

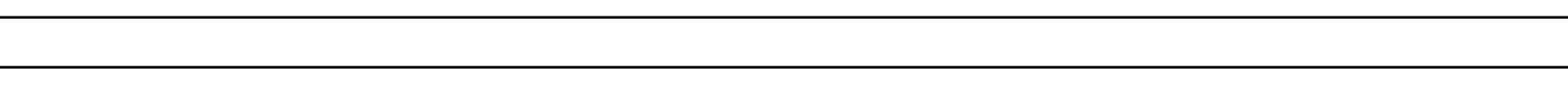
BUILDING/PROJECT USE: BUSINESS  
CONSTRUCTION TYPE: TYPE IIB (FULLY SPRINKLED)  
OCCUPANCY CLASSIFICATION: A-3 ASSEMBLY  
USE CLASSIFICATION: B-BUSINESS

1. All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
2. All manual pull station shall be mounted no less than 42" to the bottom of the box, and no more than 48" to the top of the box from the finished floor.
3. All strobes and horn/strobes shall be located so the bottom of the device is not less than 80 inches above the finished floor and not greater than 96 inches above the finished floor.
4. All notification devices shall be located no less than 6 inches below finished ceilings.
5. The candle rating of the strobes or horn/strobes shall be shown on the drawings.
6. The location of the notification devices shall be at a uniform height for all devices.
7. All cables, conduits, or wire mold shall be securely fastened to the structure.
8. Smoke detectors shall be located in the ceiling no less than 4 inches from a sidewall to the nearest edge of the detector.
9. Drawings indicate general fire alarm device locations and Field Verifi indicate locations with minimal deviations and document any changes.
10. FACP & Power Supplies shall be on a dedicated 120V, 20A circuit breaker marked in red with lock-on provision.
11. Fire Alarm wire paths are reserved for fire alarm cabling only. Including all UL listed fire barrier penetrations.
12. If a watertight has not been provided by the sprinkler contractor, then an Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF in line with the FDC. See NFPA 1. Coordinate locations with the local fire department or AHJ.
13. All ceilings are 10' or below unless otherwise noted.
14. Default batteries are 18 - amp hour unless otherwise noted.
15. LED Remote Test Switches are to be mounted directly below the duct detector. Per NFPA 70, NEC, the manual controls shall be located more than 6'-6" above the finished.

16. In the bottom of the elevator hoist-way which is sprinklered the detectors shall be with 24" of the sprinkler head.

**GIBBENS DRAKE SCOTT, INC**  
Missouri State Certificate of Authority #000816

## ENGINEERING

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|       |            |
|-------|------------|
| FA-01 | Coversheet |
|-------|------------|

## Overall Fire Alarm: Main Level

Overall Fire Alarm: Lower Level

### Riser Diagram, Battery and Circuit Calculations

## NFPA 72 Device Reference

GIBBENS DRAKE SCOTT, INC  
Missouri State Certificate of Authority #000816  
9201 E. 63rd STREET, SUITE 100  
RAYTOWN, MISSOURI 64133

6/24/2025  
JAY R. GUERRA  
LICENSE # E-26382

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| REVISIONS: | DATE: |
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| <p> <math>\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}</math><br/> <math>\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}</math><br/> <math>\frac{1}{16} \times \frac{1}{16} = \frac{1}{256}</math><br/> <math>\frac{1}{256} \times \frac{1}{256} = \frac{1}{65,536}</math><br/> <math>\frac{1}{65,536} \times \frac{1}{65,536} = \frac{1}{4,294,967,296}</math> </p> | <p> <math>\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}</math><br/> <math>\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}</math><br/> <math>\frac{1}{16} \times \frac{1}{16} = \frac{1}{256}</math><br/> <math>\frac{1}{256} \times \frac{1}{256} = \frac{1}{65,536}</math><br/> <math>\frac{1}{65,536} \times \frac{1}{65,536} = \frac{1}{4,294,967,296}</math> </p> |
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## REFERENCES

# ENVISION



VEEVA TECHNOLOGY GROUP

(005 W 150 181)

Overland Park, KS 66203

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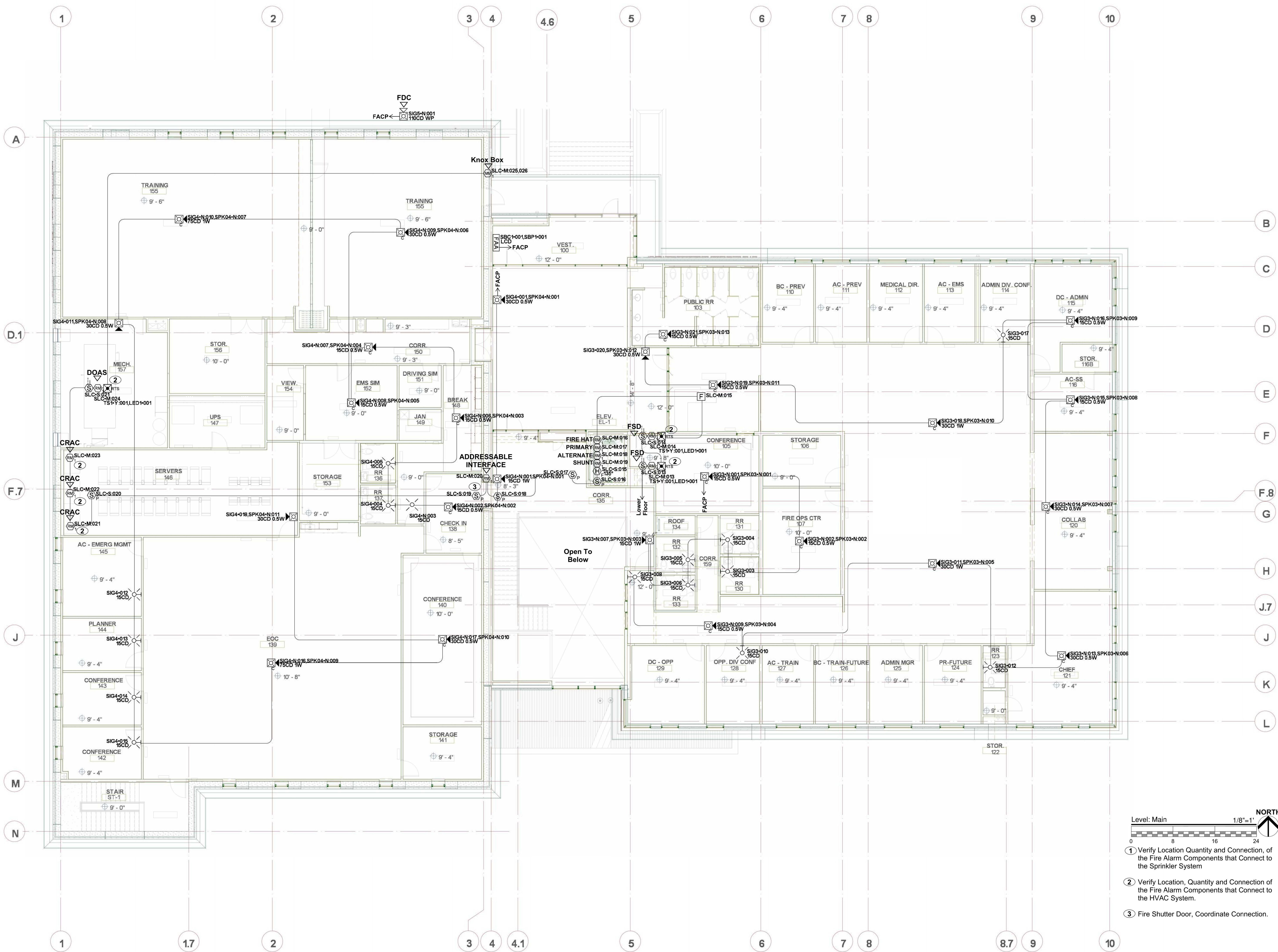
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TITLE: Coversheet

