 2 x Total Circuit Length (Ft)<br>Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A) |                                                                                     |                             |                                      |                    |                            |          |  |

|                                                                                                      |                                                                                     |        | CIRCUIT SETTINGS              |                    | TOTALS                      |          |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|-------------------------------|--------------------|-----------------------------|----------|
|                                                                                                      |                                                                                     |        | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:          | 1.2674   |
| Circuit Wiring Properties: Y 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |                                                                                     |        | Min. Operational Voltage:     | 16                 | End Of Line Voltage:        | 19.10326 |
|                                                                                                      |                                                                                     |        | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:       | 6.36 %   |
|                                                                                                      |                                                                                     |        | Wire Resistance (ΔIFt):       | 2.6                | Total Circuit Current (A):  | 0.561    |
|                                                                                                      |                                                                                     |        | Total Circuit Length (Ft):    | 445                | Spares Current (A):         | 2.439    |
|                                                                                                      |                                                                                     |        | Total Circuit Resistance (Ω): | 2.311473           | Spares Current (A) Percent: | 81.30 %  |
|                                                                                                      |                                                                                     |        | Qty.                          | Device Current (A) | Total Current (A)           |          |
| DEVICE TOTALS                                                                                        |  | GCVRf  | 3                             | 0.035              | 0.105                       |          |
|                                                                                                      |  | GAVRf  | 1                             | 0.035              | 0.036                       |          |
|                                                                                                      |  | G4AVRf | 6                             | 0.05               | 0.3                         |          |
|                                                                                                      |  | G5AVRf | 2                             | 0.06               | 0.12                        |          |
|                                                                                                      |  | G6AVRf |                               |                    |                             |          |
| Calculation Methods:                                                                                 |                                                                                     |        |                               |                    |                             |          |
| Total Resistance (Ω) = Wire Resistance (ΔIFt) x 2 x Total Circuit Length (Ft)                        |                                                                                     |        |                               |                    |                             |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |                                                                                     |        |                               |                    |                             |          |

| BPS-15 K29 LUMP SUM REPORT                                                                             |        |                                   |             | CIRCUIT SETTINGS              |               | TOTALS                     |          |
|--------------------------------------------------------------------------------------------------------|--------|-----------------------------------|-------------|-------------------------------|---------------|----------------------------|----------|
| Circuit Wiring Properties: "Y" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |                                   |             | Starting Calculation Voltage: | 20.4          | Max. Voltage Drop:         | 2.08931  |
|                                                                                                        |        |                                   |             | Min. Operative Voltage:       | 16            | End Of Line Voltage:       | 18.33569 |
|                                                                                                        |        |                                   |             | Max. Circuit Current (A):     | 3             | Voltage Drop Percent:      | 10.14    |
|                                                                                                        |        |                                   |             | Wire Resistance (LH/F):       | 2.8           | Total Circuit Current (A): | 0.7075   |
|                                                                                                        |        |                                   |             | Total Circuit Length (Ft):    | 824           | Spare Current (A):         | 2.295    |
|                                                                                                        |        |                                   |             | Total Circuit Resistance (Ω): | 2.935193      | Spare Current (A) Percent: | 76.50    |
| Symbol                                                                                                 |        | Part No.                          | Description | Qty.                          | Devices Count | Total Current (A)          |          |
|                     | GCVRF  | Strobe, Critting, Red, Fire 750c  | 5           | 0.045                         | 0.225         |                            |          |
|                     | GCAVRF | Hom/Strb, Ceiling, Red, Fire 750c | 8           | 0.06                          | 0.48          |                            |          |
| Calculation Methods:                                                                                   |        |                                   |             |                               |               |                            |          |
| Total Resistance (Ω) = Wire Resistance (Ω/F) × 2 × Total Circuit Length (Ft)                           |        |                                   |             |                               |               |                            |          |
| Total Resistance (Ω) = Total Resistance (Ω) × Total Circuit Current (A)                                |        |                                   |             |                               |               |                            |          |
| Total Voltage Drop = Total Resistance (Ω) × Total Circuit Current (A)                                  |        |                                   |             |                               |               |                            |          |

| BPS-18 N34 LUMP SUM REPORT                                                                         |                                                                                       |          |                                  | CIRCUIT SETTINGS             |                    | TOTALS                    |          |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|----------------------------------|------------------------------|--------------------|---------------------------|----------|
|                                                                                                    |                                                                                       |          |                                  | Starting Calculation Voltage | 20.4               | Max. Voltage Drop         | 0.77777  |
| Circuit Wiring Properties: V= 142V, P(NAC) 14 AWG, NAC- 2 Cond. Solid Copper PPL Analog Unshielded |                                                                                       |          |                                  | Min. Operational Voltage     | 16                 | End Of Line Voltage       | 19.62223 |
|                                                                                                    |                                                                                       |          |                                  | Max. Circuit Current (A)     | 3                  | Voltage Drop Percent      | 3.81 %   |
|                                                                                                    |                                                                                       |          |                                  | Wire Resistance (ΔP/Ft)      | 2.5                | Total Circuit Current (A) | 0.5      |
|                                                                                                    |                                                                                       |          |                                  | Total Circuit Length (Ft)    | 299                | Spare Current (A)         | 2.5      |
|                                                                                                    |                                                                                       |          |                                  | Total Circuit Resistance (Ω) | 1.556539           | Spare Current (A) Percent | 83.33 %  |
| DEVICE TOTALS                                                                                      | Symbol                                                                                | Part No. | Description                      | Qty.                         | Device Current (A) | Total Current (A)         |          |
|                                                                                                    |  | GHA4RVF  | Wall horn-strobe, red, FIRE 150c | 7                            | 0.05               | 0.35                      |          |
|                                                                                                    |  | GHA4RVF  | Wall horn-strobe, red, FIRE 150c | 3                            | 0.05               | 0.15                      |          |
| Calculation Methods:                                                                               |                                                                                       |          |                                  |                              |                    |                           |          |
| Total Resistance (ΔI) = Wire Resistance (ΔP/Ft) x 2 x Total Circuit Length (Ft)                    |                                                                                       |          |                                  |                              |                    |                           |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                              |                                                                                       |          |                                  |                              |                    |                           |          |

| BPS-18 K15 LUMP SUM REPORT                                                                                                                                                           |  |          |                                      | CIRCUIT SETTINGS              |               | TOTALS                     |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|--------------------------------------|-------------------------------|---------------|----------------------------|----------|
| Circuit Wiring Properties: V: 142V PFL (NAC) 14 AWG, NAC- 2 Cond. Solid Copper PFL Analog Unshielded                                                                                 |  |          |                                      | Starting Calculation Voltage: | 20.4          | Max. Voltage Drop:         | 0.91573  |
|                                                                                                                                                                                      |  |          |                                      | Min. Operative Voltage:       | 16            | End Of Line Voltage:       | 19.45427 |
|                                                                                                                                                                                      |  |          |                                      | Max. Circuit Current (A):     | 3             | Voltage Drop Percent:      | 0.64     |
|                                                                                                                                                                                      |  |          |                                      | Wire Resistance (14ft):       | 2.6           | Total Circuit Current (A): | 4.49     |
|                                                                                                                                                                                      |  |          |                                      | Total Circuit Length (ft):    | 329           | Spare Current (A) Percent: | 2.46     |
|                                                                                                                                                                                      |  |          |                                      | Total Circuit Resistance (1): | 1.65798       | Spare Current (A) Percent: | 82.06    |
| Symbol                                                                                                                                                                               |  | Part No. | Description                          | Qty.                          | Devices Count | Total Current (A)          |          |
|                                                                                                                                                                                      |  | GCAVR    | Stroke, Ceiling, Red, Fire 750d      | 4                             | 0.045         | 0.18                       |          |
|                                                                                                                                                                                      |  | GCAVR    | Horn/Stroke, Ceiling, Red, Fire 750d | 6                             | 0.06          | 0.36                       |          |
| <b>Calculation Methods:</b><br>Total Resistance (1) = Wire Resistance (DBP) + 2 x Total Circuit Length (FL)<br>Total Voltage Drop = Total Resistance (1) x Total Circuit Current (A) |  |          |                                      |                               |               |                            |          |

LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER

PROJECT

NUMBER:

[illegible]

SHEET INDEX:

| Sl. No. | SHEET TITLE                   |
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| 1       | FA-0 COVER SHEET              |
| 2       | FA-1 PROJECT INFORMATION      |
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CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
CALCULATIONS  
FA-19

SCALE: N.T.S.

