

CITY OF LEE'S SUMMIT FIRE STATION #5

801 Missouri Highway 150
Lee's Summit, Missouri 64082

CODE INFORMATION

I. Applicable Codes

- A. ~~2018~~ IBC 
C. ~~2014~~ ICC 500
D. ICC/ANSI A117.1-2009
E. 28 CODE OF FEDERAL REGULATIONS (CFR) PART 35.15 AS DETAILED IN THE DEPARTMENT OF JUSTICE TITLE II
ADA REGULATIONS AND THE 2010 ADA STANDARDS OF ACCESSIBLE DESIGN

II. Building Information:

- A. II-B Construction (Per IBC 601)
B. Fully Sprinklered (Per IBC 901.2)
C. Full Perimeter Frontage (Per IBC 506.3)
D. Use Group: Mixed Non-separated S-1, S-2, B, R-2 (Per IBC 508.3)

Occupant Load (IBC Table 1004.1.2)	
Business	19
Residential	8
Storage	25
Total	52

Scope:

This Project is new construction of a Fire Station in Lee's Summit. The building is fully sprinklered. Envision will install a full fire alarm system as well as monitoring of the sprinkler system.

Wiring Legend

SLC	18/2 UNS SOL FPLP Red Jkt
NAC	14/2 UNS SOL FPLP Red Jkt
P-Link	18/4 UNS SOL FPLP Red Jkt

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FA - 4	Batter & Circuit Calculations, Operational Matrix, and Riser Diagram
FA - 5	NFPA 72 Reference

Symbol Legend

SYMBOL	DESCRIPTION
	INTELLIGENT PWR EXPANDER, 6-AMP, 4-NAC
	FACP ADDRESSABLE 198 OR 318 POINTS
	LOW-PROFILE INTELLIGENT 135F FIXED THERMAL SENSOR WHITE
	LOW-PROFILE PHOTOELECTRIC SENSOR WHITE
	ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR, WHITE
	REMOTE LCD ANNUNCIATOR, RED
	PULL STATION, DOUBLE ACTION, ADDRESSABLE
	DUAL MONITOR MODULE
	RELAY MODULE, ADDRESSABLE
	L-SERIES STROBE, RED, WALL
	L-SERIES 2-WIRE, HORN STROBE, RED, WALL
	L-SERIES STROBE, RED, WALL
	L-SERIES 2-WIRE, HORN STROBE, RED, WALL
	60CBLF FREQUENCY SOUNDER STROBE WALL RED
	HORN/STROBE, 2 WIRE, STANDARD CD, RED, OUTDOOR

NOTES:

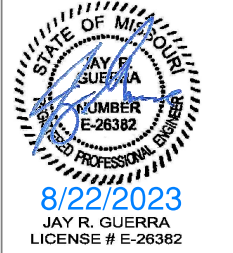
- All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
- All manual pull stations shall be mounted four (4) feet above the finished floor (centerline of device, +or-6inches), unless otherwise noted.
- All strobe and horn/strobes shall be located so the bottom of the 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.
- Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF FDC.
- All ceilings are 10' or below unless otherwise noted.
- Default batteries are 18 - amp hour unless otherwise noted.
- Remote Test Stations to be mounted on the wall 5' AFF.



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



PROFESSIONAL ENGINEER STAMP:



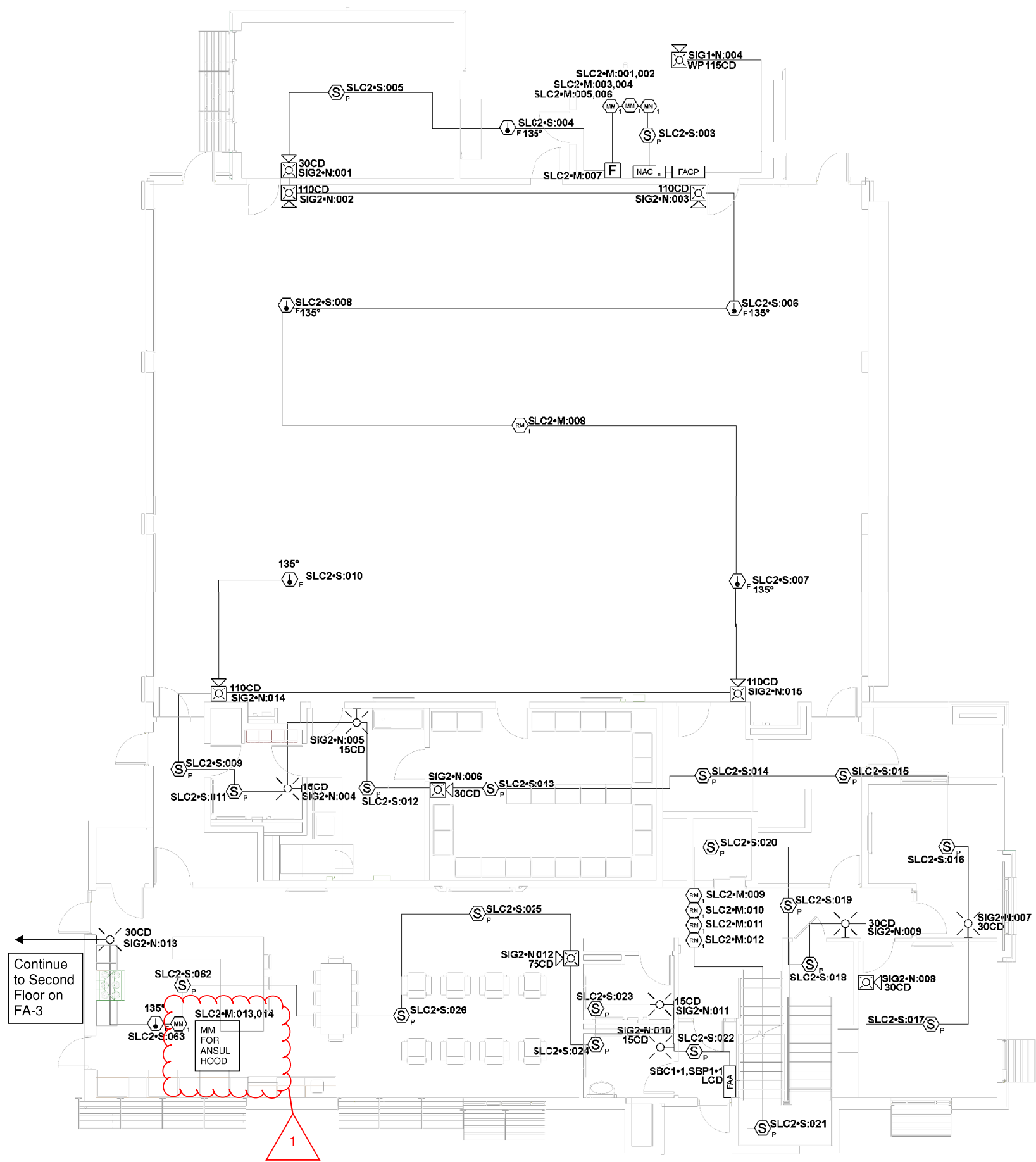
REVISIONS:	DATE:
 City Revisions #1	8/3/2023
 City Revisions #2	8/21/2023



SITE: 801 Missouri Highway 150
Lee's Summit, Missouri 64082

TITLE: Cover Page

SCALE AT:	DATE: 8/2/2023	DESIGNED BY:
PROJECT NO:	DRAWING NO:FA-1	REVISION:



NOTES:

1. All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
2. All manual pull stations shall be mounted four (4) feet above the finished floor (centerline of device, +or-6inches), unless otherwise noted.
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.Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF FDC.
13. All ceilings are 10' or below unless otherwise noted.
14. Default batteries are 18 - amp hour unless otherwise noted.
15. Remote Test Stations to be mounted on the wall 5' AFF.