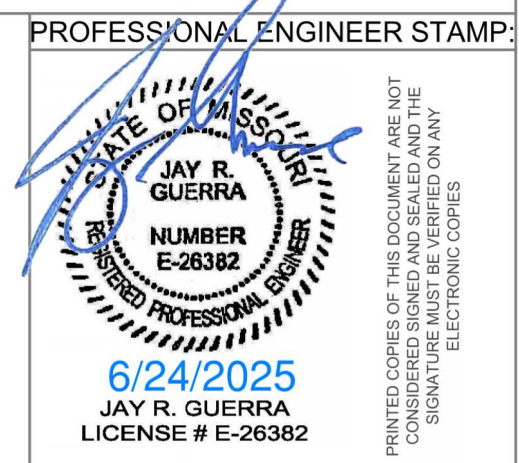
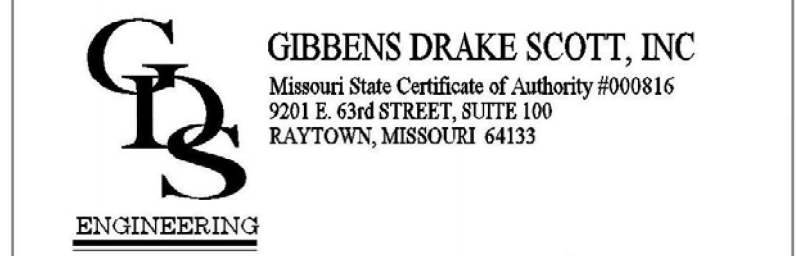
SCALE AT: DATE: 6/23/2025 DESIGNED BY:

|             |                  |           |
|-------------|------------------|-----------|
| PROJECT NO: | DRAWING NO:FA-01 | REVISION: |
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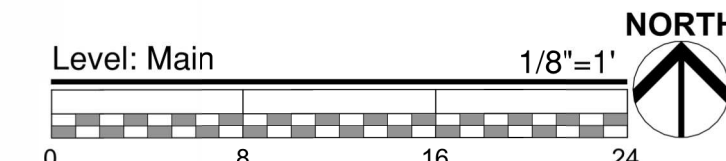


- NOTES:**
1. All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
  2. All manual pull station shall be mounted no less than 42" to the bottom of the box, and no more than 48" to the top of the box from the finished floor.
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  13. All ceilings are 10' or below unless otherwise noted.
  14. Default batteries are 18 - amp hour unless otherwise noted.
  15. LED Remote Test Switches are to be mounted directly below the duct detector. Per NFPA 70, NEC, the manual controls shall be located more than 6'-6" above the finished.
  16. In the bottom of the elevator hoist-way which is sprinklered the detectors shall be with 24" of the sprinkler head.
  17. Fire Alarm initiating devices inside elevator hoist ways shall be required to be accessible for service, testing and maintenance from outside the elevator hoist way.



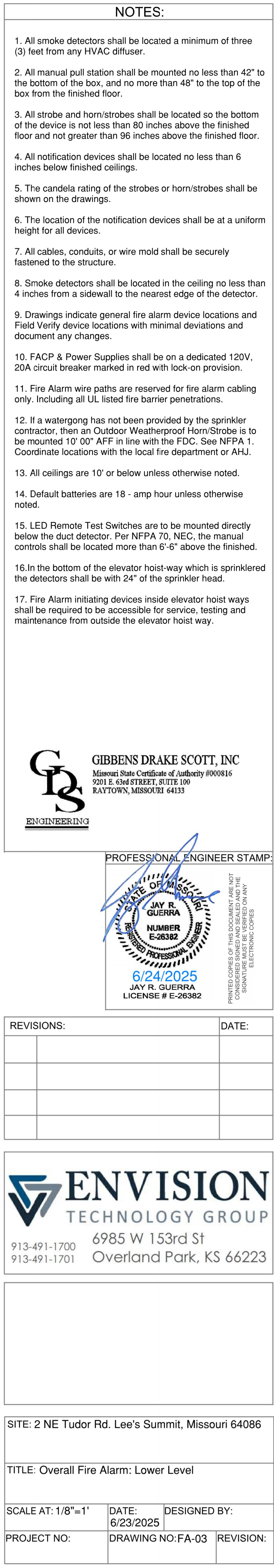
| REVISIONS: | DATE: |
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**ENVISION**  
TECHNOLOGY GROUP  
6985 W 153rd St  
Overland Park, KS 66223  
913-491-1700  
913-491-1701



1. Verify Location Quantity and Connection, of the Fire Alarm Components that Connect to the Sprinkler System
2. Verify Location, Quantity and Connection of the Fire Alarm Components that Connect to the HVAC System.
3. Fire Shutter Door, Coordinate Connection.

|                                                   |                   |              |
|---------------------------------------------------|-------------------|--------------|
| SITE: 2 NE Tudor Rd. Lee's Summit, Missouri 64086 |                   |              |
| TITLE: Overall Fire Alarm: Main Level             |                   |              |
| SCALE AT: 1/8"=1'                                 | DATE: 6/23/2025   | DESIGNED BY: |
| PROJECT NO:                                       | DRAWING NO: FA-02 | REVISION:    |



NOTES:

| Battery Calculations for Panel: FACP                                  |      |                                                                         |                  |                     |                   |                   |
|-----------------------------------------------------------------------|------|-------------------------------------------------------------------------|------------------|---------------------|-------------------|-------------------|
| Part No: 6820EVS - 1, 110-PT ADDRESSABLE FACP, EMERGENCY VOICE SYSTEM |      |                                                                         |                  |                     |                   |                   |
| Job number: 1 Job name: Drawing1                                      |      |                                                                         |                  |                     |                   |                   |
| Part No.                                                              | Qty. | Description                                                             | Standby          | Total Standby       | Alarm             | Total Alarm       |
| Panel Equipment                                                       |      |                                                                         |                  |                     |                   |                   |
| 6820EVS                                                               | 1    | 6820EVS, MBL Main Board                                                 | 190.0000mA       | 190.0000mA          | 250.0000mA        | 250.0000mA        |
| EVS-VCM                                                               | 1    | VOICE COMMAND MODULE                                                    | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
|                                                                       |      |                                                                         | Total Panel Stry | 190.0000mA          | Total Panel Alarm | 250.0000mA        |
| Peripheral Devices                                                    |      |                                                                         |                  |                     |                   |                   |
| SRLED                                                                 | 24   | L-Series STROBE WALL, Red (Notification) 15CD                           | 0.0000mA         | 0.0000mA            | 19.0000mA         | 432.0000mA        |
| SCRLED                                                                | 10   | STROBE, CEILING, Red (Notification) 15CD                                | 0.0000mA         | 0.0000mA            | 19.0000mA         | 190.0000mA        |
| SFSPCRLED                                                             | 18   | L-Series Speaker Strobe LED, Ceiling, Red (Notification) 30CD           | 0.0000mA         | 0.0000mA            | 22.0000mA         | 396.0000mA        |
| SFSPCRLED                                                             | 24   | L-Series Speaker Strobe LED, Ceiling, Red (Notification) 15CD           | 0.0000mA         | 0.0000mA            | 19.0000mA         | 414.0000mA        |
| SFSPRLED                                                              | 6    | L-Series Speaker Strobe LED, Wall, Red (Notification) 30CD              | 0.0000mA         | 0.0000mA            | 22.0000mA         | 132.0000mA        |
| SFSPRLED                                                              | 2    | L-Series Speaker Strobe LED, Wall, Red (Notification) 15CD              | 0.0000mA         | 0.0000mA            | 19.0000mA         | 38.0000mA         |
| SFSPCRLED                                                             | 2    | L-Series Speaker Strobe LED, Ceiling, Red (Notification) 15CD           | 0.0000mA         | 0.0000mA            | 19.0000mA         | 140.0000mA        |
| P2RK                                                                  | 1    | HORN/STROBE, 2 WIRE, STANDARD CD, Red, OUTDOOR (Notification) 19CD 8t1B | 0.0000mA         | 0.0000mA            | 20.0000mA         | 20.0000mA         |
| 5860R                                                                 | 1    | REMOTE LCD ANNUNCIATOR, Red (Power)                                     | 20.0000mA        | 20.0000mA           | 20.0000mA         | 20.0000mA         |
| 5860R                                                                 | 1    | REMOTE LCD ANNUNCIATOR, Red (Swal)                                      | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
| SS-PHOTO                                                              | 10   | SS-PHOTO, Photoelectric Smoke Detector (Signaling line)                 | 0.2000mA         | 2.0000mA            | 2.0000mA          | 20.0000mA         |
| SK-PULL_DA                                                            | 2    | PULL STATION, DOUBLE ACTION, ADDRESSABLE (Signaling line)               | 0.3750mA         | 0.7500mA            | 5.0000mA          | 10.0000mA         |
| SS-HEAT                                                               | 4    | SS-HEAT, Fixed Temperature Thermal Detector, 135F (Signaling line)      | 0.0000mA         | 0.0000mA            | 2.0000mA          | 8.0000mA          |
| SK-RELAY                                                              | 16   | RELAY MODULE, ADDRESSABLE (Signaling line)                              | 0.2500mA         | 4.0000mA            | 0.2500mA          | 4.0000mA          |
| SK-DUCT                                                               | 7    | DUCT DETECTOR W/PIRO SENSOR (Signaling line)                            | 0.2700mA         | 1.8900mA            | 0.2700mA          | 1.8900mA          |
| SK-MONITOR 2                                                          | 3    | DUAL MONITOR MODULE (Signaling line)                                    | 0.7500mA         | 2.2500mA            | 0.7500mA          | 2.2500mA          |
| RTS151                                                                | 7    | REMOTE TEST STATION (Test Switch)                                       | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
| RTS151                                                                | 7    | REMOTE TEST STATION (LED)                                               | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
| SFSPRLED                                                              | 36   | L-Series Speaker Strobe LED, Ceiling, Red (Notification) 79Bd 0.5 Watts | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
| SFSPCRLED                                                             | 8    | L-Series Speaker Strobe LED, Ceiling, Red (Notification) 82Bd 1 Watts   | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
| SFSPRLED                                                              | 6    | L-Series Speaker Strobe LED, Wall, Red (Notification) 79Bd 0.5 Watts    | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
| SFSPRLED                                                              | 2    | L-Series Speaker Strobe LED, Wall, Red (Notification) 82Bd 1 Watts      | 0.0000mA         | 0.0000mA            | 0.0000mA          | 0.0000mA          |
|                                                                       |      |                                                                         |                  | Total Periphil Stry | 32.2800mA         | Total Perph Alarm |
|                                                                       |      |                                                                         |                  | Total Standby Amps  | 222.2800mA        | Total Alarm Amps  |
| Standby time: 24 Hrs                                                  |      |                                                                         |                  |                     |                   | 5.335Ah           |
| Alarm time: 15 Min                                                    |      |                                                                         |                  |                     |                   | 0.892Ah           |
| Battery requirement:                                                  |      |                                                                         |                  |                     |                   | 6.227Ah           |
| Requirement with compensation:                                        |      |                                                                         |                  |                     |                   | 7.371Ah           |
| Compensation Factors - Standby:1.25 Alarm:1.25                        |      |                                                                         |                  |                     |                   |                   |

| Circuit Calculations                                                                                                                                      |            | Panel: FACP Card: 02 Circuit:SBP1 |          |                            |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------|----------|----------------------------|--------------|
| Circuit Name: SBP1                                                                                                                                        |            |                                   |          |                            |              |
| Circuit Type: Power/SBUS RS-485      Terminal Voltage: 28V DC      Alphanumeric: 10000A                                                                   |            |                                   |          |                            |              |
| Cable: 14 AWG 2 CONDUCTOR BARE COPPER, TWISTED NON-SHEATHED PLenum F/PL #14                                                                               |            |                                   |          |                            |              |
| <div> <div>Calculations based on Running To Length:</div> <div>Design Criteria: Ambient temperature: 167°F. Max. operating voltage drop: 9%.</div> </div> |            |                                   |          |                            |              |
| Device                                                                                                                                                    | Part No    | Appliance Desc                    | Distance | Current                    | Voltage Drop |
|                                                                                                                                                           | SK 8620EVS | Panel                             |          | 28V                        |              |
| 001                                                                                                                                                       | 5880R      | REMOTE LCD ANNUNCIATOR, RED       | 100'-0"  | 20.0000mA                  | 27.9897V     |
|                                                                                                                                                           |            |                                   | 100'-0"  | 20.0000mA                  | 0.0103V      |
|                                                                                                                                                           |            |                                   |          | Total Current: 20.0000mA   |              |
|                                                                                                                                                           |            |                                   |          | Total Voltage Drop: 0.003V |              |

| Circuit Calculations                                                                   |                  | Panel: FACP Card: 02 Circuit: SBC1 |          |          |              |
|----------------------------------------------------------------------------------------|------------------|------------------------------------|----------|----------|--------------|
| Circuit Name: SBC1                                                                     |                  |                                    |          |          |              |
| Circuit Type: Serial/SBUS RS-485 Terminal Voltage: 5V DC Amperage: 10000mA             |                  |                                    |          |          |              |
| Cable: 18 AWG 2 CONDUCTOR BARE COPPER, TWISTED NONSHIELDED, PLENUM FIRE ALARM FPLP #18 |                  |                                    |          |          |              |
| Calculations based on Running Total Length:                                            |                  |                                    |          |          |              |
| Design Criteria: Ambient Temperature: 50°F Max. operating voltage drop: 9%             |                  |                                    |          |          |              |
| Device                                                                                 | Part No          | Appliance Desc                     | Distance | Current  | Voltage Drop |
| 001                                                                                    | SK 8820EVS Panel | REMOTE LCD ANNUNCIATOR, RED        | 100'-0"  | 0.0000mA |              |

Circuit CalculationsPanel: FACP Card: 02 Circuit:SLC

Circuit Type: Signaling Inlet - SLC

Terminal Voltage: 28VDC

Amperage: 1000MA

Cable: 18 AWG 2 CONDUCTOR BARE COPPER, TERMINAL UNSHIELDED, PLENUM FIRE ALARMA PLP #18

Calculations based on Running Total Length.