DRAWN: JEN

REVIEWED: CS

DATE: 04/15/2025

DRAWING NUMBER:

**FA-19**

| BPS-20 N38 LUMP SUM REPORT                                                                            |        |          |                                 | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|-------------------------------------------------------------------------------------------------------|--------|----------|---------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                       |        |          |                                 | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.77327  |
|                                                                                                       |        |          |                                 | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.62674 |
|                                                                                                       |        |          |                                 | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 3.79 %   |
|                                                                                                       |        |          |                                 | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 0.5      |
| Circuit Wiring Properties: 1" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                 | Total Circuit Length (Ft):    | 297                | Spare Current (A) Percent: | 2.5      |
|                                                                                                       |        |          |                                 | Total Circuit Resistance (Ω): | 1.546529           | Spare Current (A) Percent: | 83.33 %  |
| DEVICE TOTALS                                                                                         | Symbol | Part No. | Description                     | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                       |        | G4AVRF   | Wall hom-strobe, red, FIRE 75cd | 7                             | 0.05               | 0.35                       |          |
|                                                                                                       |        | G4AVRF   | Wall hom-strobe, red, FIRE 15cd | 3                             | 0.05               | 0.15                       |          |
| Calculation Methods:                                                                                  |        |          |                                 |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                         |        |          |                                 |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                 |        |          |                                 |                               |                    |                            |          |

| BPS-20 N39 LUMP SUM REPORT                                                                            |        |          |                                      | CIRCUIT SETTINGS              |                    | TOTALS                     |         |
|-------------------------------------------------------------------------------------------------------|--------|----------|--------------------------------------|-------------------------------|--------------------|----------------------------|---------|
|                                                                                                       |        |          |                                      | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.92061 |
|                                                                                                       |        |          |                                      | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.4794 |
|                                                                                                       |        |          |                                      | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 4.51 %  |
|                                                                                                       |        |          |                                      | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 0.54    |
| Circuit Wiring Properties: 1" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                      | Total Circuit Length (Ft):    | 328                | Spare Current (A) Percent: | 2.46    |
|                                                                                                       |        |          |                                      | Total Circuit Resistance (Ω): | 1.704824           | Spare Current (A) Percent: | 82.00 % |
| DEVICE TOTALS                                                                                         | Symbol | Part No. | Description                          | Qty.                          | Device Current (A) | Total Current (A)          |         |
|                                                                                                       |        | GCVRF    | Strobe, Ceiling, Red, Fire 75cd      | 4                             | 0.045              | 0.18                       |         |
|                                                                                                       |        | GCAVRF   | Horn/Strobe, Ceiling, Red, Fire 75cd | 6                             | 0.06               | 0.36                       |         |
| Calculation Methods:                                                                                  |        |          |                                      |                               |                    |                            |         |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                         |        |          |                                      |                               |                    |                            |         |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                 |        |          |                                      |                               |                    |                            |         |