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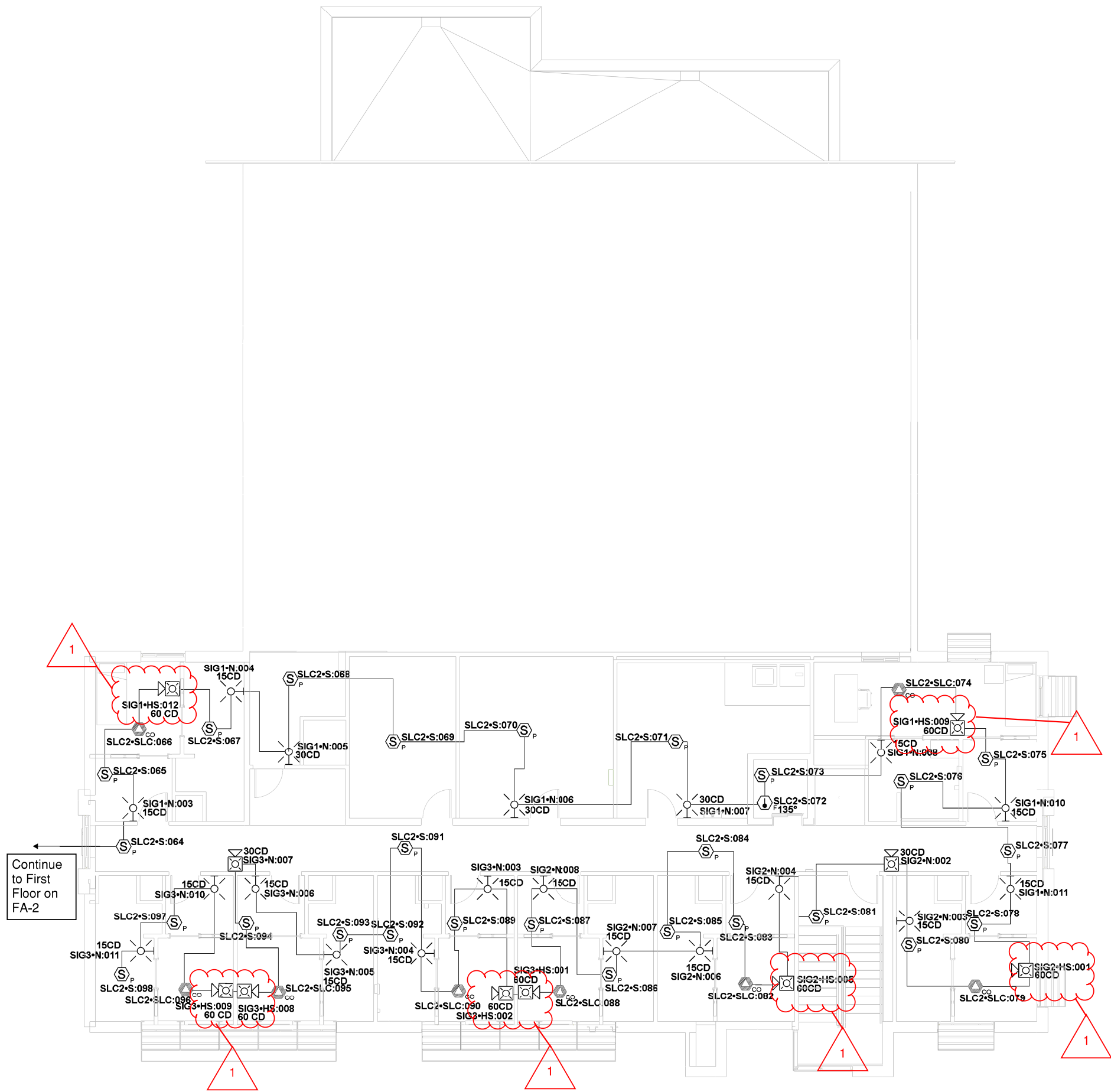
PROFESSIONAL ENGINEER STAMP:



REVISIONS:		DATE:
1	City Revisions #1	8/3/2023
2	City Revisions #2	8/21/2023



SITE: 801 Missouri Highway 150 Lee's Summit, Missouri 64082		
TITLE: First Floor Plan		
SCALE AT: 1/8"=1'	DATE: 8/2/2023	DESIGNED BY:
PROJECT NO:	DRAWING NO:FA-2	REVISION:



NOTES:

1. All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
2. All manual pull stations shall be mounted four (4) feet above the finished floor (centerline of device, +or-6inches), unless otherwise noted.
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. Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF FDC.
13. All ceilings are 10' or below unless otherwise noted.
14. Default batteries are 18 - amp hour unless otherwise noted.
15. Remote Test Stations to be mounted on the wall 5' AFF.