Design Criteria: Ambient temperature: 87°F Max. operating voltage drop: 5%

| Device   | Part No      | Appliance Desc                                    | Distance | Current                         | Voltage Drop |
|----------|--------------|---------------------------------------------------|----------|---------------------------------|--------------|
| S001     | SK 8620EVS   | Panel                                             |          |                                 |              |
| S001     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 1-11     | 0.2000mA                        | 2.9989V      |
| M001     | SK-PULL-DA   | PULL STATION, DOUBLE ACTION, ADDRESSABLE          | 4-14     | 0.3750mA                        | 2.9991V      |
| M002/003 | SS-MONITOR-2 | DUAL MONITOR MODULE                               | 22-25    | 0.7500mA                        | 2.9991V      |
| M004/005 | SS-MONITOR-2 | DUAL MONITOR MODULE                               | 2-1      | 0.7500mA                        | 2.9845V      |
| S002     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 82-42    | 0.7500mA                        | 2.9815V      |
| M006     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 2-6      | 0.2500mA                        | 2.9812V      |
| S003     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 10-6     | 0.7500mA                        | 2.9738V      |
| M007     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 2-9      | 0.2500mA                        | 2.9737V      |
| S004     | SS-HEAT      | SS-HEAT, Fixed Temperature Thermal Detector, 155F | 24-10    | 0.2000mA                        | 2.9763V      |
| S005     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 61-11    | 0.2000mA                        | 2.9678V      |
| M008     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 9-7      | 0.2500mA                        | 2.9667V      |
| M009     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 6-10     | 0.2500mA                        | 2.9666V      |
| S006     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 5-6      | 0.2500mA                        | 2.9666V      |
| S010     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 9-4      | 0.2500mA                        | 2.9644V      |
| S008     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 29-11    | 0.2000mA                        | 2.9609V      |
| S009     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 7-6      | 0.2000mA                        | 2.9601V      |
| S007     | SS-HEAT      | SS-HEAT, Fixed Temperature Thermal Detector, 155F | 10-10    | 0.2000mA                        | 2.9746V      |
| S010     | SS-HEAT      | SS-HEAT, Fixed Temperature Thermal Detector, 155F | 11-7     | 0.2000mA                        | 2.9598V      |
| S011     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 9-6      | 0.7500mA                        | 2.9576V      |
| S011     | SK-RELAY     | RELAY MODULE, ADDRESSABLE                         | 2-4      | 0.2500mA                        | 2.9576V      |
| S012     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 5-4      | 0.7500mA                        | 2.9571V      |
| M012     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-6      | 0.2500mA                        | 2.9787V      |
| S013     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 212-24   | 0.7500mA                        | 2.9375V      |
| M013     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-9      | 0.2500mA                        | 2.9374V      |
| S014     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 10-8     | 0.7500mA                        | 2.9368V      |
| S014     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 2-2      | 0.2500mA                        | 2.9368V      |
| M015     | SK-PULL-DA   | PULL STATION, DOUBLE ACTION, ADDRESSABLE          | 16-11    | 0.3750mA                        | 2.9368V      |
| M016     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 28-2     | 0.2500mA                        | 2.9333V      |
| S017     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-6      | 0.2500mA                        | 2.9332V      |
| S018     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-7      | 0.2500mA                        | 2.9332V      |
| S019     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-4      | 0.2500mA                        | 2.9331V      |
| S015     | SS-HEAT      | SS-HEAT, Fixed Temperature Thermal Detector, 155F | 1-5      | 0.2000mA                        | 2.9331V      |
| S016     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 1-8      | 0.2000mA                        | 2.9333V      |
| S017     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 5-7      | 0.2000mA                        | 2.9328V      |
| S018     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 17-9     | 0.2000mA                        | 2.9326V      |
| S019     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 4-4      | 0.2500mA                        | 2.9326V      |
| S019     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 4-5      | 0.2000mA                        | 2.9317V      |
| S020     | SS-PK-SHTO   | SS-PK-SHTO, Photoelectric Smoke Detector          | 75-5     | 0.2000mA                        | 2.9289V      |
| M021     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 9-8      | 0.2500mA                        | 2.9289V      |
| M022     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 6-6      | 0.2500mA                        | 2.9287V      |
| M023     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-10     | 0.2500mA                        | 2.9287V      |
| S021     | SK-DUCT      | DUCT DETECTOR W/PIPHOTO SENSOR                    | 16-5     | 0.7500mA                        | 2.9292V      |
| S024     | SS-RELAY     | RELAY MODULE, ADDRESSABLE                         | 1-11     | 0.2500mA                        | 2.9292V      |
| M025/026 | SS-MONITOR-2 | DUAL MONITOR MODULE                               | 115-10   | 0.7500mA                        | 2.9208V      |
|          |              |                                                   | 895-11   | 12.2800mA                       |              |
|          |              |                                                   |          | Total Current: 2.2800MA         |              |
|          |              |                                                   |          | Total VdROP Generated: 0.2626V  |              |
|          |              |                                                   |          | (Total VdROP Generated:0.2626%) |              |

| Circuit Calculations                                              |                        |      | Panel: FACP |         | Card: 02    |       | Circuit:SPK01 |                   |  |
|-------------------------------------------------------------------|------------------------|------|-------------|---------|-------------|-------|---------------|-------------------|--|
| Design Criteria: Ambient temperature: 167°F Maximum dB Drop: 3 dB |                        |      |             |         |             |       |               |                   |  |
| Circuit                                                           | Description            | Type | Total Len   | SPSRLED | Total Watts | Gauge | dB Loss       | Max Allowable Len |  |
| SPK01                                                             | Notification/Audio 70v | 70v  | 387-ft      | 10      | 7.00 Watts  | #16   | -0.02 dB      | 57755             |  |

| Circuit Calculations                                              |      |           | Panel: FACP |         | Card: 02    |       | Circuit:SPK02 |                   |  |
|-------------------------------------------------------------------|------|-----------|-------------|---------|-------------|-------|---------------|-------------------|--|
| Design Criteria: Ambient temperature: 167°F Maximum dB Drop: 3 dB |      |           |             |         |             |       |               |                   |  |
| Description                                                       | Type | Total Len | SPSRLED     | SPSRLED | Total Watts | Gauge | dB Loss       | Max Allowable Len |  |
| Notification/Audio 70v                                            | 70v  | 447-ft    | 13          | 2       | 7.50 Watts  | #18   | -0.09 dB      | 17343             |  |

| Circuit Calculations                                              |      |           | Panel: FACP |         | Card: 02    |       | Circuit:SPK03 |                   |  |
|-------------------------------------------------------------------|------|-----------|-------------|---------|-------------|-------|---------------|-------------------|--|
| Design Criteria: Ambient temperature: 167°F Maximum dB Drop: 3 dB |      |           |             |         |             |       |               |                   |  |
| Description                                                       | Type | Total Len | SPSRLED     | SPSRLED | Total Watts | Gauge | dB Loss       | Max Allowable Len |  |
| Notification/Audio 70v                                            | 70v  | 677-ft    | 11          | 2       | 8.00 Watts  | #18   | -0.05 dB      | 16259             |  |

| Circuit Calculations                                              |      |           | Panel: FACP Card: 02 Circuit:SPK04 |          |             |       |          |                      |
|-------------------------------------------------------------------|------|-----------|------------------------------------|----------|-------------|-------|----------|----------------------|
| Design Criteria: Ambient temperature: 167°F Maximum dB Drop: 3 dB |      |           |                                    |          |             |       |          |                      |
| Description                                                       | Type | Total Len | SPSRLED                            | SPSCRLED | Total Watts | Gauge | dB Loss  | Max Allowable Length |
| Notification/Audio 70v                                            |      | 562-9%    | 4                                  | 8        | 7.50 Watts  | #18   | -0.12 dB | 17343'               |

| Circuit Calculations                                                         |         |                                                 | Panel: FACP Card: 02/Circuit/S1 |                     |                      |
|------------------------------------------------------------------------------|---------|-------------------------------------------------|---------------------------------|---------------------|----------------------|
| Circuit Type: Notification                                                   |         | Terminal Voltage: 28V-DC                        | Amperage: 3.0000A               |                     |                      |
| Cable: 14 AWG 2 CONDUCTOR BARE COPPER, TWISTED NON-SHELED PLENUM FPLP #414   |         |                                                 |                                 |                     |                      |
| Calculations based on Max. Running Total Length                              |         |                                                 |                                 |                     |                      |
| Design Criteria Ambient temperature: 107°F, Max. operating voltage drop: 18% |         |                                                 |                                 |                     |                      |
| Device                                                                       | Part No | Appliance Desc                                  | Distance                        | Current             | Voltage Voltage Drop |
| SK 68020VS Panel                                                             |         |                                                 |                                 |                     |                      |
| N001                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 22'-1"                          | 22.0000mA           | 27.948V (0.052%)     |
| 002                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 18'-0"                          | 18.0000mA           | 27.9597V (0.023%)    |
| N003                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 15CD | 17'-3"                          | 18.0000mA           | 27.8891V (0.074%)    |
| N004                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 15CD | 34'-1"                          | 22.0000mA           | 27.8179V (0.0703%)   |
| N005                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 30'-3"                          | 22.0000mA           | 27.7693V (0.0686%)   |
| N006                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 27'-6"                          | 22.0000mA           | 27.7206V (0.0668%)   |
| N007                                                                         | SPCRLED | STROBE, CEILING, RED, 15CD                      | 31'-0"                          | 18.0000mA           | 27.6881V (0.0651%)   |
| N008                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 15CD | 16'-10"                         | 18.0000mA           | 27.614V (0.0625%)    |
| N009                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 66'-11"                         | 18.0000mA           | 27.5384V (0.0916%)   |
| N010                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 33'-10"                         | 22.0000mA           | 27.4689V (0.0845%)   |
| N011                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 30'-6"                          | 22.0000mA           | 27.4492V (0.0407%)   |
| N012                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 37'-5"                          | 22.0000mA           | 27.374V (0.0361%)    |
| N013                                                                         | SPCRLED | L-Series Speaker Strobe LED, Ceiling, Red, 30CD | 30'-6"                          | 22.0000mA           | 27.3892V (0.0239%)   |
| N014                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 29'-11"                         | 18.0000mA           | 27.3397V (0.0293%)   |
| 015                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 64'-8"                          | 18.0000mA           | 27.2805V (0.0862%)   |
| 016                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 6'-3"                           | 18.0000mA           | 27.2159V (0.0867%)   |
| N017                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 52'-4"                          | 18.0000mA           | 27.2346V (0.0592%)   |
| N018                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 29'-9"                          | 18.0000mA           | 27.2217V (0.0121%)   |
| 019                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 22'-6"                          | 18.0000mA           | 27.2095V (0.0125%)   |
| 020                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 14'-0"                          | 18.0000mA           | 27.2033V (0.0068%)   |
| 021                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 6'-3"                           | 18.0000mA           | 27.2009V (0.0023%)   |
| 022                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 10'-3"                          | 18.0000mA           | 27.198V (0.0026%)    |
| 023                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 9'-4"                           | 18.0000mA           | 27.1963V (0.0017%)   |
| 024                                                                          | SRLED   | L-Series Strobe WALL, Red, 15CD                 | 39'-10"                         | 18.0000mA           | 27.1927V (0.0036%)   |
|                                                                              |         |                                                 |                                 | 68'-1"              | 440.0000mA           |
|                                                                              |         |                                                 |                                 | Total Current:      | 450.0000mA           |
|                                                                              |         |                                                 |                                 | Total Voltage Drop: | 2.88%                |
|                                                                              |         |                                                 |                                 | Total Voltage Drop: | 0.8937V              |

| Circuit Calculations                                                         |         |                                                 |                | Panel: FACP Card: 02 Circuit: SI62        |           |              |              |
|------------------------------------------------------------------------------|---------|-------------------------------------------------|----------------|-------------------------------------------|-----------|--------------|--------------|
| Circuit Type: Notification                                                   |         |                                                 |                | Terminal Voltage: 28VDC Amperage: 3.0000A |           |              |              |
| Cable: 14 AWG 2 CONDUCTOR BARE COPPER, TWISTED NON-SHIELD PLenum F/PLP #14   |         |                                                 |                | Circuit Name: SI62                        |           |              |              |
| Calculations based on Running Total Load                                     |         |                                                 |                |                                           |           |              |              |
| Design Criteria: Ambient temperature: 167°F Max. operating voltage drop: 18% |         |                                                 |                |                                           |           |              |              |
| Device                                                                       | Part No | Panel                                           | Appliance Desc | Distance                                  | Current   | Voltage Drop | Voltage Drop |
|                                                                              |         |                                                 |                |                                           |           | 28V          | 28V          |
| N001                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 11'-11"        | 98000mA                                   | 2.9797    |              | (0.043)      |
| N002                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 26'-0"         | 98000mA                                   | 2.9372    |              | (0.029)      |
| N003                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 36'-11"        | 98000mA                                   | 2.7887    |              | (0.035)      |
| N004                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 31'-3"         | 98000mA                                   | 2.7454    |              | (0.038)      |
| N005                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 31'-6"         | 220000mA                                  | 2.7494    |              | (0.035)      |
| N006                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 30'-3"         | 220000mA                                  | 2.7070    |              | (0.041)      |
| 007                                                                          | SPRGLRD | L-Series Speaker Strobe LED, Wall, RED, 30CD    | 34'-6"         | 220000mA                                  | 2.7656    |              | (0.039)      |
| N008                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 22'-2"         | 98000mA                                   | 2.7023    |              | (0.040)      |
| 009                                                                          | SRLED   | L-SERIES STROBE WALL, RED, 15CD                 | 14'-3"         | 98000mA                                   | 2.7023    |              | (0.040)      |
| N010                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 21'-0"         | 220000mA                                  | 2.6733    |              | (0.026)      |
| N011                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 19'-8"         | 98000mA                                   | 2.5690    |              | (0.026)      |
| N012                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 1'-4'-0"       | 98000mA                                   | 2.5228    |              | (0.009)      |
| N013                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 5'-7"          | 98000mA                                   | 2.5484    |              | (0.003)      |
| N014                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 5'-2"          | 98000mA                                   | 2.5443    |              | (0.004)      |
| N015                                                                         | SCRLED  | STROBE, CEILING, RED, 15CD                      | 21'-1"         | 98000mA                                   | 2.5925    |              | (0.016)      |
| N016                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 12'-6"         | 98000mA                                   | 2.5758    |              | (0.007)      |
| 017                                                                          | SPRGLRD | L-Series Speaker Strobe LED, Wall, RED, 30CD    | 13'-8"         | 220000mA                                  | 2.5501    |              | (0.008)      |
| N018                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 26'-7"         | 220000mA                                  | 2.7017    |              | (0.003)      |
| N019                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 22'-11"        | 98000mA                                   | 2.7416    |              | (0.006)      |
| N020                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 27'-0"         | 220000mA                                  | 2.7486    |              | (0.006)      |
| N021                                                                         | SPRGLRD | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 23'-3"         | 98000mA                                   | 2.6865    |              | (0.002)      |
|                                                                              |         |                                                 |                | 447'-0"                                   | 406.000mA |              |              |
|                                                                              |         |                                                 |                | Total Current: 406.000mA                  |           |              |              |
|                                                                              |         |                                                 |                | Total Voltage Drop: 1.83%                 |           |              |              |
|                                                                              |         |                                                 |                | Total Voltage Drop: 0.515V                |           |              |              |

Circuit Calculations

Panel: FACP Card: 02 Circuit:SIG3

Circuit Name: SIG3

Circuit Type: Notification

Terminal Voltage: 28V DC

Amperage: 3.0000A

Cable: 14 AWG 2 CONDUCTOR BARE COPPER, TWISTED NON-SHELD PLENUM F/PLP #14

Calculations based on Running Total Length:

Design Criteria: Ambient temperature: 167°F Max. operating voltage drop: 8%

| Device | Part No   | Appliance Desc                                  | Distance | Current    | Voltage                     | Voltage Drop                |
|--------|-----------|-------------------------------------------------|----------|------------|-----------------------------|-----------------------------|
|        | SK 8602VE | Panel                                           |          |            | 28V                         |                             |
| N001   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 29' 0"   | 18.0000mA  | 2.7984V                     | (0.2048V)                   |
| N002   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 29' 0"   | 18.0000mA  | 2.7389V                     | (0.0565V)                   |
| N003   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 19' 5"   | 18.0000mA  | 2.7004V                     | (0.0354V)                   |
| N004   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 6' 5"    | 18.0000mA  | 1.6928V                     | (0.0196V)                   |
| N005   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 11' 1"   | 18.0000mA  | 1.8744V                     | (0.0194V)                   |
| N006   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 6' 1"    | 18.0000mA  | 1.7865V                     | (0.0179V)                   |
| N007   | SPSRLED   | L-Series Speaker Strobe LED, Wall, RED, 15CD    | 45' 0"   | 18.0000mA  | 2.6441V                     | (0.2224V)                   |
| N008   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 9' 0"    | 18.0000mA  | 1.8735V                     | (0.0126V)                   |
| N009   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 23' 0"   | 18.0000mA  | 2.6150V                     | (0.023V)                    |
| N010   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 11' 2"   | 18.0000mA  | 1.8262V                     | (0.0179V)                   |
| N011   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 52' 5"   | 22.0000mA  | 2.5299V                     | (0.0583V)                   |
| N012   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 30' 4"   | 18.0000mA  | 1.4997V                     | (0.0332V)                   |
| N013   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 26' 2"   | 22.0000mA  | 2.4486V                     | (0.0146V)                   |
| N014   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 37' 4"   | 22.0000mA  | 2.7602V                     | (0.023V)                    |
| N015   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 14' 4"   | 18.0000mA  | 1.7745V                     | (0.0185V)                   |
| N016   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 30' 7"   | 18.0000mA  | 2.4258V                     | (0.0179V)                   |
| N017   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 10' 3"   | 18.0000mA  | 1.7126V                     | (0.0179V)                   |
| N018   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 39' 4"   | 22.0000mA  | 2.4003V                     | (0.0197V)                   |
| N019   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 48' 5"   | 18.0000mA  | 2.3392V                     | (0.0143V)                   |
| N020   | SPSRLED   | L-Series Speaker Strobe LED, Wall, RED, 30CD    | 18' 1"   | 22.0000mA  | 1.7387V                     | (0.0039V)                   |
| N021   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 6' 34"   | 18.0000mA  | 1.3875V                     | (0.0006V)                   |
|        |           |                                                 | 53' 4"   | 398.0000mA |                             |                             |
|        |           |                                                 |          |            | Total Current: 398.0000mA   |                             |
|        |           |                                                 |          |            | (Total VDrop Percent:2.91%) | Total Voltage Drop: 0.0252V |

Circuit Calculations

Panel: FACP Card: 02 Circuit:SIG4

Circuit Name: SIG4

Circuit Type: Notification

Terminal Voltage: 28V DC

Amperage: 3.0000A

Cable: 14 AWG 2 CONDUCTOR BARE COPPER, TWISTED NON-SHELD PLENUM F/PLP #14

Calculations based on Running Total Length:

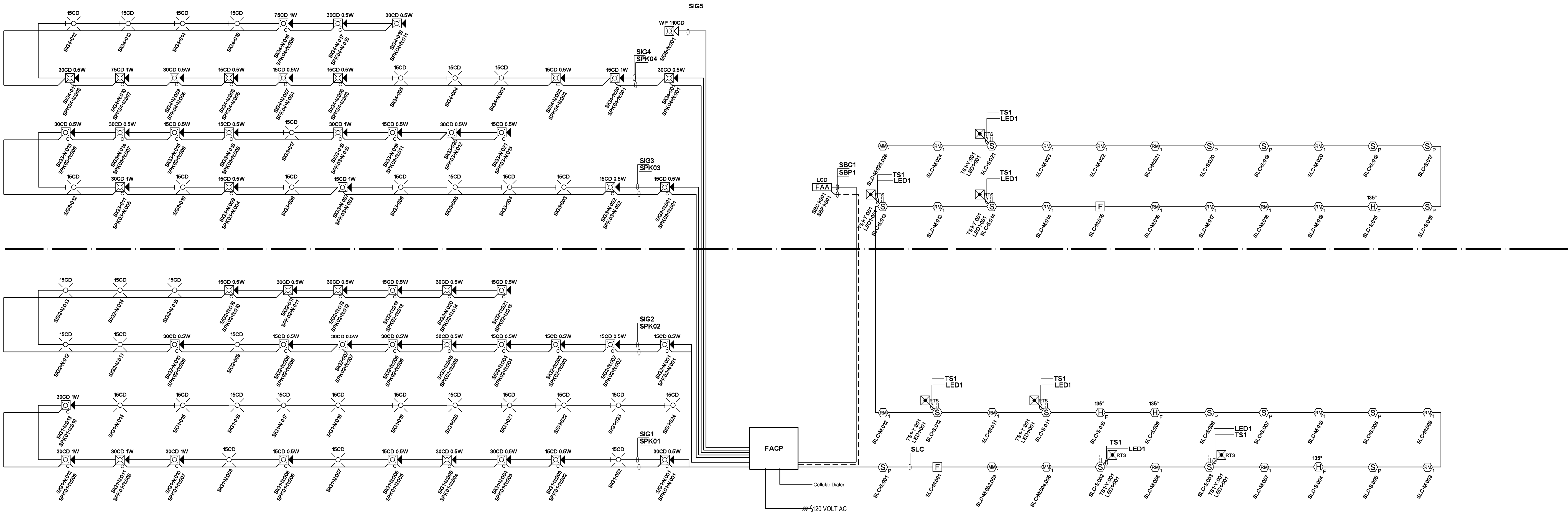
Design Criteria: Ambient temperature: 167°F Max. operating voltage drop: 8%

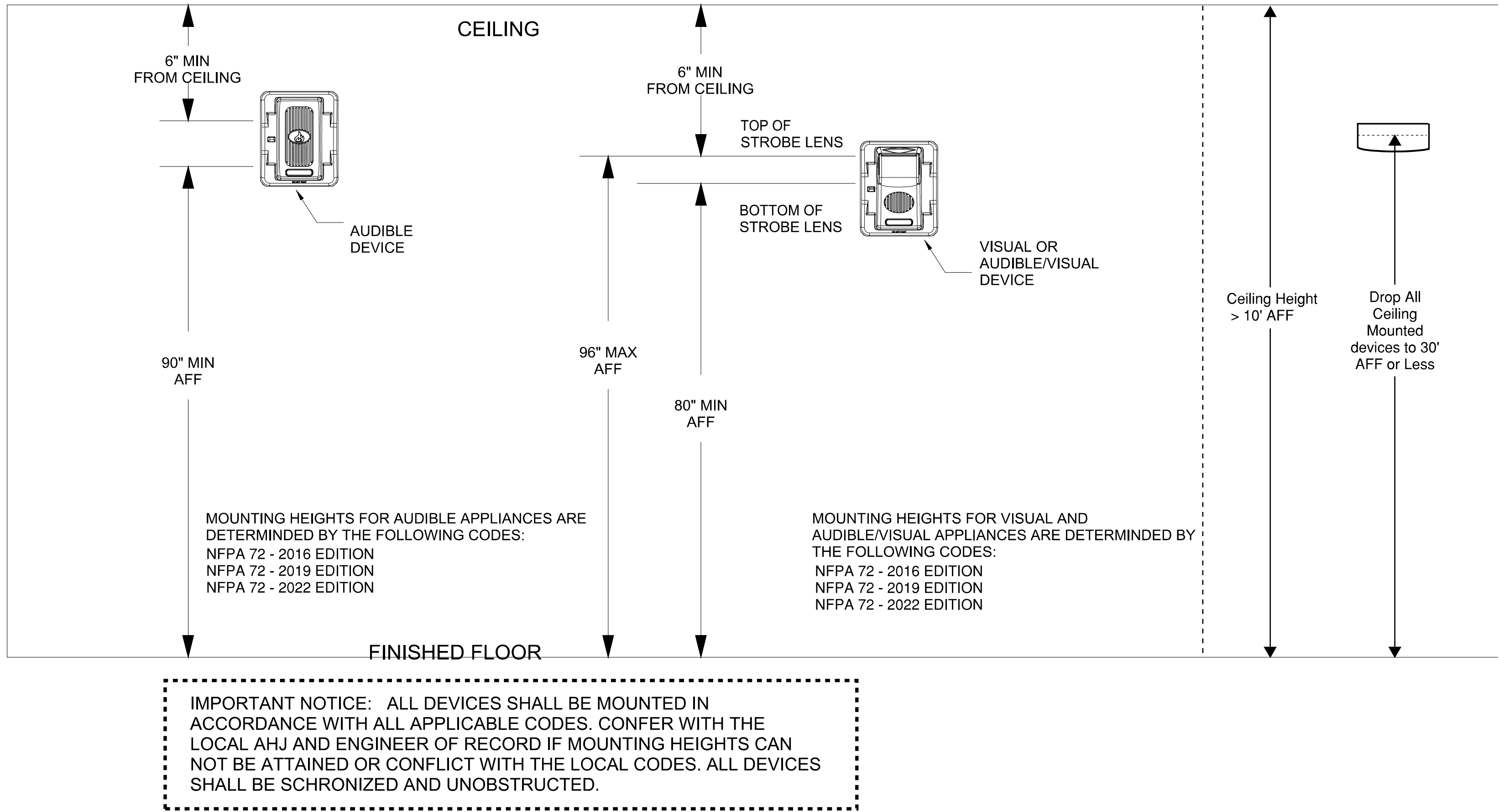
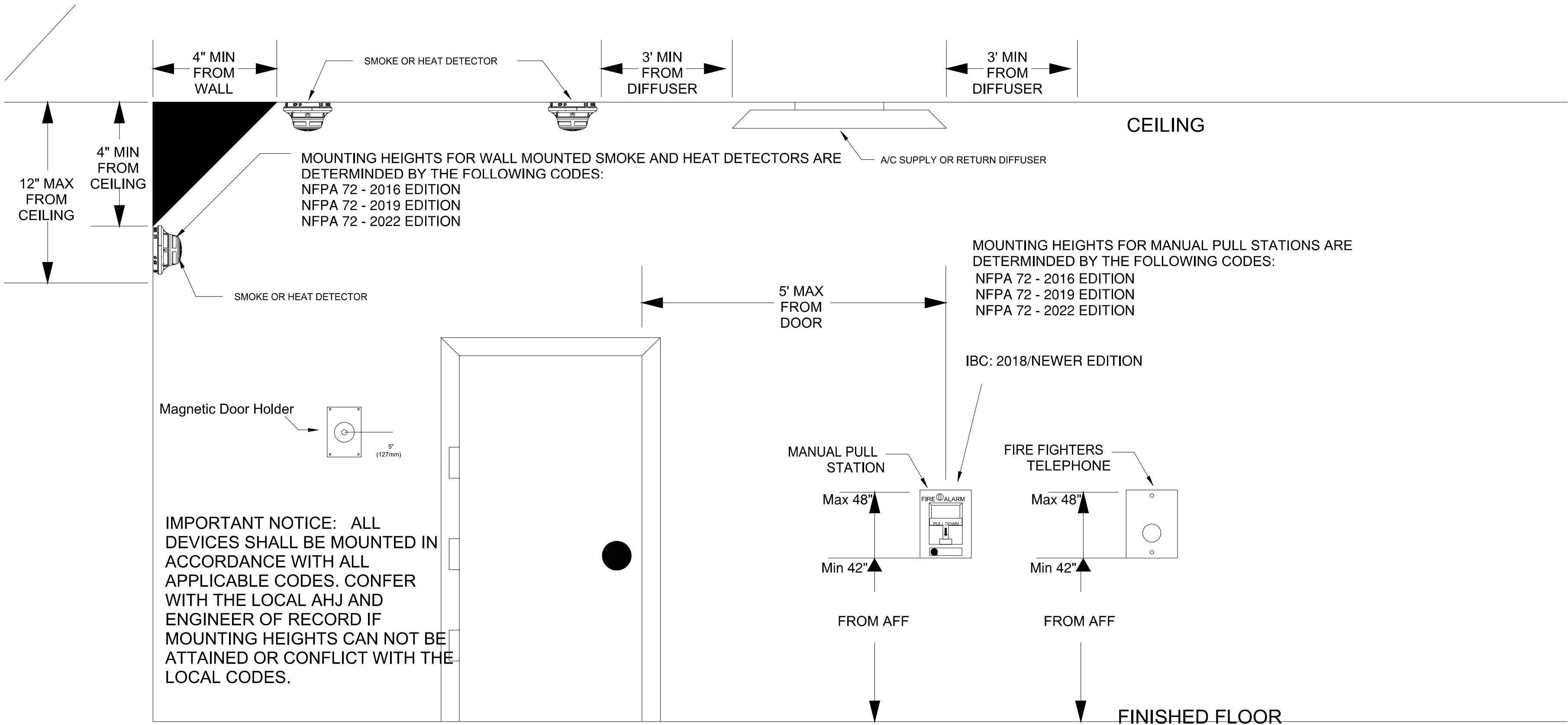
| Device | Part No   | Appliance Desc                                  | Distance | Current    | Voltage                     | Voltage Drop                |
|--------|-----------|-------------------------------------------------|----------|------------|-----------------------------|-----------------------------|
|        | SK 8602VE | Panel                                           |          |            | 28V                         |                             |
| N001   | SPSRLED   | L-Series Speaker Strobe LED, Wall, RED, 30CD    | 100' 0"  | 22.0000mA  | 2.7760V                     | (0.2385V)                   |
| N001   | SPSRLED   | L-Series Speaker Strobe LED, Wall, RED, 15CD    | 33' 5"   | 18.0000mA  | 1.8852V                     | (0.0733V)                   |
| N002   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 14' 5"   | 18.0000mA  | 2.6545V                     | (0.0237V)                   |
| N003   | SRLED     | STROBE CEILING, RED, 15CD                       | 6' 11"   | 18.0000mA  | 1.6749V                     | (0.0126V)                   |
| N004   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 4' 8"    | 18.0000mA  | 1.6339V                     | (0.0091V)                   |
| N005   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 6' 11"   | 18.0000mA  | 1.7686V                     | (0.0153V)                   |
| N006   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 21' 4"   | 18.0000mA  | 2.5804V                     | (0.0322V)                   |
| N007   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 29' 6"   | 18.0000mA  | 2.5503V                     | (0.0561V)                   |
| N008   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 15' 0"   | 18.0000mA  | 2.6339V                     | (0.0091V)                   |
| N009   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 44' 6"   | 22.0000mA  | 2.4475V                     | (0.0623V)                   |
| N010   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 75CD | 41' 6"   | 70.0000mA  | 2.3846V                     | (0.0629V)                   |
| N011   | SPSRLED   | L-Series Speaker Strobe LED, Wall, RED, 15CD    | 31' 0"   | 22.0000mA  | 2.3525V                     | (0.0321V)                   |
| N012   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 15CD | 54' 7"   | 18.0000mA  | 2.2700V                     | (0.0616V)                   |
| N013   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 6' 11"   | 18.0000mA  | 2.2941V                     | (0.0091V)                   |
| N014   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 9' 11"   | 18.0000mA  | 2.2883V                     | (0.0077V)                   |
| N015   | SRLED     | L-SERIES STROBE WALL, RED, 15CD                 | 10' 8"   | 18.0000mA  | 2.2693V                     | (0.0064V)                   |
| N016   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 75CD | 41' 6"   | 70.0000mA  | 2.2268V                     | (0.0491V)                   |
| N017   | SPSRLED   | L-Series Speaker Strobe LED, Ceiling, RED, 30CD | 36' 7"   | 22.0000mA  | 2.2471V                     | (0.0091V)                   |
| N018   | SPSRLED   | L-Series Speaker Strobe LED, Wall, RED, 30CD    | 51' 0"   | 22.0000mA  | 2.2429V                     | (0.0088V)                   |
|        |           |                                                 | 562' 9"  | 466.0000mA |                             |                             |
|        |           |                                                 |          |            | Total Current: 466.0000mA   |                             |
|        |           |                                                 |          |            | (Total VDrop Percent:2.79%) | Total Voltage Drop: 0.0751V |

| Circuit Calculations                                                           |            |                                                       | Panel: FACP Card: 02 Circuit:SIG5 |            |                             |              |
|--------------------------------------------------------------------------------|------------|-------------------------------------------------------|-----------------------------------|------------|-----------------------------|--------------|
|                                                                                |            |                                                       | Circuit Name: SIG5                |            |                             |              |
| Circuit Type: Notification                                                     |            |                                                       | Terminal Voltage: 28V DC          |            | Amperage: 3.0000A           |              |
| Cable: 14 AWG 2 CONDUCTOR BARE COPPER, TWISTED NON-SHEELED PLENUM #4 P/PLP #14 |            |                                                       |                                   |            |                             |              |
| Calculations based on RPTM Total Length.                                       |            |                                                       |                                   |            |                             |              |
| Design Criteria: Ambient temperature: 80°F Max. operating voltage drop: 95%    |            |                                                       |                                   |            |                             |              |
| Device                                                                         | Part No    | Appliance Desc                                        | Distance                          | Current    | Voltage                     | Voltage Drop |
|                                                                                | SK 8820EVS | Panel                                                 |                                   |            |                             |              |
| N001                                                                           | P2RK       | HORN/STROBE, 2 WIRE, STANDARD CD, RED, OUTDOOR, 110CD | 100'-0"                           | 201.0000mA | 27.898V                     | (0.1033V)    |
|                                                                                |            |                                                       | 100'-0"                           |            |                             |              |
|                                                                                |            |                                                       | Total Current: 201.0000mA         |            | Total Voltage Drop: 0.1033V |              |
|                                                                                |            |                                                       | (Total VD Drop Percent=0.37%)     |            |                             |              |

## NOTES:

1. All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
2. All manual pull station shall be mounted no less than 42" to the bottom of the box, and no more than 48" to the top of the box from the finished floor.
3. All strobe and horn/strobes shall be located so the bottom of the device is not less than 80 inches above the finished floor and not greater than 96 inches above the finished floor.
4. All notification devices shall be located no less than 6 inches below finished ceilings.
5. The candela rating of the strobes or horn/strobes shall be shown on the drawings.
6. The location of the notification devices shall be at a uniform height for all devices.
7. All cables, conduits, or wire mold shall be securely fastened to the structure.
8. Smoke detectors shall be located in the ceiling no less than 4 inches from a sidewall to the nearest edge of the detector.
9. Drawings indicate general fire alarm device locations and Field Verify device locations with minimal deviations and document any changes.
10. FACP & Power Supplies shall be on a dedicated 120V, 20A circuit breaker marked in red with lock-on provision.
11. Fire Alarm wire paths are reserved for fire alarm cabling only. Including all UL listed fire barrier penetrations.
12. If a watertight has not been provided by the sprinkler contractor, then an Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF in line with the FDC. See NFPA 1. Coordinate locations with the local fire department or AHJ.
13. All ceilings are 10' or below unless otherwise noted.
14. Default batteries are 18 - amp hour unless otherwise noted.
15. LED Remote Test Switches are to be mounted directly below the duct detector. Per NFPA 70, NEC, the manual controls shall be located more than 6'-6" above the finished.
16. In the bottom of the elevator hoist-way which is sprinklered the detectors shall be with 24" of the sprinkler head.
17. Fire Alarm initiating devices inside elevator hoist ways shall be required to be accessible for service, testing and maintenance from outside the elevator hoist way.



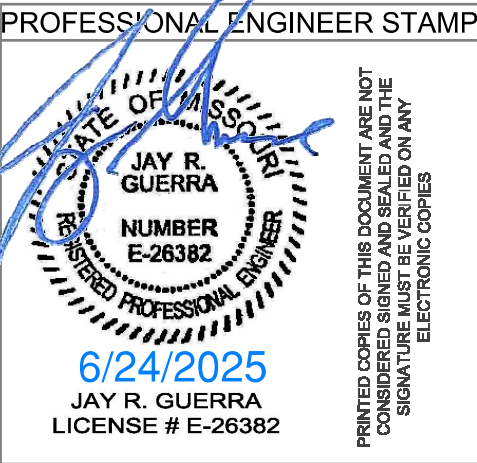
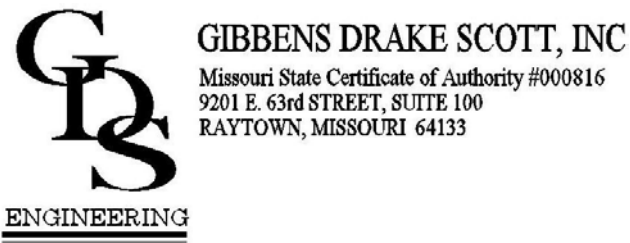


DETECTOR LOCATION REQUIREMENTS FOR WALL SECTIONS  
NFPA 72

| DEPTH OF WALL SECTION ABOVE DOOR                 | DOOR FRAME MOUNTED                                                                                    | CEILING MOUNTED                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| d                                                | SMOKE DETECTOR LISTED FOR FRAME MOUNTING OR AS PART OF CLOSER ASSEMBLY                                | SMOKE DETECTOR CEILING MOUNTED                                                                                            |
| 0 - 610 mm (0 - 24 in.) ON BOTH SIDES OF DOORWAY | A<br>d=610mm (24 in.)<br>DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE                           | B<br>100-300 mm<br>max. 1.52 m (5 ft)<br>d min., but not less than 305 mm (12 in.)<br>ONE DETECTOR MOUNTED ON EITHER SIDE |
| OVER 610 mm (24 in.) ON ONE SIDE ONLY            | C<br>d1 ≤ 610mm (24 in.)<br>d2 > 610mm (24 in.)<br>DETECTOR OR DETECTOR CLOSER MOUNTED ON HIGHER SIDE | D<br>100-300 mm<br>d1 ≤ 610mm (24 in.)<br>d2 > 610mm (24 in.)<br>ONE DETECTOR MOUNTED ON HIGHER SIDE                      |
| OVER 610 mm (24 in.) ON BOTH SIDES               | E<br>d > 610mm (24 in.)<br>DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE                         | F<br>100-300 mm<br>1.52 m (5 ft) max.<br>min. = d<br>TWO DETECTORS REQUIRED                                               |
| OVER 1524 mm (60 in.)                            | G<br>MIGHT REQUIRE ADDITIONAL DETECTORS                                                               |                                                                                                                           |

NOTES:

- All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
- All manual pull station shall be mounted no less than 42" to the bottom of the box, and no more than 48" to the top of the box from the finished floor.
- All strobe and horn/strobes shall be located so the bottom of the device is not less than 80 inches above the finished floor and not greater than 96 inches above the finished floor.
- All notification devices shall be located no less than 6 inches below finished ceilings.
- The candela rating of the strobes or horn/strobes shall be shown on the drawings.
- The location of the notification devices shall be at a uniform height for all devices.
- All cables, conduits, or wire mold shall be securely fastened to the structure.
- Smoke detectors shall be located in the ceiling no less than 4 inches from a sidewall to the nearest edge of the detector.
- Drawings indicate general fire alarm device locations and Field Verify device locations with minimal deviations and document any changes.
- FACP & Power Supplies shall be on a dedicated 120V, 20A circuit breaker marked in red with lock-on provision.
- Fire Alarm wire paths are reserved for fire alarm cabling only. Including all UL listed fire barrier penetrations.
- If a watrgong has not been provided by the sprinkler contractor, then an Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF in line with the FDC. See NFPA 1. Coordinate locations with the local fire department or AHJ.
- All ceilings are 10' or below unless otherwise noted.
- Default batteries are 18 - amp hour unless otherwise noted.
- LED Remote Test Switches are to be mounted directly below the duct detector. Per NFPA 70, NEC, the manual controls shall be located more than 6'-6" above the finished.
- In the bottom of the elevator hoist-way which is sprinklered the detectors shall be with 24" of the sprinkler head.
- Fire Alarm initiating devices inside elevator hoist ways shall be required to be accessible for service, testing and maintenance from outside the elevator hoist way.



| REVISIONS: | DATE: |
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SITE: 2 NE Tudor Rd. Lee's Summit, Missouri 64086

TITLE: NFPA 72 Device Reference

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| SCALE AT:   | DATE:             | DESIGNED BY: |
| PROJECT NO: | DRAWING NO: FA-05 | REVISION:    |

# NFPA 72 Device Reference