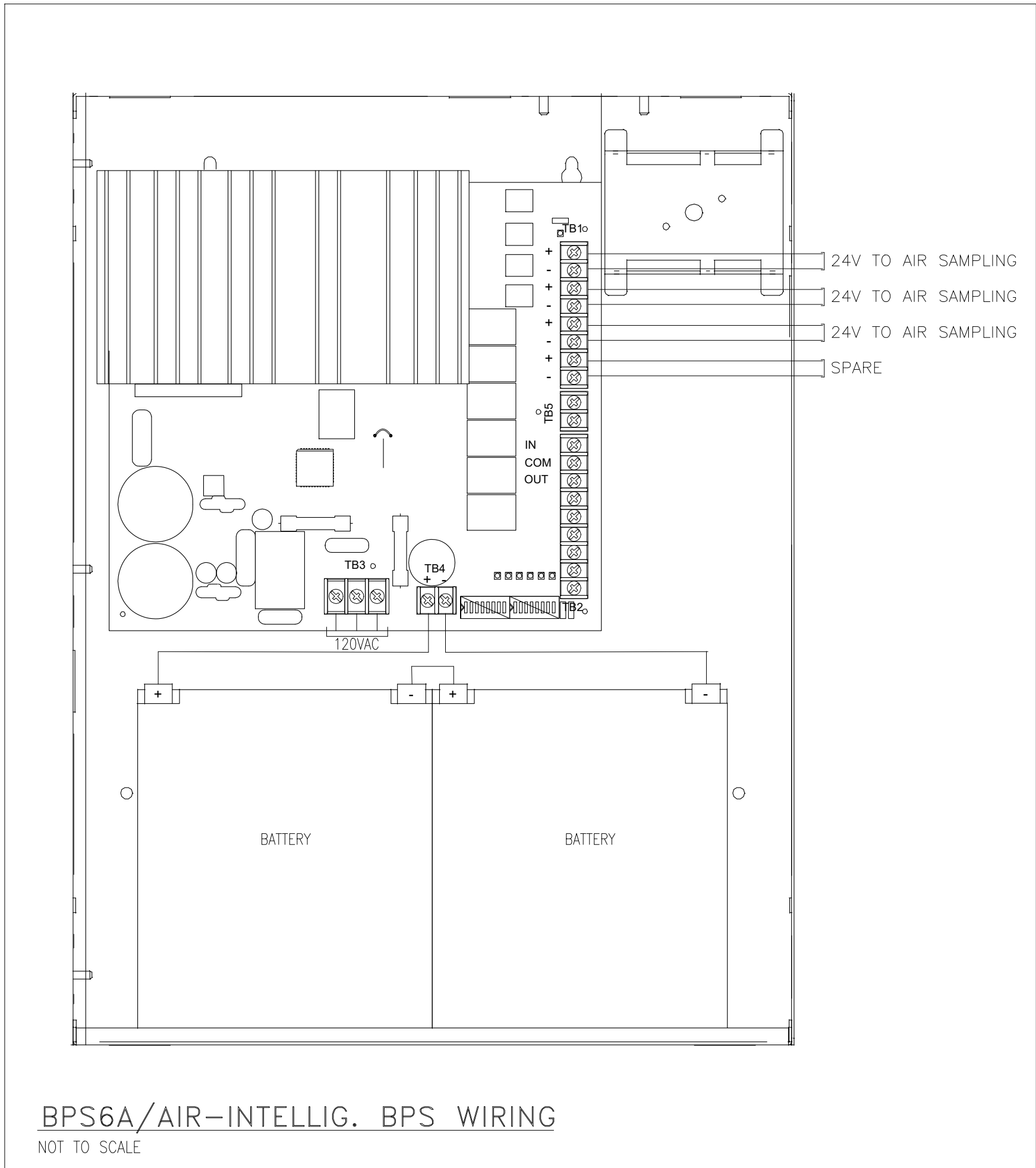
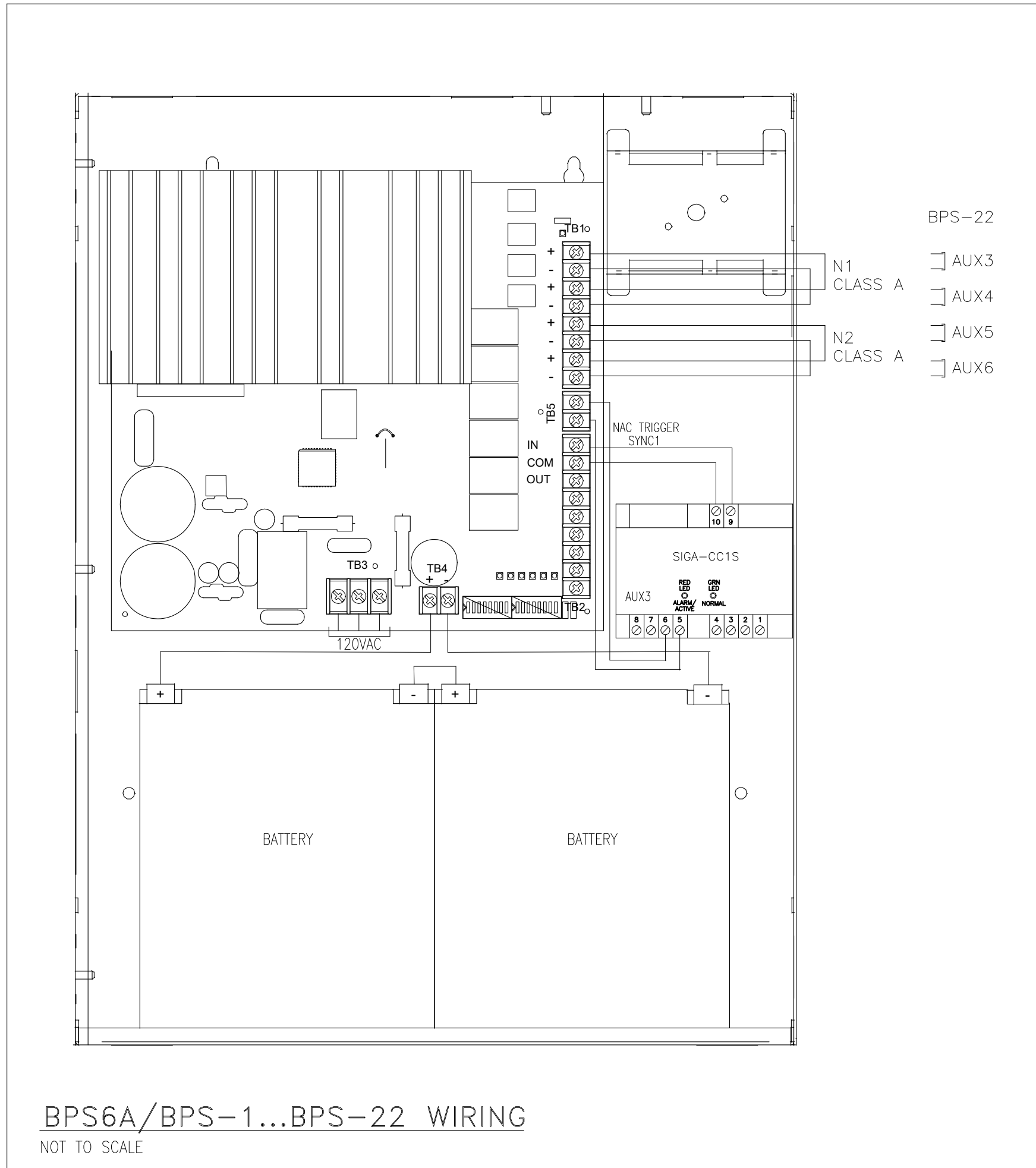
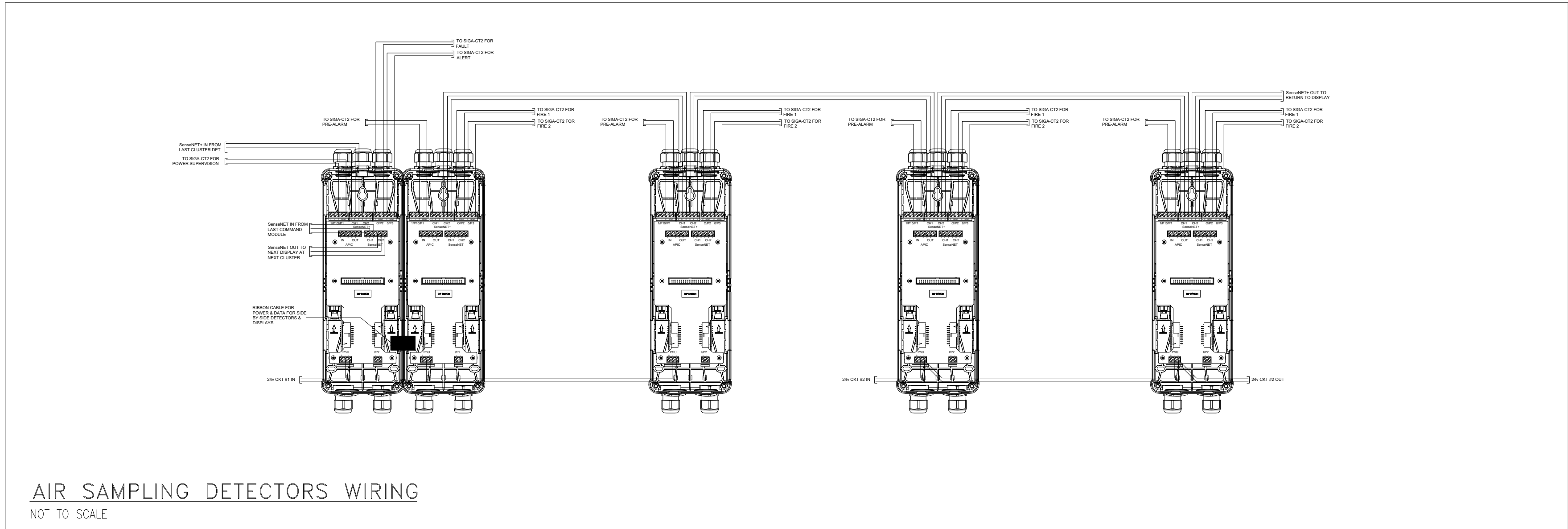
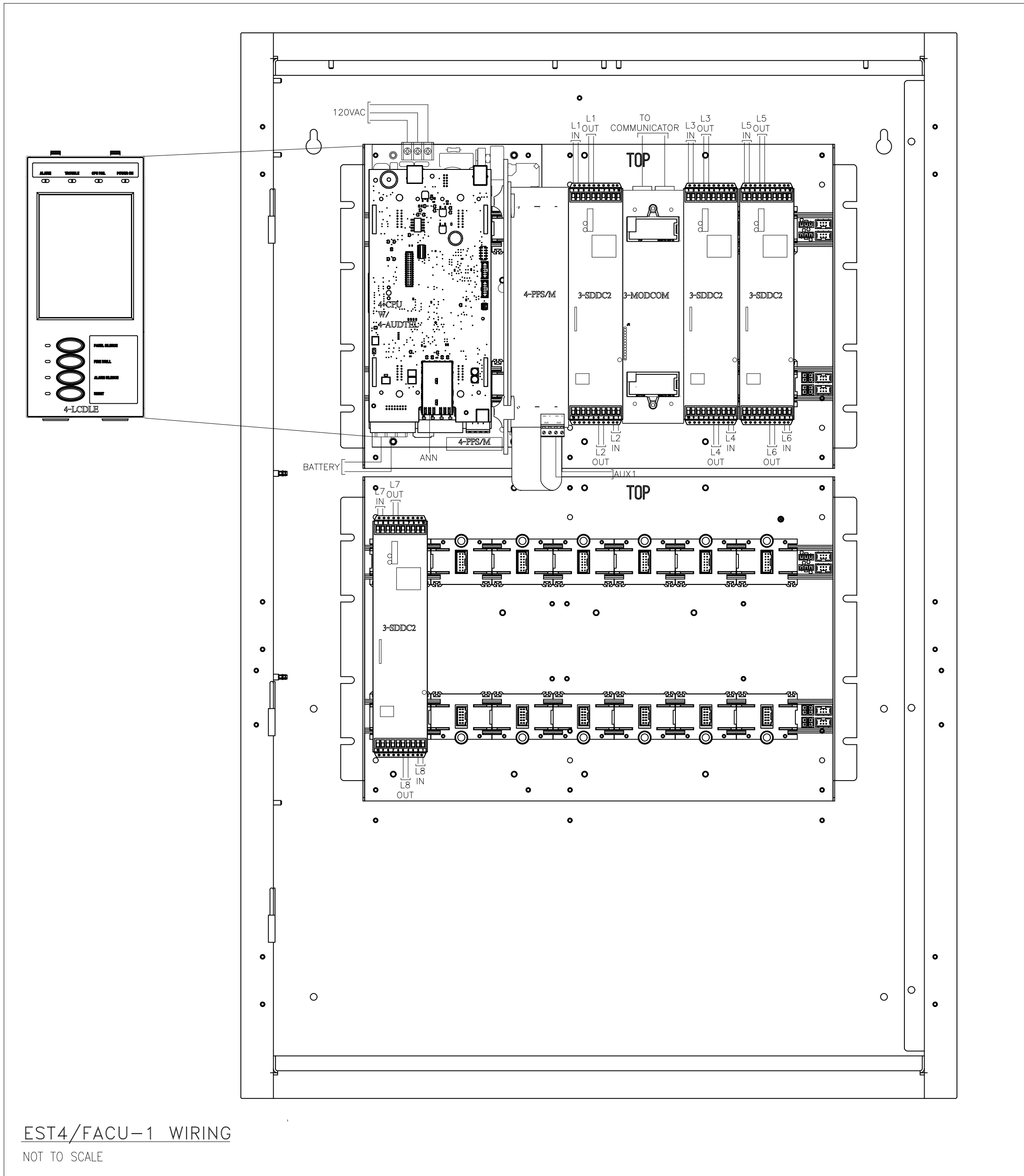
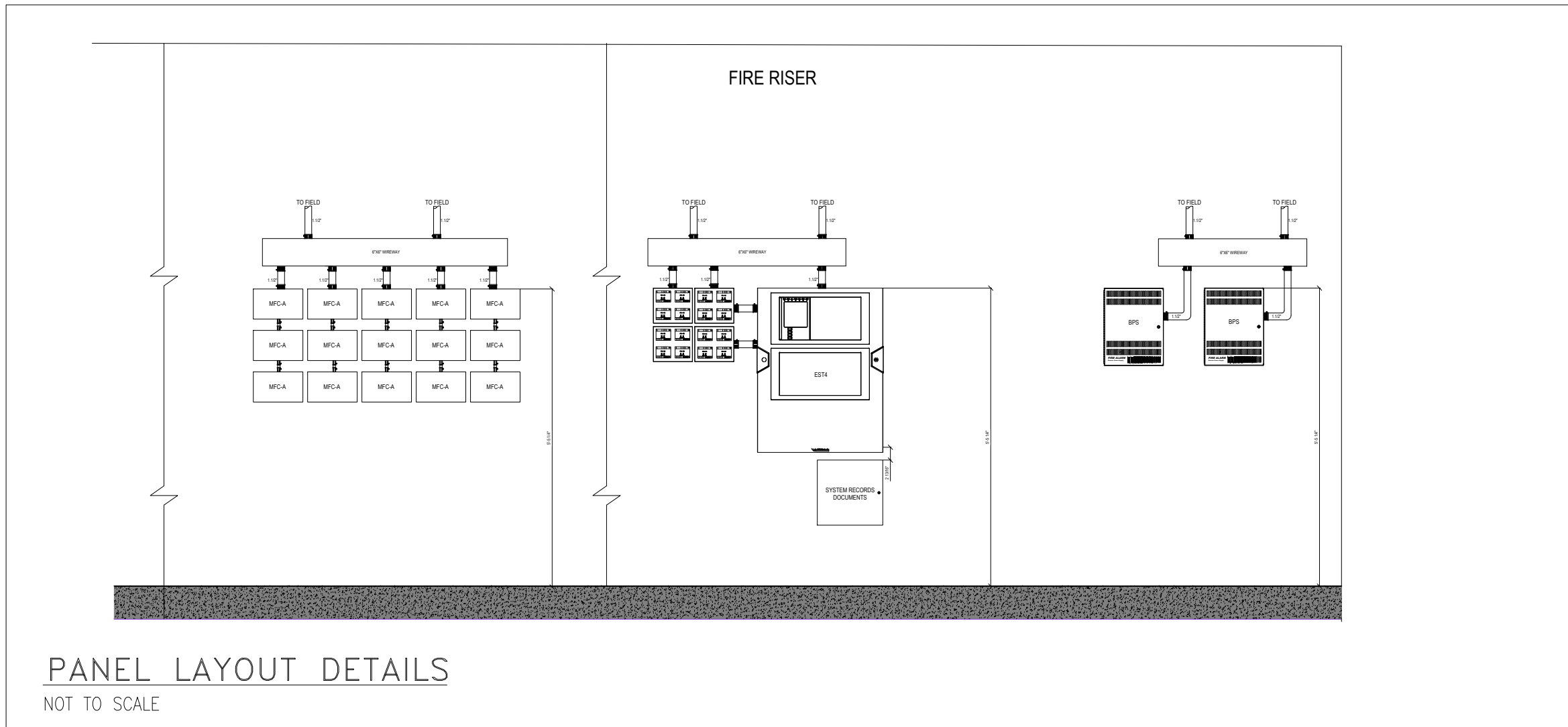
| BPS-21 N40 LUMP SUM REPORT                                                                            |        |          |                                 | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|-------------------------------------------------------------------------------------------------------|--------|----------|---------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                       |        |          |                                 | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.97043  |
|                                                                                                       |        |          |                                 | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.42957 |
|                                                                                                       |        |          |                                 | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 4.76 %   |
|                                                                                                       |        |          |                                 | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 0.586    |
| Circuit Wiring Properties: 1" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                 | Total Circuit Length (Ft):    | 318                | Spare Current (A) Percent: | 2.414    |
|                                                                                                       |        |          |                                 | Total Circuit Resistance (Ω): | 1.656023           | Spare Current (A) Percent: | 80.47 %  |
| DEVICE TOTALS                                                                                         | Symbol | Part No. | Description                     | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                       |        | G4VRF    | Wall strobe, red, FIRE 15cd     | 1                             | 0.036              | 0.036                      |          |
|                                                                                                       |        | G4AVRF   | Wall hom-strobe, red, FIRE 75cd | 7                             | 0.05               | 0.35                       |          |
| Calculation Methods:                                                                                  |        |          |                                 |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                         |        |          |                                 |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                 |        |          |                                 |                               |                    |                            |          |