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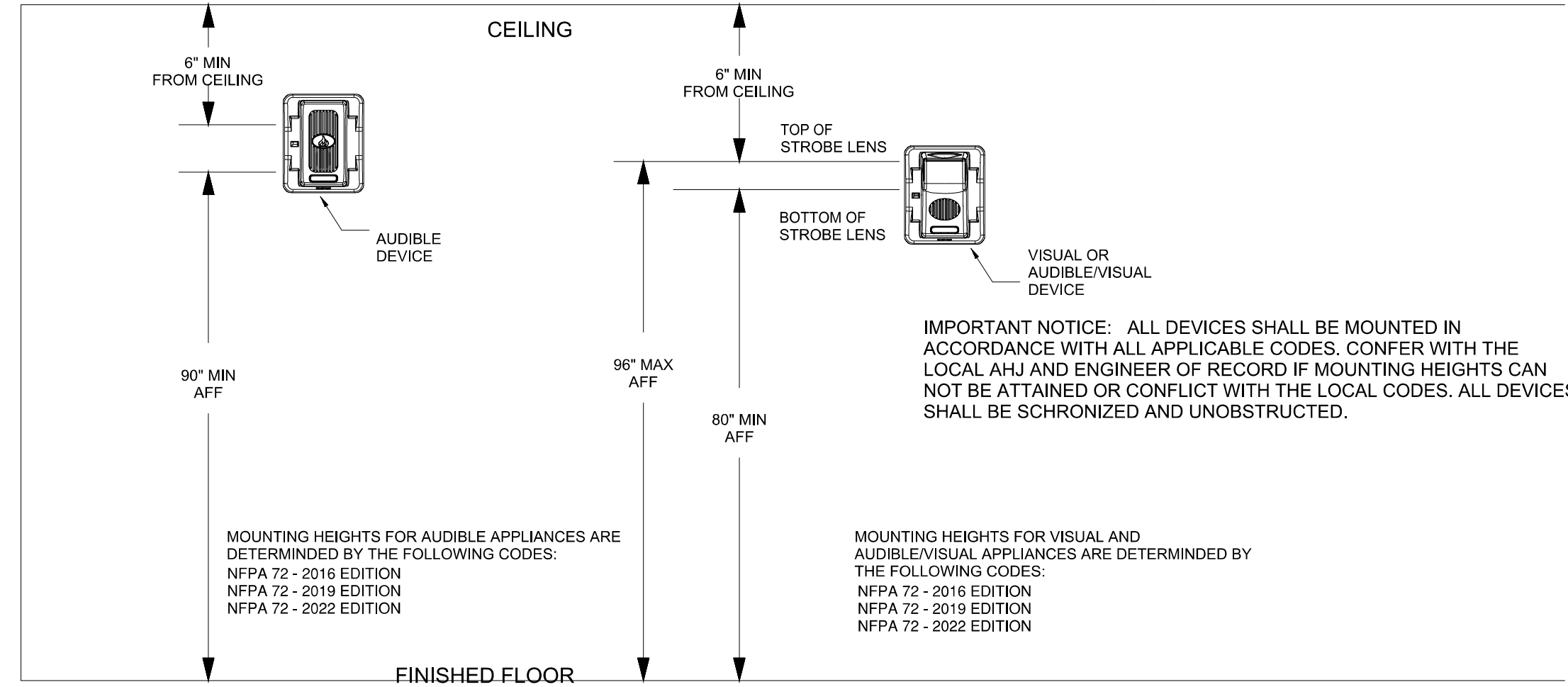
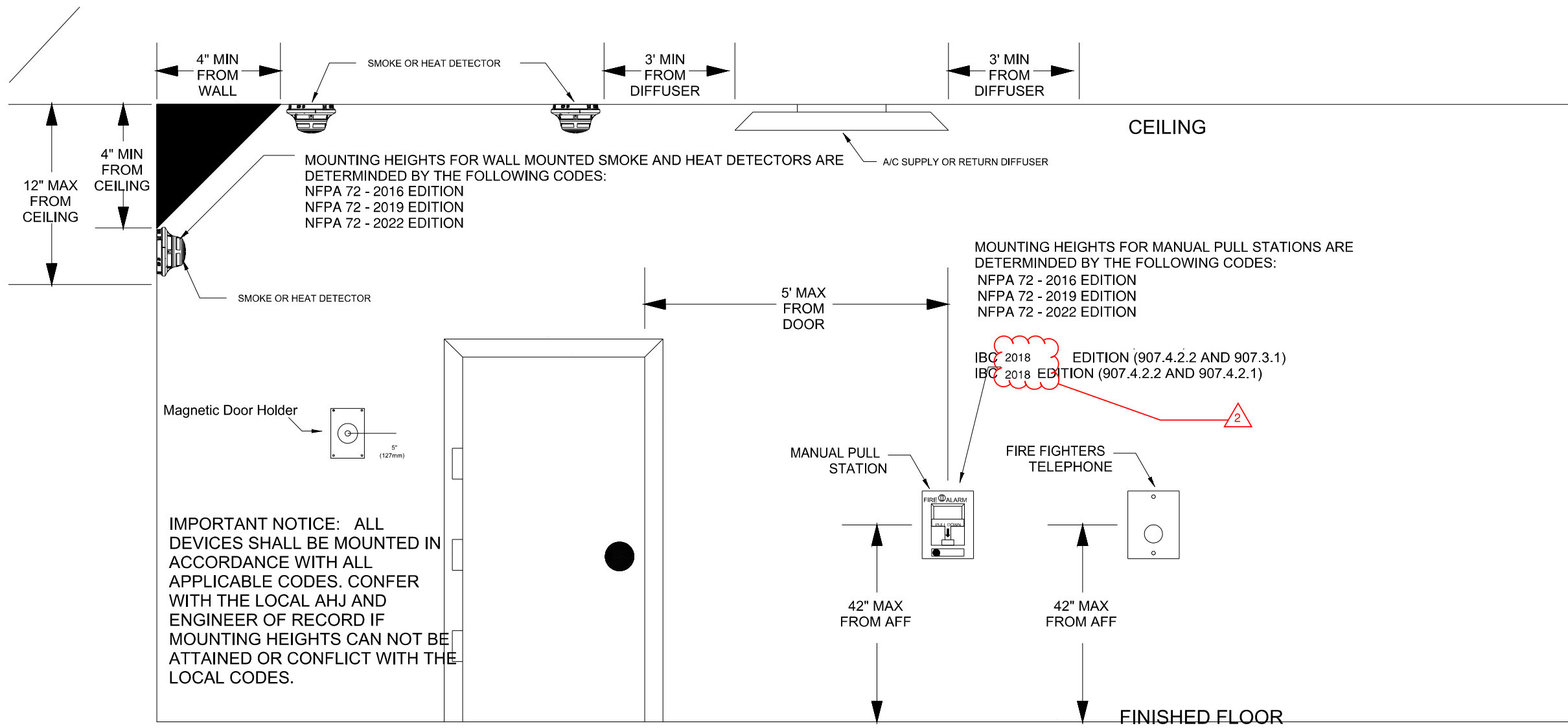


REVISIONS:	DATE:
1 City Revisions #1	8/3/2023
2 City Revisions #2	8/21/2023

ENVISION
TECHNOLOGY GROUP
913-491-1700 6985 W 153rd St
913-491-1701 Overland Park, KS 66223

SITE: 801 Missouri Highway 150 Lee's Summit, Missouri 64082		
TITLE: Second Floor Plan		
SCALE AT: 1/8"=1'	DATE: 8/2/2023	DESIGNED BY:
PROJECT NO:	DRAWING NO: FA-3	REVISION:

Battery Calculations for Panel: FACP										Battery Calculations for Panel: NAC									
Part No:6806 - FACP ADDRESSABLE 160 OR 216 POINTS										Part No:6806 - INTELLIGENT FIRE EXPANDER, 6AMP, 4NAC									
Job Number: 1	Job Name: Drawing1									Job Number: 1	Job Name: Drawing1								
Part No.	Qty.	Panel	Description	Standby	Total Standby	Alarm	Total Alarm	Part No.	Qty.	Panel	Description	Standby	Total Standby	Alarm	Total Alarm				
6806_MB	1	MAIN BOARD 6806		190,000 mA	190,000 mA	250,000 mA	250,000 mA	6806_MB	1	INTELLIGENT FIRE POWER MODULE MAIN BOARD		40,000 mA	40,000 mA	160,000 mA	160,000 mA				
Total Panel Qty				190,000 mA	190,000 mA	250,000 mA	250,000 mA	Total Panel Qty				40,000 mA	40,000 mA	160,000 mA	160,000 mA				
Peripheral Devices								Peripheral Devices											
P2R1	1	HORN/STROBE 1 WIRE, STANDARD CD, RED, OUTDOOR (PhotoFlash) 115CD 6806		8,000 mA	8,000 mA	210,000 mA	210,000 mA	SRL	1	LAERIES STROBE, RED, WALL, Notification 15CD		8,000 mA	8,000 mA	43,000 mA	43,000 mA				
P2R1	2	LAERIES 24WRE, HORN STROBE, RED, WALL, Notification 30CD 6806		8,000 mA	8,000 mA	74,000 mA	74,000 mA	SRL	8	LAERIES STROBE, RED, WALL, Notification 30CD		8,000 mA	8,000 mA	63,000 mA	63,000 mA				
P2R1	4	LOW FREQUENCY SOUNDER STROBE WALL, RED, Notification 75CD 6806		2,000 mA	2,000 mA	106,000 mA	106,000 mA	P2R1	4	LOW FREQUENCY SOUNDER STROBE WALL, RED, Notification 75CD 6806		2,000 mA	2,000 mA	106,000 mA	106,000 mA				
SRL	11	LAERIES STROBE, RED, WALL, Notification 15CD		8,000 mA	8,000 mA	43,000 mA	43,000 mA	P2R1	1	LAERIES 24WRE, HORN STROBE, RED, WALL, Notification 30CD 6806		8,000 mA	8,000 mA	72,000 mA	72,000 mA				
6806A	1	REMOTE LCD ANNUNCIATOR, RED (Power)		20,000 mA	20,000 mA	20,000 mA	20,000 mA	P2R1	4	LAERIES 24WRE, HORN STROBE, RED, WALL, Notification 11CD 6806		8,000 mA	8,000 mA	121,000 mA	121,000 mA				
6806	1	INTELLIGENT FIRE EXPANDER, 6AMP, 4NAC, 5446 MB (Power)		10,000 mA	10,000 mA	10,000 mA	10,000 mA	P2R1	2	LAERIES 24WRE, HORN STROBE, RED, WALL, Notification 30CD 6806		8,000 mA	8,000 mA	148,000 mA	148,000 mA				
6806A	1	REMOTE LCD ANNUNCIATOR, RED (Signal)		8,000 mA	8,000 mA	8,000 mA	8,000 mA	P2R1	1	LAERIES 24WRE, HORN STROBE, RED, WALL, Notification 11CD 6806		8,000 mA	8,000 mA	121,000 mA	121,000 mA				
6806	1	INTELLIGENT FIRE EXPANDER, 6AMP, 4NAC, 5446 MB (Signal)		10,000 mA	10,000 mA	10,000 mA	10,000 mA	Total Peripheral Qty				8,000 mA	8,000 mA	121,000 mA	121,000 mA				
SKP100T0A	1	PULL STATION, DOUBLE ACTION, ADDRESSABLE (Signaling In)		0,350 mA	0,350 mA	0,350 mA	0,350 mA	Total Standby Amps				40,000 mA	40,000 mA	207,000 mA	207,000 mA				
SKP100T0A	4	LOW PROFILE PHOTOELECTRIC SENSOR WHITE (Signaling In)		0,200 mA	0,200 mA	0,200 mA	0,200 mA	Total Alarm Amps				160,000 mA	160,000 mA	207,000 mA	207,000 mA				
SKP100T0A	2	DUAL MONITOR MODULE (Signaling In)		0,700 mA	0,700 mA	0,700 mA	0,700 mA	Total Standby Amps				40,000 mA	40,000 mA	207,000 mA	207,000 mA				
SKP100T0A	1	LOW PROFILE INTELLIGENT 13F FIBER THERMAL SENSOR WHITE (Signaling In)		0,200 mA	0,200 mA	0,200 mA	0,200 mA	Total Alarm Amps				160,000 mA	160,000 mA	207,000 mA	207,000 mA				
SKP100T0A	1	RELAY MODULE, ADDRESSABLE (Signaling In)		0,200 mA	0,200 mA	0,200 mA	0,200 mA	Total Standby Amps				40,000 mA	40,000 mA	207,000 mA	207,000 mA				
SKP100T0A	8	ADVANCED MULTICRITERA FIRESCO DETECTOR, WHITE (Signaling In)		0,200 mA	0,200 mA	0,200 mA	0,200 mA	Total Alarm Amps				160,000 mA	160,000 mA	207,000 mA	207,000 mA				
Total Peripheral Qty				56,550 mA	56,550 mA	148,000 mA	148,000 mA	Total Alarm Amps				160,000 mA	160,000 mA	207,000 mA	207,000 mA				
Total Standby Amps				246,550 mA	246,550 mA	299,000 mA	299,000 mA	Total Alarm Amps				160,000 mA	160,000 mA	207,000 mA	207,000 mA				
Circuit Calculations								Circuit Calculations											
Panel: FACP Card: 00 Circuit:SIG1								Panel: NAC Card: 01 Circuit:SIG1											
Circuit Name: SIG1								Circuit Name: SIG1											
Circuit Type: Notification								Circuit Type: Notification											
Terminal Voltage: 20.4 VDC								Terminal Voltage: 20.4 VDC											
Cable: 142 SOL JKT FPLR 18 RL RED #14								Cable: 142 SOL JKT FPLR 18 RL RED #14											
Calculations based on Running Total Length								Calculations based on Running Total Length											
Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%								Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%											
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop				
N301	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	427-0'	43,000 mA	19,659 V	0.5115 V	0.004	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	1847-0'	0,200 mA	19,774 V	0.6244 V	0.004					
N302	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	74'	43,000 mA	19,761 V	0.6174 V	0.005	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	1421'	0,200 mA	19,732 V	0.6089 V	0.005					
N303	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'	43,000 mA	19,731 V	0.6174 V	0.007	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	150'	0,200 mA	19,747 V	0.6141 V	0.007					
N304	P2R1	LAERIES STROBE, RED, WALL, 15CD	37-0'	43,000 mA	19,701 V	0.6174 V	0.008	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	154'	0,200 mA	19,717 V	0.6141 V	0.008					
N305	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,567 V	0.8441 V	0.009	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,687 V	0.8441 V	0.009					
N306	SRL	LAERIES STROBE, RED, WALL, 15CD	415'-0'	43,000 mA	19,547 V	0.8441 V	0.010	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,657 V	0.8441 V	0.010					
N307	SRL	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,517 V	0.8441 V	0.011	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	37'-0'	0,200 mA	19,527 V	0.8441 V	0.011					
N308	SRL	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,487 V	0.8441 V	0.012	SRL	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,497 V	0.8441 V	0.012					
Total Current: 602,000 mA				Total Voltage Drop: 5.205 V				Total Current: 602,000 mA				Total Voltage Drop: 5.205 V							
Circuit Calculations								Circuit Calculations											
Panel: FACP Card: 00 Circuit:SIG3								Panel: FACP Card: 00 Circuit:SLC2											
Circuit Name: SIG3								Circuit Name: SLC2											
Circuit Type: Notification								Circuit Type: Signaling Inhibit - SLC											
Terminal Voltage: 20.4 VDC								Terminal Voltage: 20.4 VDC											
Cable: 142 SOL JKT FPLR 18 RL RED #14								Cable: 142 SOL JKT FPLR 18 RL RED #14											
Calculations based on Running Total Length								Calculations based on Running Total Length											
Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%								Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%											
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop				
N301	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	517-0'	43,000 mA	19,713 V	0.6173 V	0.002	SKP100T0A	ADVANCED MULTICRITERA FIRESCO DETECTOR, WHITE	21-0'	0,200 mA	19,737 V	0.6079 V	0.002					
N302	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	62-0'	43,000 mA	19,713 V	0.6173 V	0.004	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	1421'	0,200 mA	19,732 V	0.6089 V	0.004					
N303	P2R1	LAERIES STROBE, RED, WALL, 15CD	27-0'	43,000 mA	19,713 V	0.6173 V	0.005	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	150'	0,200 mA	19,747 V	0.6141 V	0.005					
N304	P2R1	LAERIES STROBE, RED, WALL, 15CD	27-0'	43,000 mA	19,713 V	0.6173 V	0.006	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	154'	0,200 mA	19,717 V	0.6141 V	0.006					
N305	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,529 V	0.8173 V	0.007	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,687 V	0.8441 V	0.007					
N306	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	74'-0'	43,000 mA	19,632 V	0.8200 V	0.009	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,657 V	0.8441 V	0.009					
N307	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,632 V	0.8200 V	0.010	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,627 V	0.8441 V	0.010					
N308	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,449 V	1.0173 V	0.011	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,597 V	0.8441 V	0.011					
N309	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,449 V	1.0173 V	0.012	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,567 V	0.8441 V	0.012					
N310	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,419 V	1.0173 V	0.013	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,537 V	0.8441 V	0.013					
N311	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,389 V	1.0173 V	0.014	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,507 V	0.8441 V	0.014					
Total Current: 602,000 mA				Total Voltage Drop: 5.214 V				Total Current: 602,000 mA				Total Voltage Drop: 5.214 V							
Circuit Calculations								Circuit Calculations											
Panel: FACP Card: 00 Circuit:BP1								Panel: FACP Card: 00 Circuit:SLC1											
Circuit Name: BP1								Circuit Name: SLC1											
Circuit Type: Notification								Circuit Type: Signaling Inhibit - SLC											
Terminal Voltage: 20.4 VDC								Terminal Voltage: 20.4 VDC											
Cable: 142 SOL JKT FPLR 18 RL RED #14								Cable: 142 SOL JKT FPLR 18 RL RED #14											
Calculations based on Running Total Length								Calculations based on Running Total Length											
Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%								Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%											
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop				
N301	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	517-0'	43,000 mA	19,713 V	0.6173 V	0.002	SKP100T0A	ADVANCED MULTICRITERA FIRESCO DETECTOR, WHITE	21-0'	0,200 mA	19,737 V	0.6079 V	0.002					
N302	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	62-0'	43,000 mA	19,713 V	0.6173 V	0.004	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	1421'	0,200 mA	19,732 V	0.6089 V	0.004					
N303	P2R1	LAERIES STROBE, RED, WALL, 15CD	27-0'	43,000 mA	19,713 V	0.6173 V	0.005	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	150'	0,200 mA	19,747 V	0.6141 V	0.005					
N304	P2R1	LAERIES STROBE, RED, WALL, 15CD	27-0'	43,000 mA	19,713 V	0.6173 V	0.006	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	154'	0,200 mA	19,717 V	0.6141 V	0.006					
N305	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,529 V	0.8173 V	0.007	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,687 V	0.8441 V	0.007					
N306	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	74'-0'	43,000 mA	19,632 V	0.8200 V	0.009	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,657 V	0.8441 V	0.009					
N307	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,632 V	0.8200 V	0.010	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,627 V	0.8441 V	0.010					
N308	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,449 V	1.0173 V	0.011	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,597 V	0.8441 V	0.011					
N309	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,449 V	1.0173 V	0.012	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,567 V	0.8441 V	0.012					
N310	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,419 V	1.0173 V	0.013	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,537 V	0.8441 V	0.013					
N311	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,389 V	1.0173 V	0.014	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,507 V	0.8441 V	0.014					
Total Current: 602,000 mA				Total Voltage Drop: 5.214 V				Total Current: 602,000 mA				Total Voltage Drop: 5.214 V							
Circuit Calculations								Circuit Calculations											
Panel: FACP Card: 00 Circuit:BP1								Panel: FACP Card: 00 Circuit:SLC1											
Circuit Name: BP1								Circuit Name: SLC1											
Circuit Type: Notification								Circuit Type: Signaling Inhibit - SLC											
Terminal Voltage: 20.4 VDC								Terminal Voltage: 20.4 VDC											
Cable: 142 SOL JKT FPLR 18 RL RED #14								Cable: 142 SOL JKT FPLR 18 RL RED #14											
Calculations based on Running Total Length								Calculations based on Running Total Length											
Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%								Design Criteria: Ambient temperature: 107 °F Max. operating voltage drop: 15%											
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop				
N301	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	517-0'	43,000 mA	19,713 V	0.6173 V	0.002	SKP100T0A	ADVANCED MULTICRITERA FIRESCO DETECTOR, WHITE	21-0'	0,200 mA	19,737 V	0.6079 V	0.002					
N302	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	62-0'	43,000 mA	19,713 V	0.6173 V	0.004	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	1421'	0,200 mA	19,732 V	0.6089 V	0.004					
N303	P2R1	LAERIES STROBE, RED, WALL, 15CD	27-0'	43,000 mA	19,713 V	0.6173 V	0.005	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	150'	0,200 mA	19,747 V	0.6141 V	0.005					
N304	P2R1	LAERIES STROBE, RED, WALL, 15CD	27-0'	43,000 mA	19,713 V	0.6173 V	0.006	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	154'	0,200 mA	19,717 V	0.6141 V	0.006					
N305	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,529 V	0.8173 V	0.007	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,687 V	0.8441 V	0.007					
N306	P2R1	LAERIES 24WRE, HORN STROBE, RED, WALL, 30CD	74'-0'	43,000 mA	19,632 V	0.8200 V	0.009	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,657 V	0.8441 V	0.009					
N307	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,632 V	0.8200 V	0.010	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,627 V	0.8441 V	0.010					
N308	P2R1	LOW FREQUENCY SOUNDER STROBE WALL, RED, TCD	1827-0'	43,000 mA	19,449 V	1.0173 V	0.011	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,597 V	0.8441 V	0.011					
N309	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,449 V	1.0173 V	0.012	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,567 V	0.8441 V	0.012					
N310	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,419 V	1.0173 V	0.013	SKP100T0A	LOW PROFILE PHOTOELECTRIC SENSOR WHITE	174'	0,200 mA	19,537 V	0.8441 V	0.013					
N311	P2R1	LAERIES STROBE, RED, WALL, 15CD	174'-0'	43,000 mA	19,389 V														



DETECTOR LOCATION REQUIREMENTS FOR WALL SECTIONS
NFPA 72

DEPTH OF WALL SECTION ABOVE DOOR	DOOR FRAME MOUNTED	CEILING MOUNTED		
		A	B	C
0 - 610 mm (0 - 24 in.) ON BOTH SIDES OF DOORWAY	SMOKE DETECTOR LISTED FOR FRAME MOUNTING OR AS PART OF CLOSER ASSEMBLY d=610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE	ONE DETECTOR MOUNTED ON EITHER SIDE d1 ≤ 610mm (24 in.) d2 > 610mm (24 in.)	SMOKE DETECTOR CEILING MOUNTED 100-300 mm max. 1.52 m (5 ft) d min. but not less than 305 mm (12 in.)	ONE DETECTOR MOUNTED ON HIGHER SIDE 100-300 mm d1 ≤ 610mm (24 in.) d2 > 610mm (24 in.) min. = d 2
OVER 610 mm (24 in.) ON ONE SIDE ONLY	DETECTOR OR DETECTOR CLOSER MOUNTED ON HIGHER SIDE d1 ≤ 610mm (24 in.) d2 > 610mm (24 in.)	DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE d > 610mm (24 in.)	ONE DETECTOR MOUNTED ON HIGHER SIDE 1.52 m (5 ft) max. min. = d	ONE DETECTOR MOUNTED ON HIGHER SIDE 1.52 m (5 ft) max. min. = d
OVER 610 mm (24 in.) ON BOTH SIDES	DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE d > 610mm (24 in.)	DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE d > 610mm (24 in.)	ONE DETECTOR MOUNTED ON HIGHER SIDE 1.52 m (5 ft) max. min. = d	ONE DETECTOR MOUNTED ON HIGHER SIDE 1.52 m (5 ft) max. min. = d
OVER 1524 mm (60 in.)				

- NOTES:
- All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
 - All manual pull stations shall be mounted four (4) feet above the finished floor (centerline of device, +or-6inches), unless otherwise noted.
 - 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.
 - Outdoor Weatherproof Horn/Strobe is to be mounted 10' 00" AFF FDC.
 - All ceilings are 10' or below unless otherwise noted.
 - Default batteries are 18 - amp hour unless otherwise noted.
 - Remote Test Stations to be mounted on the wall 5' AFF.

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

PROFESSIONAL ENGINEER STAMP:
JAY R. GUERRA
E-26382
8/22/2023
JAY R. GUERRA
LICENSE # E-26382

REVISIONS:	DATE:
1 City Revisions #1	8/3/2023
2 City Revisions #2	8/21/2023

ENVISION
TECHNOLOGY GROUP
913-491-1700 6985 W 153rd St
913-491-1701 Overland Park, KS 66223

SITE: 801 Missouri Highway 150
Lee's Summit, Missouri 64082

TITLE: NFPA 72 Reference

SCALE AT:	DATE: 8/2/2023	DESIGNED BY:
PROJECT NO:	DRAWING NO:FA-5	REVISION:

NFPA 72 Device Reference