| BPS-21 N41 LUMP SUM REPORT                                                                            |        |          |                                 | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|-------------------------------------------------------------------------------------------------------|--------|----------|---------------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                       |        |          |                                 | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.00919  |
|                                                                                                       |        |          |                                 | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.33081 |
|                                                                                                       |        |          |                                 | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 5.24 %   |
|                                                                                                       |        |          |                                 | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 0.59     |
| Circuit Wiring Properties: 1" 14/2 FPL (NAC) 14 AWG, NAC - 2 Cond. Solid Copper FPL Analog Unshielded |        |          |                                 | Total Circuit Length (Ft):    | 348                | Spare Current (A) Percent: | 2.41     |
|                                                                                                       |        |          |                                 | Total Circuit Resistance (Ω): | 1.812179           | Spare Current (A) Percent: | 80.33 %  |
| DEVICE TOTALS                                                                                         | Symbol | Part No. | Description                     | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                       |        | GCVRF    | Strobe, Ceiling, Red, Fire 75cd | 4                             | 0.045              | 0.18                       |          |
|                                                                                                       |        | G4AVRF   | Wall hom-strobe, red, FIRE 15cd | 1                             | 0.05               | 0.05                       |          |
| Calculation Methods:                                                                                  |        |          |                                 |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                         |        |          |                                 |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                 |        |          |                                 |                               |                    |                            |          |

| BPS-22 AUX3 LUMP SUM REPORT                                                                          |        |          |                            | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|--------|----------|----------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |        |          |                            | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 0.68893  |
|                                                                                                      |        |          |                            | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.71107 |
|                                                                                                      |        |          |                            | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 3.38 %   |
|                                                                                                      |        |          |                            | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 0.51     |
| Circuit Wiring Properties: 1" 14/2 FPL (AUX) 14 AWG, AUX POWER - 2 Cond. Solid Copper FPL Unshielded |        |          |                            | Total Circuit Length (Ft):    | 260                | Spare Current (A) Percent: | 2.43     |
|                                                                                                      |        |          |                            | Total Circuit Resistance (Ω): | 1.350843           | Spare Current (A) Percent: | 83.00 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | SIGA-REL | Signature Releasing Module | 3                             | 0.17               | 0.51                       |          |
| Calculation Methods:                                                                                 |        |          |                            |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                        |        |          |                            |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                            |                               |                    |                            |          |

| BPS-22 AUX4 LUMP SUM REPORT                                                                          |        |          |                            | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|--------|----------|----------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |        |          |                            | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.74462  |
|                                                                                                      |        |          |                            | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.65539 |
|                                                                                                      |        |          |                            | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 8.55 %   |
|                                                                                                      |        |          |                            | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 1.02     |
| Circuit Wiring Properties: 1" 14/2 FPL (AUX) 14 AWG, AUX POWER - 2 Cond. Solid Copper FPL Unshielded |        |          |                            | Total Circuit Length (Ft):    | 329                | Spare Current (A) Percent: | 1.98     |
|                                                                                                      |        |          |                            | Total Circuit Resistance (Ω): | 1.710407           | Spare Current (A) Percent: | 66.00 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | SIGA-REL | Signature Releasing Module | 6                             | 0.17               | 1.02                       |          |
| Calculation Methods:                                                                                 |        |          |                            |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                        |        |          |                            |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                            |                               |                    |                            |          |

| BPS-22 AUX5 LUMP SUM REPORT                                                                          |        |          |                            | CIRCUIT SETTINGS              |                    | TOTALS                     |          |
|------------------------------------------------------------------------------------------------------|--------|----------|----------------------------|-------------------------------|--------------------|----------------------------|----------|
|                                                                                                      |        |          |                            | Starting Calculation Voltage: | 20.4               | Max. Voltage Drop:         | 1.55584  |
|                                                                                                      |        |          |                            | Min. Operational Voltage:     | 16                 | End Of Line Voltage:       | 19.84416 |
|                                                                                                      |        |          |                            | Max. Circuit Current (A):     | 3                  | Voltage Drop Percent:      | 7.63 %   |
|                                                                                                      |        |          |                            | Wire Resistance (DkFt):       | 2.6                | Total Circuit Current (A): | 1.02     |
| Circuit Wiring Properties: 1" 14/2 FPL (AUX) 14 AWG, AUX POWER - 2 Cond. Solid Copper FPL Unshielded |        |          |                            | Total Circuit Length (Ft):    | 293                | Spare Current (A) Percent: | 1.98     |
|                                                                                                      |        |          |                            | Total Circuit Resistance (Ω): | 1.525338           | Spare Current (A) Percent: | 66.00 %  |
| DEVICE TOTALS                                                                                        | Symbol | Part No. | Description                | Qty.                          | Device Current (A) | Total Current (A)          |          |
|                                                                                                      |        | SIGA-REL | Signature Releasing Module | 6                             | 0.17               | 1.02                       |          |
| Calculation Methods:                                                                                 |        |          |                            |                               |                    |                            |          |
| Total Resistance (Ω) = Wire Resistance (DkFt) x 2 x Total Circuit Length (Ft)                        |        |          |                            |                               |                    |                            |          |
| Total Voltage Drop = Total Resistance (Ω) x Total Circuit Current (A)                                |        |          |                            |                               |                    |                            |          |



LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| #  | REVISION      | DATE       |
|----|---------------|------------|
| 0  | FIRST RELEASE | 10/23/2023 |
| 1  | AHJ REVISION  | 04/18/2025 |
| 2  |               |            |
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CERTIFIED FIRE ALARM DESIGNER:

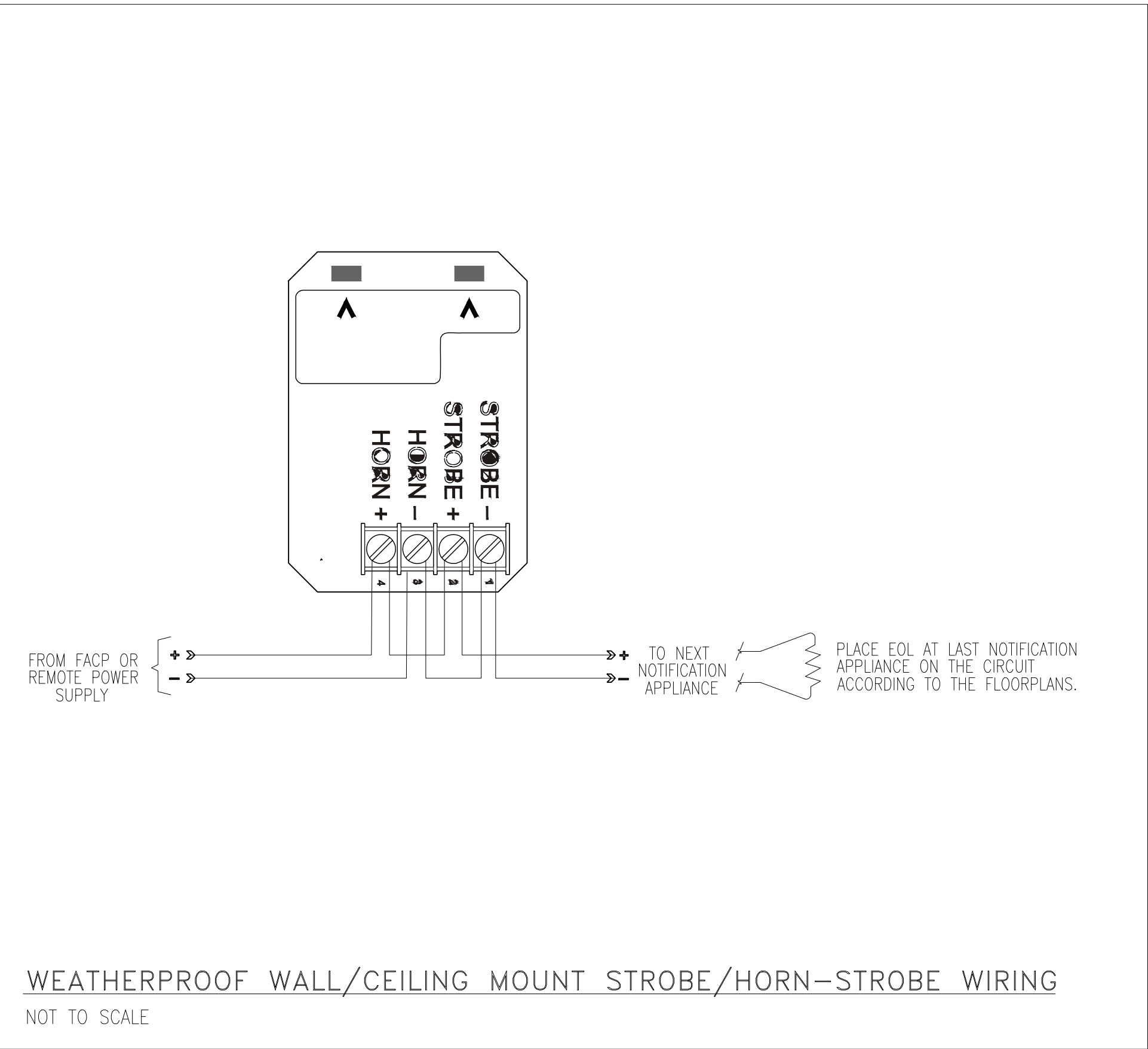
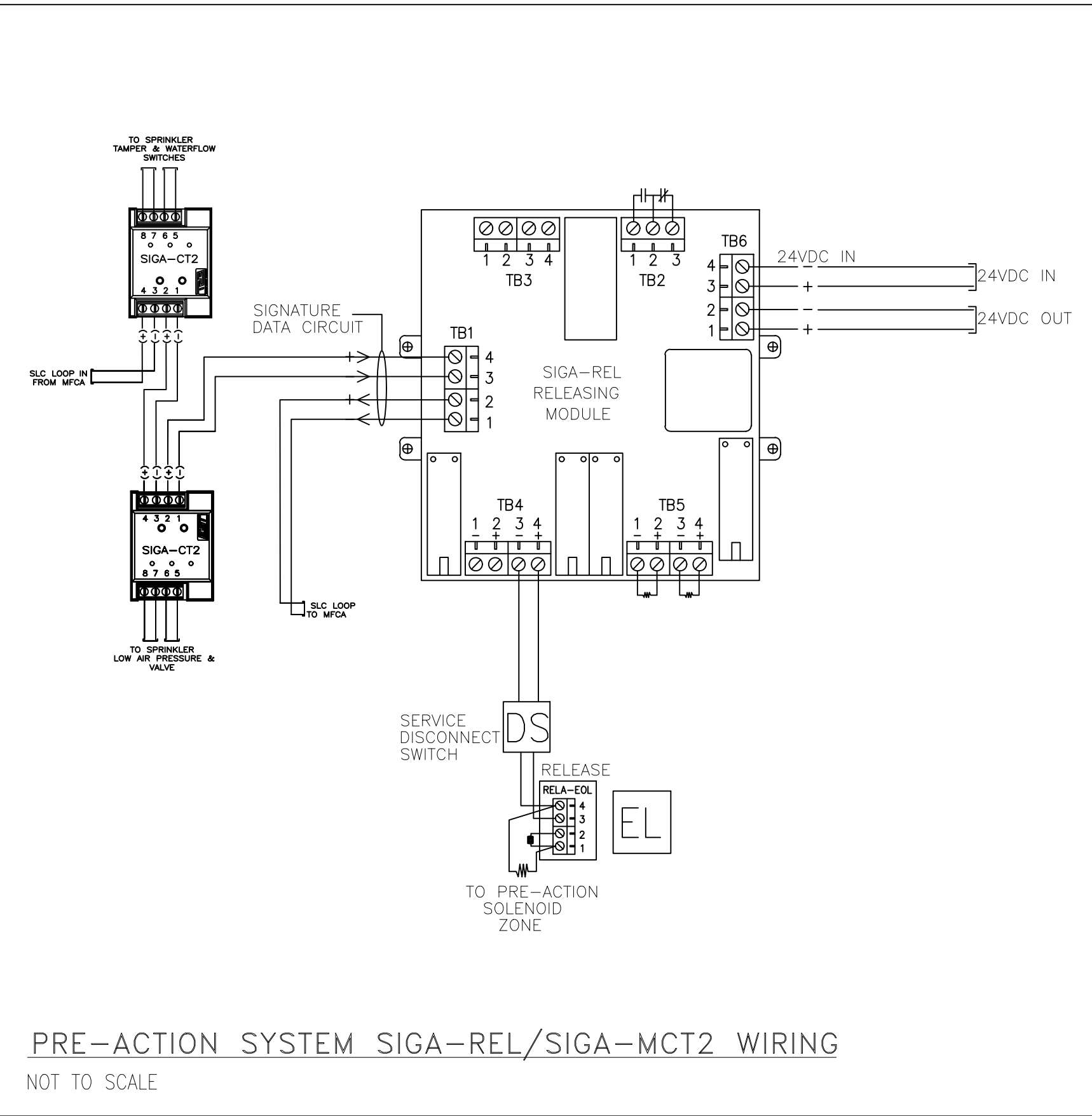
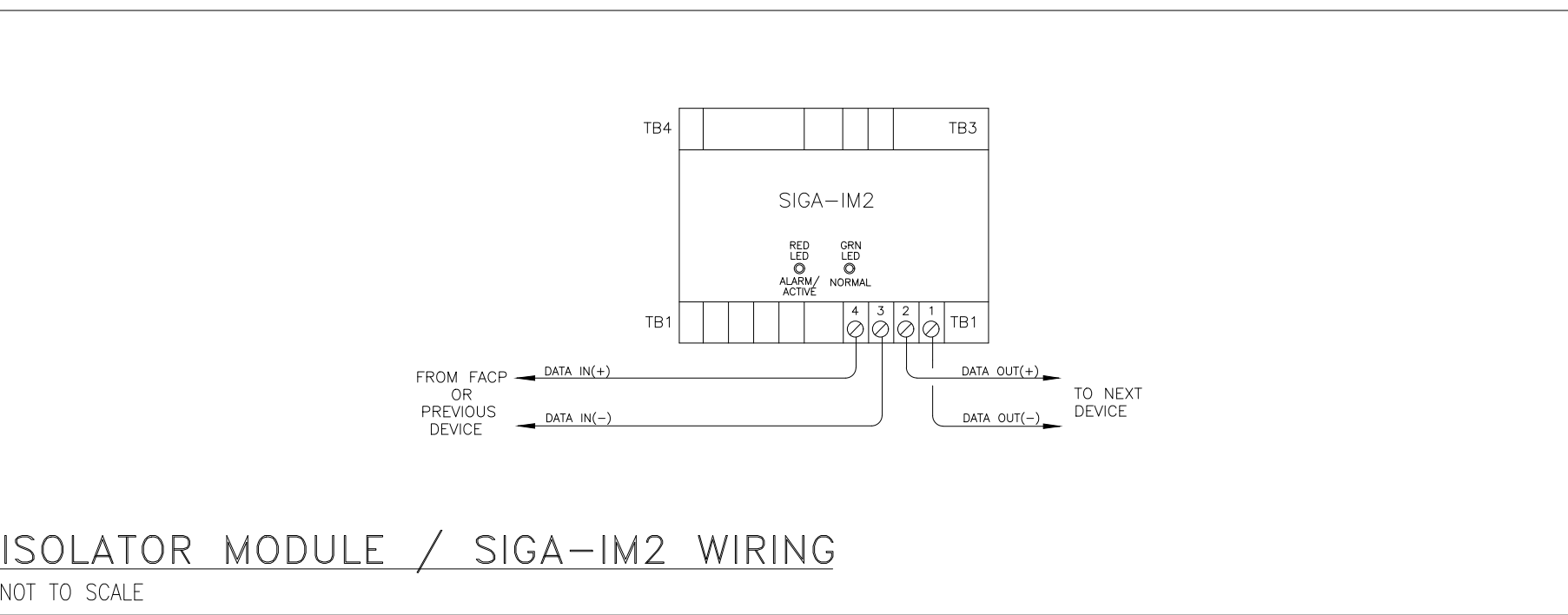
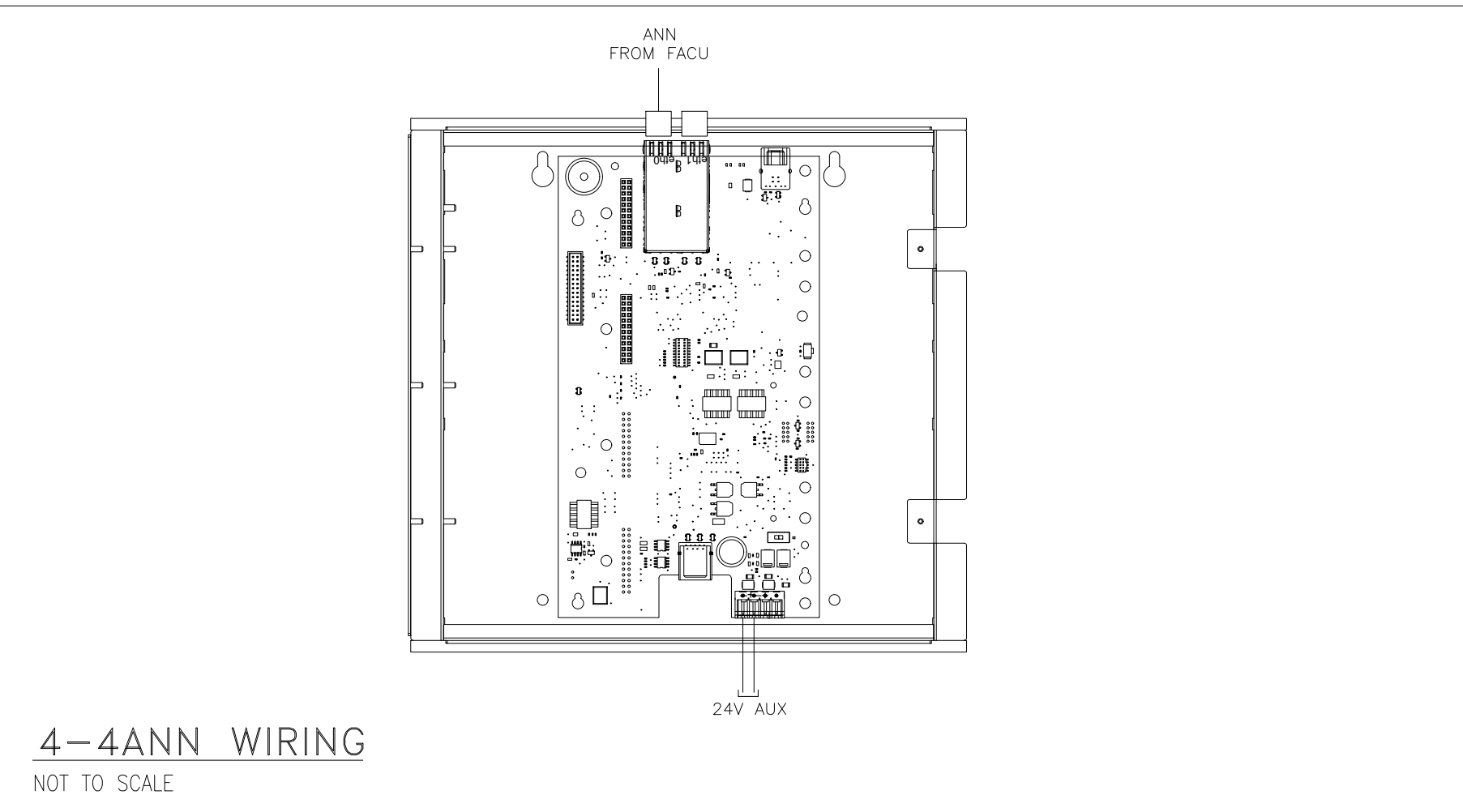
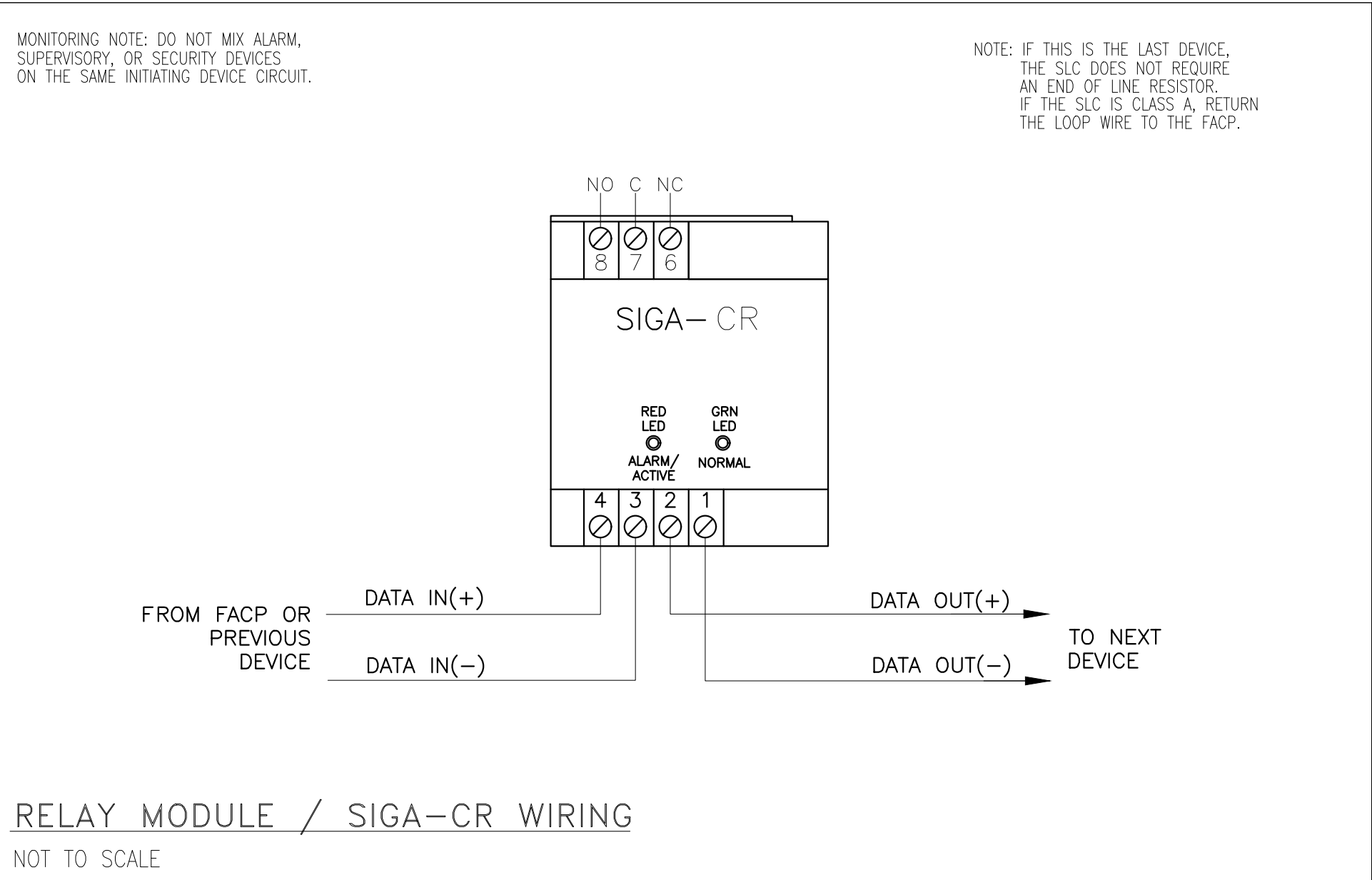
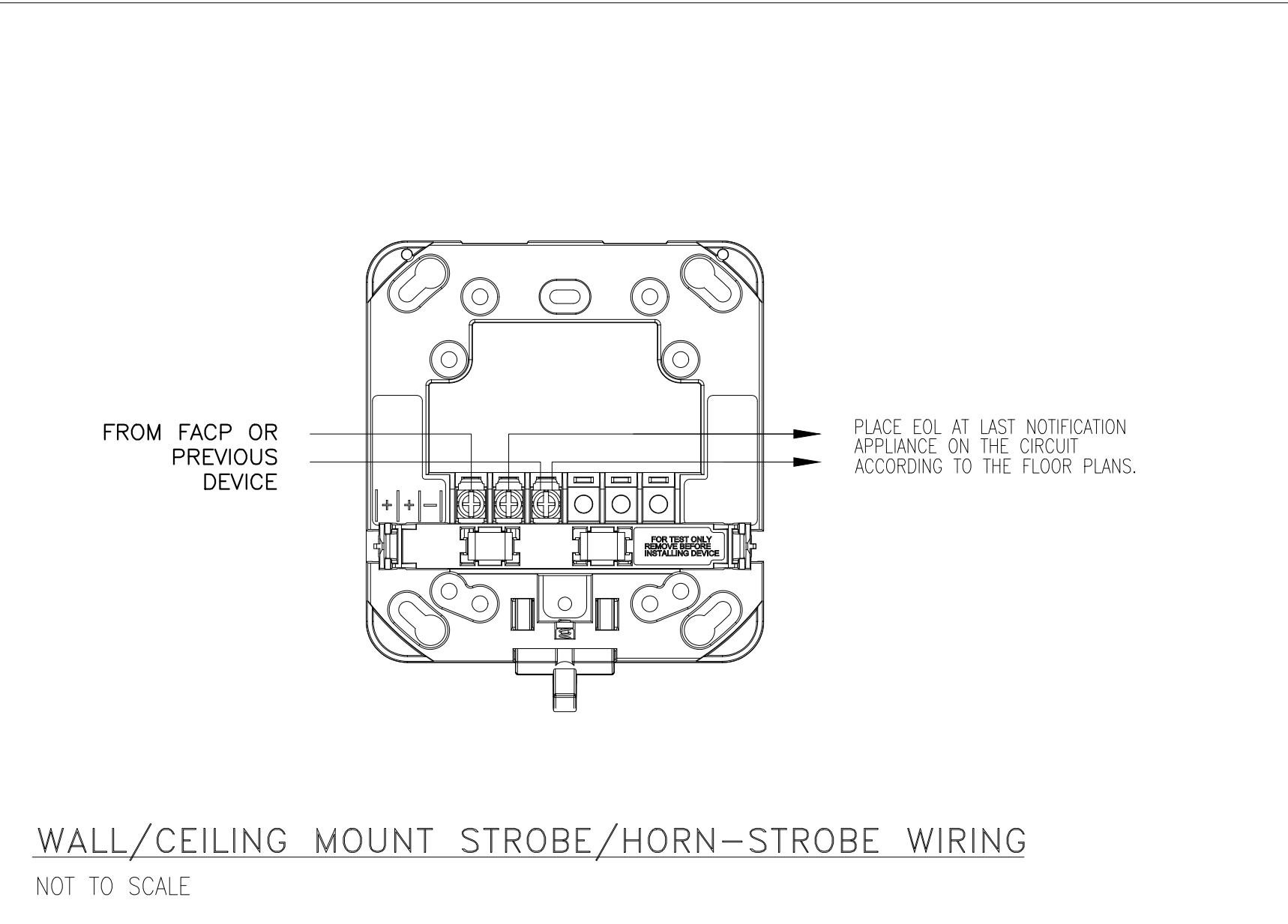
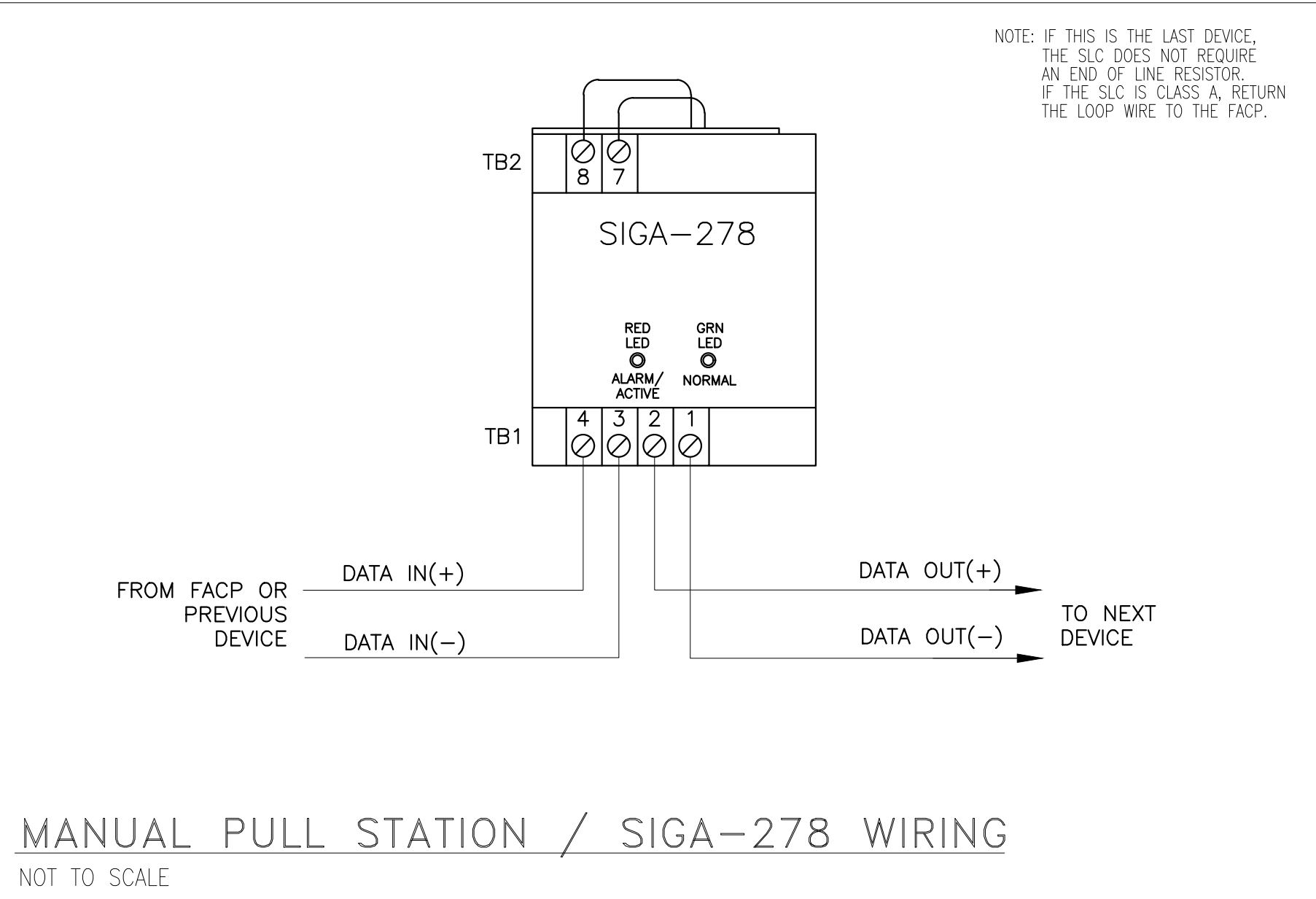
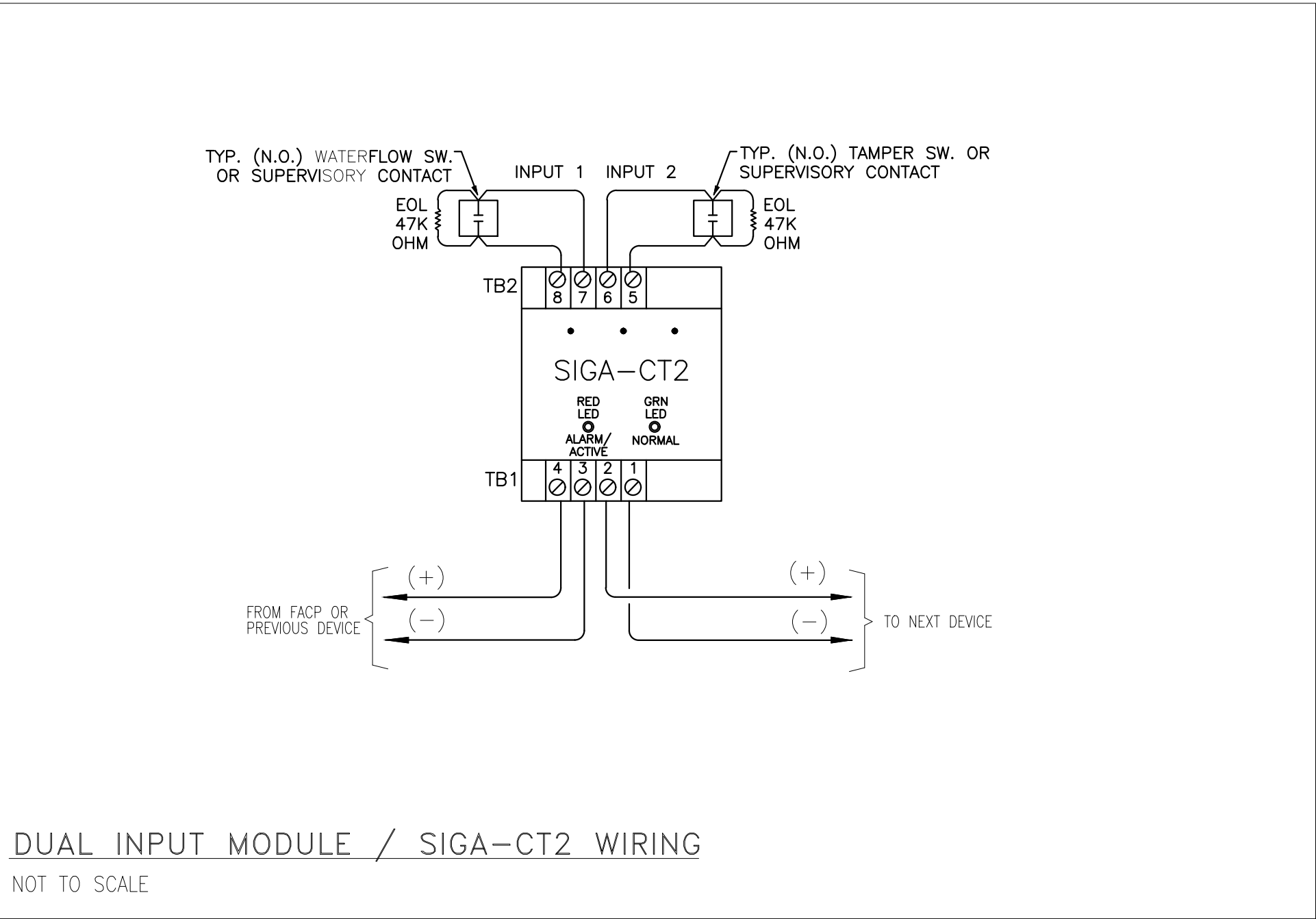
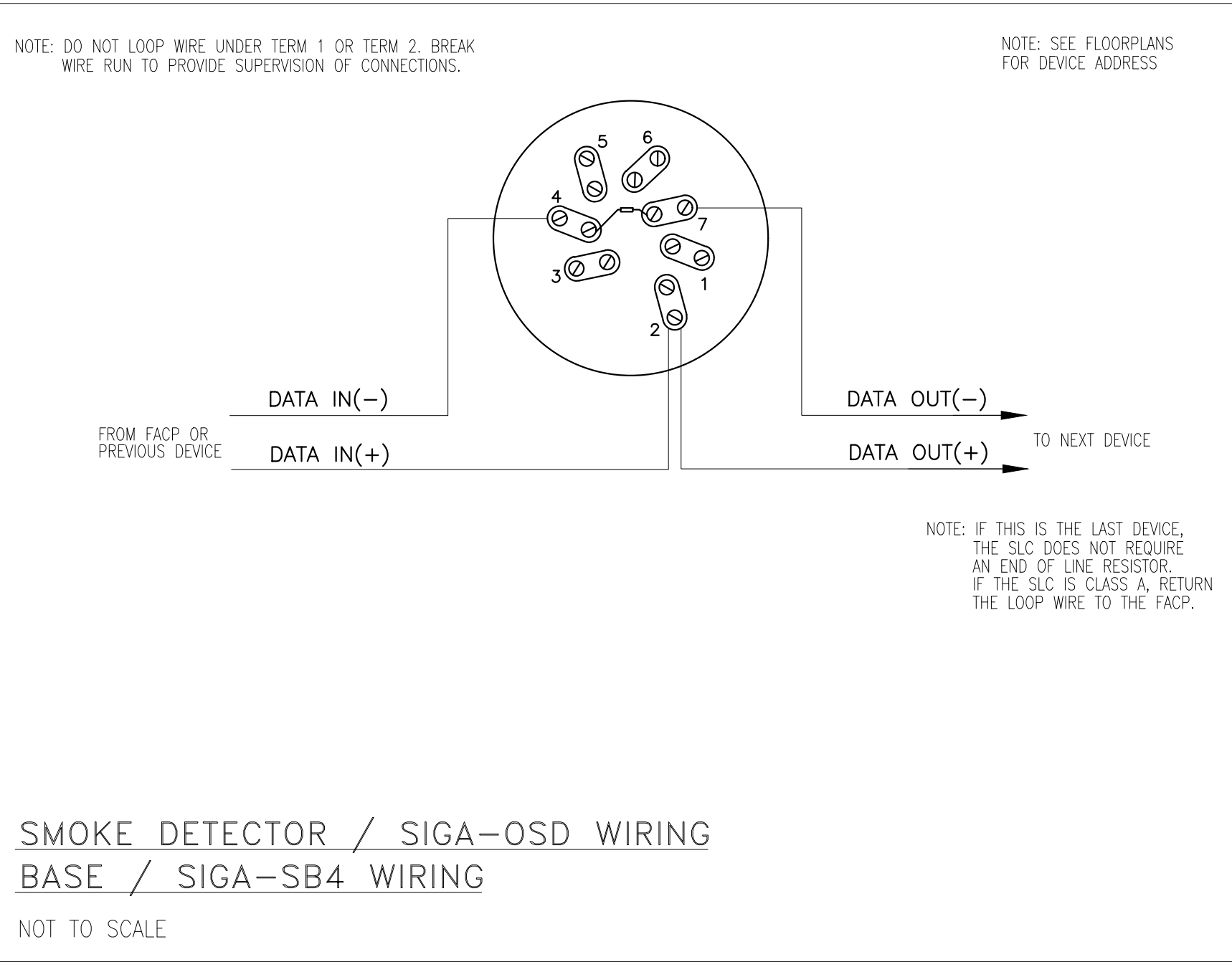
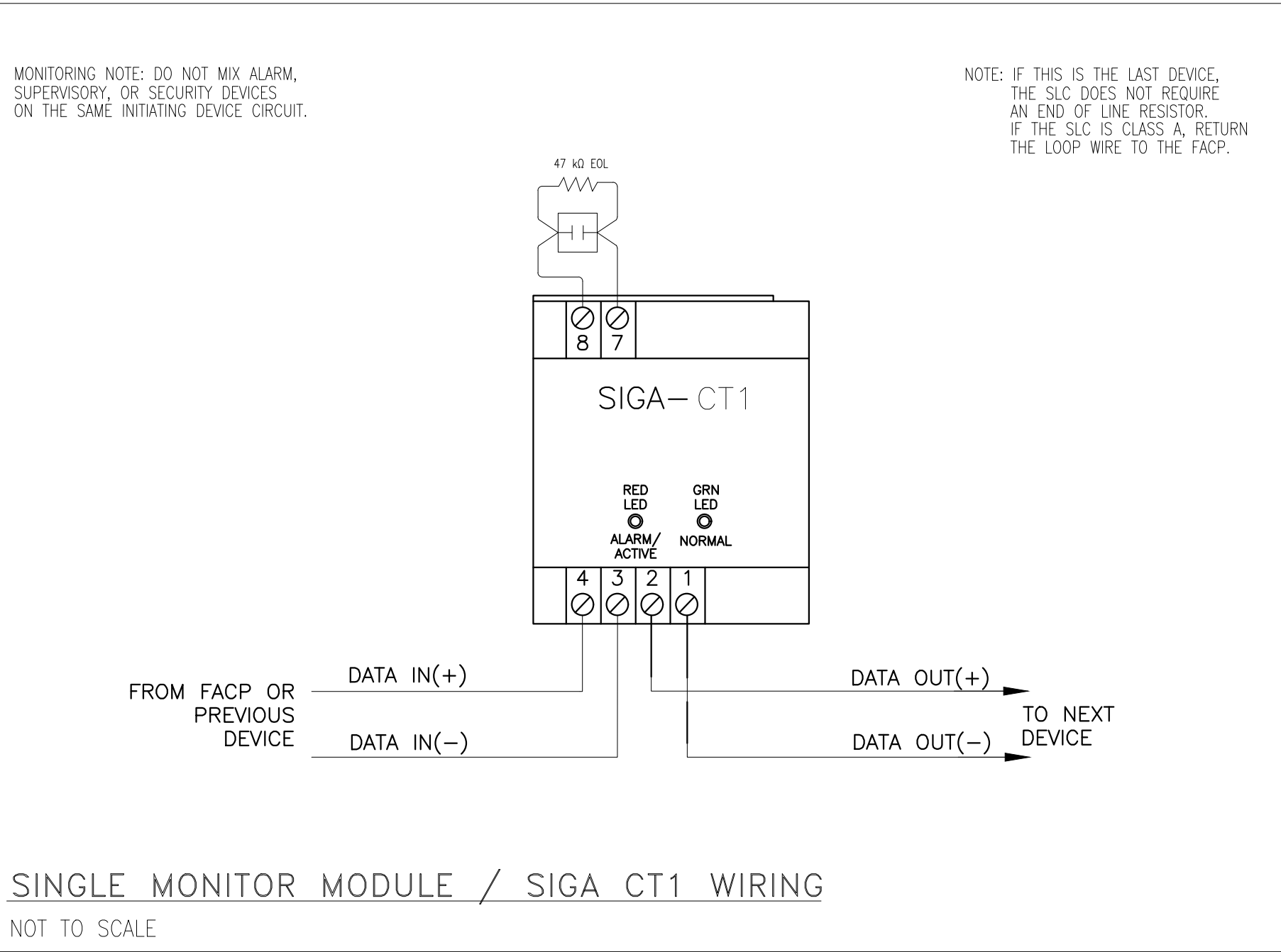
SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
CALCULATIONS &  
WIRING DIAGRAMS  
FA-20

SCALE: N.T.S.  
DRAWN: JEM  
REVIEWED: CSI  
DATE: 04/15/2025

DRAWING NUMBER:

FA-20



LICENSE:

CERTIFIED ALARM  
CONTRACTOR  
LICENSE NUMBER:

PROJECT:

JOB NUMBER:

X-XXXXXX

| #  | REVISION      | DATE       |
|----|---------------|------------|
| 0  | FIRST RELEASE | 10/23/2023 |
| 1  | AHJ REVISION  | 04/18/2025 |
| 2  |               |            |
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CERTIFIED FIRE ALARM DESIGNER:

SHEET TITLE:

FIRE ALARM SYSTEM  
FIRE ALARM  
WIRING DIAGRAMS  
FA-21

SCALE: 1/8" = 1'-0"

DRAWN: JEM

REVIEWED: CSI

DATE: 04/15/2025

DRAWING NUMBER: