

CITY OF LEE'S SUMMIT FIRE STATION #5

801 Missouri Highway 150
Lee's Summit, Missouri 64082

CODE INFORMATION

I. Applicable Codes

- A. 2015 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:

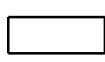
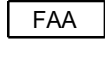
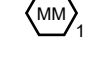
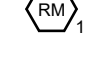
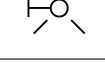
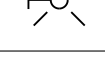
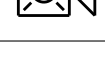
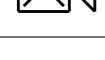
- A. II-B Construction {Per IBC 601}
- B. Fully Sprinklered {Per IBC 901.2}
- C. Full Perimeter Frontage {Per IBC 506.3}
- D. Use Group: Mixed Non-separated S-1, S-2, B, R-2 {Per IBC 508.3}

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.
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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

Sheet Index	
FA - 1	Cover Page
FA - 2	First Floor Plan
FA - 3	Second Floor Plan
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
	LOW FREQUENCY SOUNDER STROBE WALL RED
	HORN/STROBE, 2 WIRE, STANDARD CD, RED, OUTDOOR

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.

PROFESSIONAL ENGINEER STAMP:

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

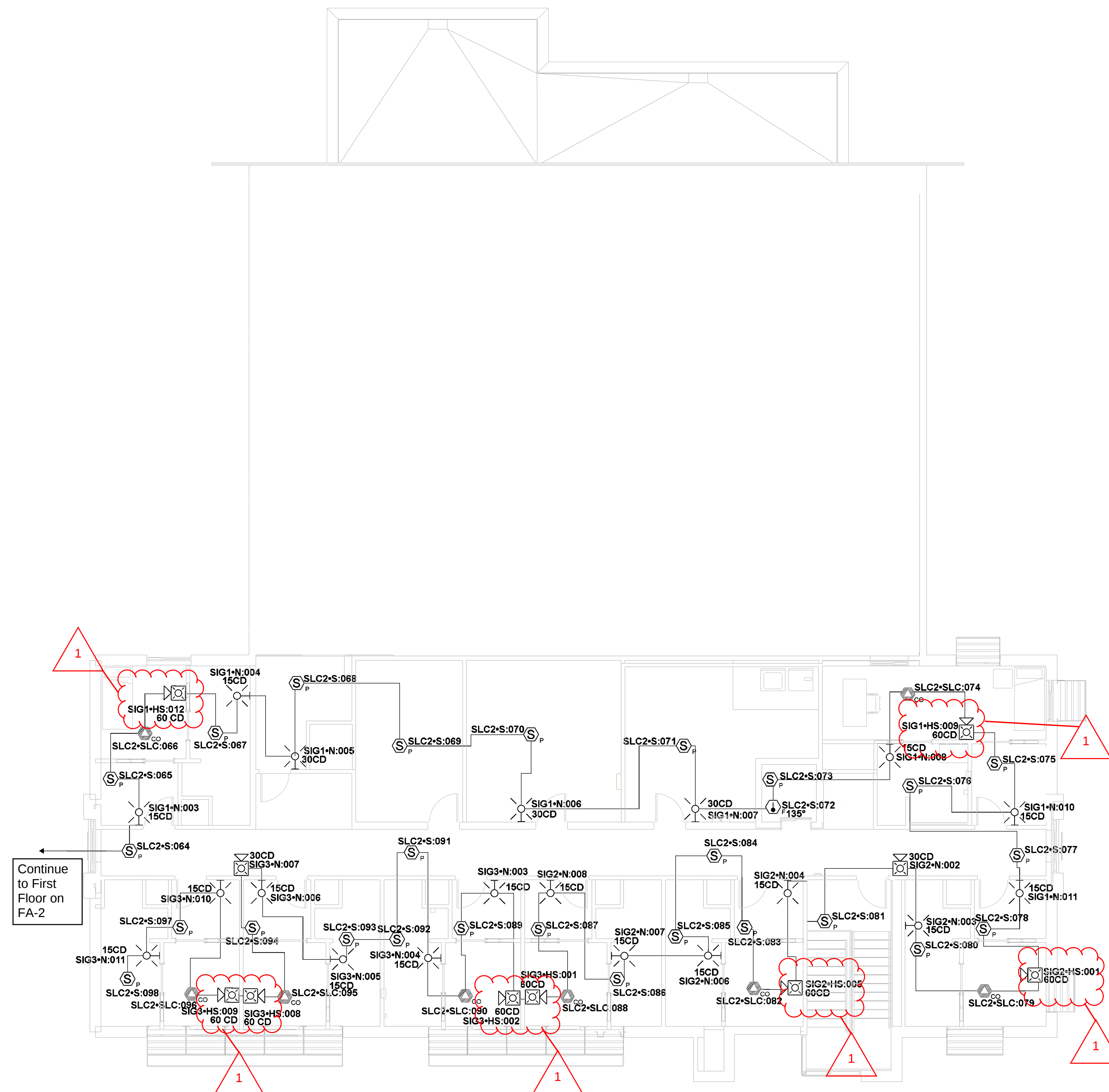


ENVISION
TECHNOLOGY GROUP

913-491-1700
913-491-1701

6985 W 153rd St
Overland Park, KS 66223

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:

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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 to be mounted 10' 00" AFF FDC.
13. All ceilings are 0' 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.

PROFESSIONAL ENGINEER STAMP

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

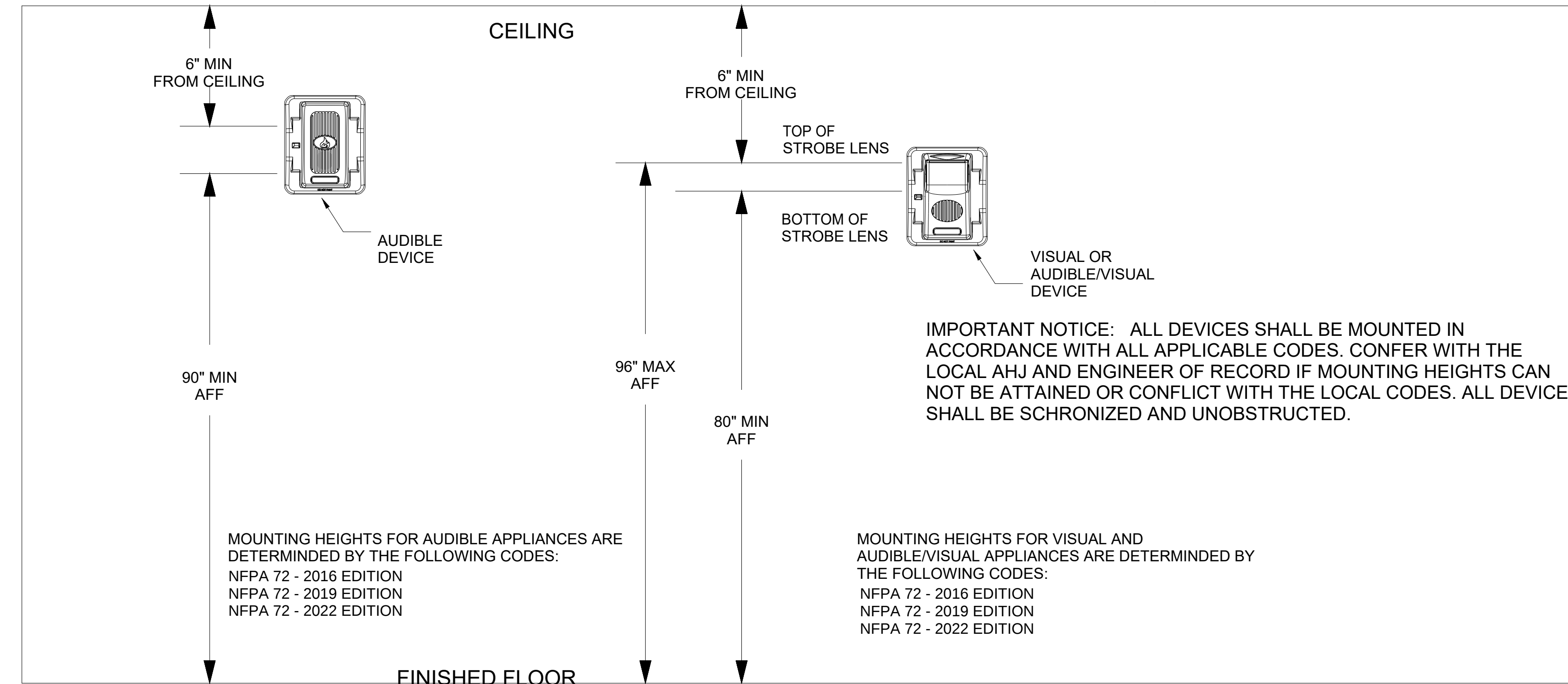
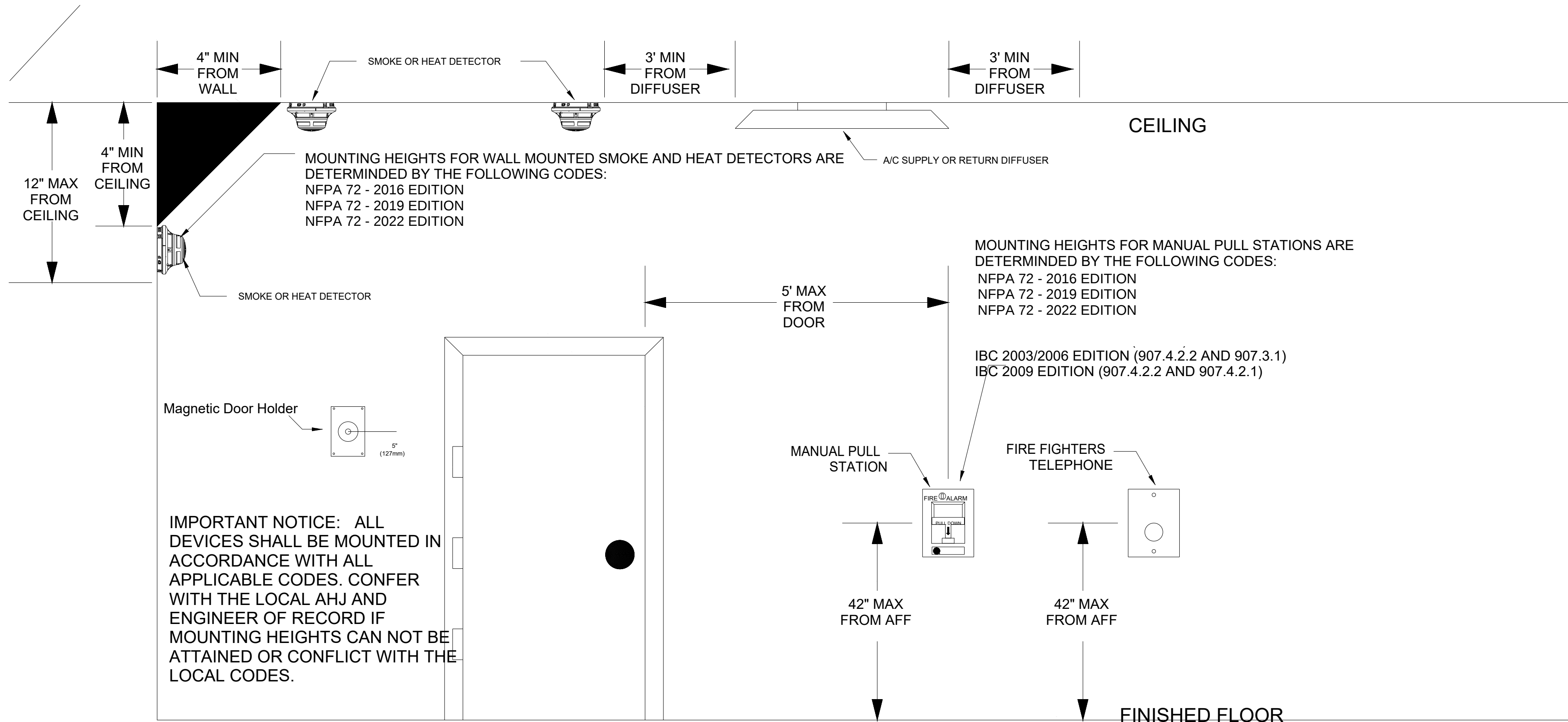
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913-491-1700
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6985 W 153rd St
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SITE: 801 Missouri Highway 150
Lee's Summit, Missouri 64082

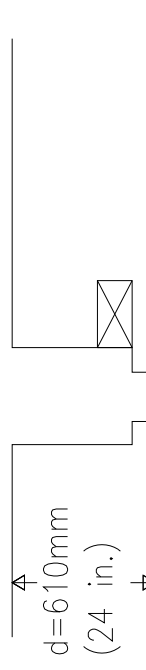
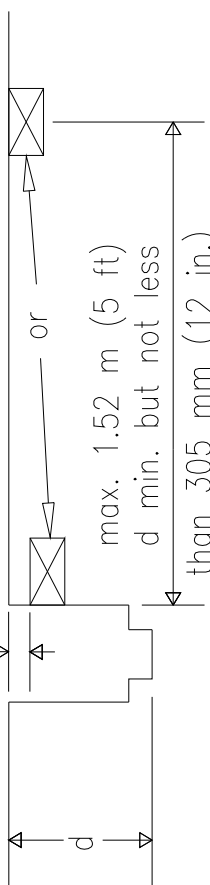
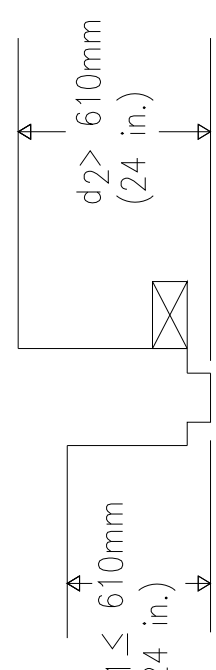
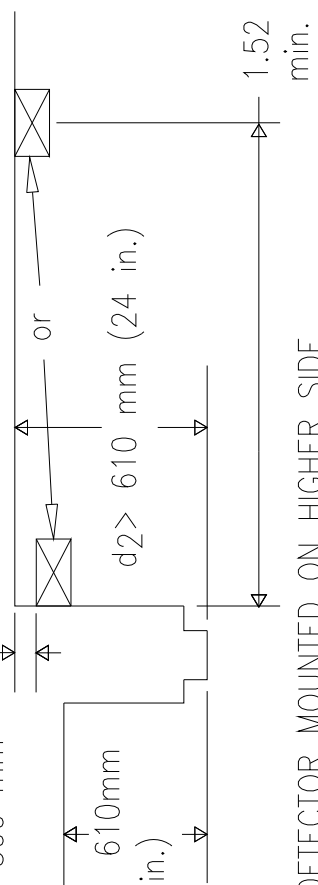
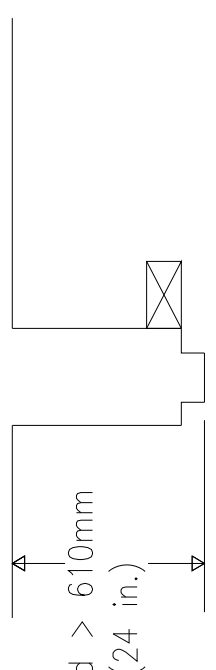
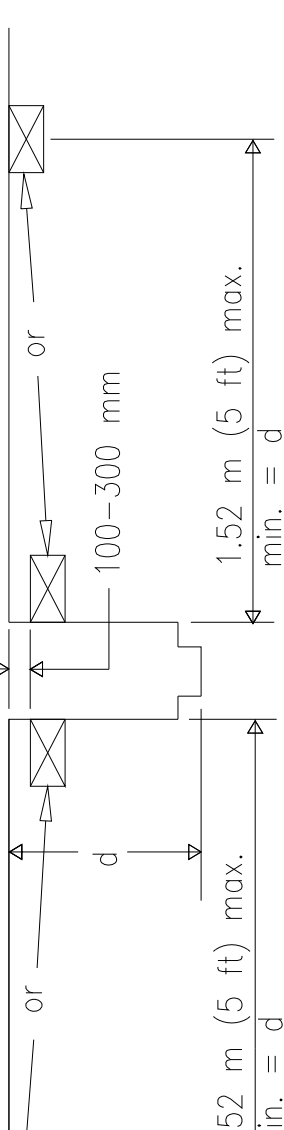
TITLE: Second Floor Plan

SCALE AT: 1/8"=1'	DATE: 8/2/2023	DESIGNED BY:
PROJECT NO:	DRAWING NO: FA-3	REVISION:

Battery Calculations for Panel: FACP									
Part No:6808 - FACP ADDRESSABLE 190 OR 318 POINTS									
Job number: 1 Job name: Drawing1									
Part No.	Qty.	Description	Standby	Total Standby	Alarm	Total Alarm	Standby	Total Standby	Alarm
Panel Equipment									
6808_MB	1	MAIN BOARD 6808	190,000 mA	190,000 mA	250,000 mA	250,000 mA			
Total Panel Standby			190,000 mA	190,000 mA	250,000 mA	250,000 mA			
Peripheral Devices									
P20N	1	HORN/STROBE, 2 WIRE, STANDARD CD, RED, OUTDOOR (Notification) 115CD 81B	8,000 mA	8,000 mA	210,000 mA	210,000 mA			
P2RL	2	L-SERIES 2 WIRE, HORN STROBE, RED, WALL (Notification) 30CD 80B	8,000 mA	8,000 mA	14,000 mA	14,000 mA			
P2RL1F	4	LOW FREQUENCY SOUNDER STROBE WALL, RED (Notification) 75CD 80B	0,000 mA	0,000 mA	18,000 mA	18,000 mA			
SRL	11	L-SERIES STROBE, RED, WALL (Notification) 15CD	8,000 mA	8,000 mA	43,000 mA	43,000 mA			
S680R	1	REMOTE LCD ANNUNCIATOR, RED (Power)	20,000 mA	20,000 mA	20,000 mA	20,000 mA			
S480	1	INTELLIGENT PWR EXPANDER, 6-AMP, 4-ANAL, 548 MB (Power)	10,000 mA	10,000 mA	10,000 mA	10,000 mA			
S680R	1	REMOTE LCD ANNUNCIATOR, RED (Serial)	8,000 mA	8,000 mA	0,000 mA	0,000 mA			
S480	1	INTELLIGENT PWR EXPANDER, 6-AMP, 4-ANAL, 548 MB (Serial)	10,000 mA	10,000 mA	10,000 mA	10,000 mA			
SK-PULL-CA	1	PULL STATION, DOUBLE ACTION, ADDRESSABLE (Signaling Init)	3,000 mA	3,000 mA	3,000 mA	3,000 mA			
SK-PHOTO-W	46	LOW PROFILE PHOTOELECTRIC SENSOR WHITE (Signaling Init)	2,000 mA	9,200 mA	0,200 mA	9,200 mA			
SK-MONITOR 2	4	DUAL MONITOR MODULE (Signaling Init)	2,700 mA	3,000 mA	2,700 mA	2,700 mA			
SK-HEAT-W	7	LOW PROFILE INTELLIGENT 135F FIXED THERMAL SENSOR WHITE (Signaling Init)	0,300 mA	1,400 mA	0,200 mA	1,400 mA			
SK-RELAY	4	RELAY MODULE, ADDRESSABLE (Signaling Init)	0,300 mA	1,200 mA	0,300 mA	1,200 mA			
SK-FIRE-CO-W	8	ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR, WHITE (Signaling Init)	0,300 mA	1,400 mA	0,200 mA	1,400 mA			
Total Peripheral Standby			60,000 mA	160,000 mA	20,000 mA	20,000 mA			
Total Standby Amps			246,000 mA	350,000 mA	270,000 mA	270,000 mA			
Circuit Calculations									
Panel: FACP Card: 00 Circuit:SIG1									
Circuit Name: SIG1									
Circuit Type: Notification									
Terminal Voltage: 28.4 V DC									
Cable: 142 SOL JKT FPLR 1M RL RED #14									
Calculations based on Running Total Length									
Design Criteria: Ambient temperature: 167 °F Max. operating voltage drop: 15%									
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Standby Time: 24 Hrs	0.84 A
HS-001	P2RL1F	Panel	LOW FREQUENCY SOUNDER STROBE WALL, RED, 75CD	427.3	168,000 mA	18,868 V	(0.1742 V)	Alarm time: 5 Min	0.174 A
N-003	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	20.7	43,000 mA	16,117 V	(0.0021 V)	Battery requirement:	1.133 Ah
N-002	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	7.8	74,000 mA	18,762 V	(0.0174 V)	Requirement with compensation:	7.319 Ah
N-004	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	21.9	43,000 mA	16,708 V	(0.0026 V)		
HS-005	P2RL1F	Panel	LOW FREQUENCY SOUNDER STROBE WALL, RED, 75CD	10.4	168,000 mA	18,736 V	(0.0176 V)		
N-006	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	37.0	43,000 mA	18,704 V	(0.0227 V)		
N-007	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	2.9	43,000 mA	18,762 V	(0.0042 V)		
N-008	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	18.4	43,000 mA	18,694 V	(0.0048 V)		
Total Current: 210,000 mA			Total Voltage Drop: 0.0300 V			Total Voltage Drop: 0.0300 V			
Circuit Calculations									
Panel: FACP Card: 00 Circuit:SIG2									
Circuit Name: SIG2									
Circuit Type: Notification									
Terminal Voltage: 28.4 V DC									
Cable: 142 SOL JKT FPLR 1M RL RED #14									
Calculations based on Running Total Length									
Design Criteria: Ambient temperature: 167 °F Max. operating voltage drop: 15%									
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Standby Time: 24 Hrs	0.84 A
HS-001	P2RL1F	Panel	LOW FREQUENCY SOUNDER STROBE WALL, RED, 75CD	427.3	168,000 mA	18,868 V	(0.1742 V)	Alarm time: 5 Min	0.174 A
N-003	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	20.7	43,000 mA	16,117 V	(0.0021 V)	Battery requirement:	1.133 Ah
N-002	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	7.8	74,000 mA	18,762 V	(0.0174 V)	Requirement with compensation:	7.319 Ah
N-004	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	21.9	43,000 mA	16,708 V	(0.0026 V)		
HS-005	P2RL1F	Panel	LOW FREQUENCY SOUNDER STROBE WALL, RED, 75CD	10.4	168,000 mA	18,736 V	(0.0176 V)		
N-006	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	37.0	43,000 mA	18,704 V	(0.0227 V)		
N-007	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	2.9	43,000 mA	18,762 V	(0.0042 V)		
N-008	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	18.4	43,000 mA	18,694 V	(0.0048 V)		
Total Current: 210,000 mA			Total Voltage Drop: 0.0300 V			Total Voltage Drop: 0.0300 V			
Circuit Calculations									
Panel: FACP Card: 00 Circuit:SIG3									
Circuit Name: SIG3									
Circuit Type: Notification									
Terminal Voltage: 28.4 V DC									
Cable: 142 SOL JKT FPLR 1M RL RED #14									
Calculations based on Running Total Length									
Design Criteria: Ambient temperature: 167 °F Max. operating voltage drop: 15%									
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Standby Time: 24 Hrs	0.84 A
HS-001	P2RL1F	Panel	LOW FREQUENCY SOUNDER STROBE WALL, RED, 75CD	427.3	168,000 mA	18,868 V	(0.1742 V)	Alarm time: 5 Min	0.174 A
N-003	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	20.7	43,000 mA	16,117 V	(0.0021 V)	Battery requirement:	1.133 Ah
N-002	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	7.8	74,000 mA	18,762 V	(0.0174 V)	Requirement with compensation:	7.319 Ah
N-004	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	21.9	43,000 mA	16,708 V	(0.0026 V)		
HS-005	P2RL1F	Panel	LOW FREQUENCY SOUNDER STROBE WALL, RED, 75CD	10.4	168,000 mA	18,736 V	(0.0176 V)		
N-006	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	37.0	43,000 mA	18,704 V	(0.0227 V)		
N-007	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	2.9	43,000 mA	18,762 V	(0.0042 V)		
N-008	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	18.4	43,000 mA	18,694 V	(0.0048 V)		
Total Current: 210,000 mA			Total Voltage Drop: 0.0300 V			Total Voltage Drop: 0.0300 V			
Circuit Calculations									
Panel: FACP Card: 00 Circuit:SBP1									
Circuit Name: SBP1									
Circuit Type: Power/SBUS RS-485									
Terminal Voltage: 28.2 V DC									
Cable: 142 SOL JKT FPLR 1M RL RED #14									
Calculations based on Running Total Length									
Design Criteria: Ambient temperature: 167 °F Max. operating voltage drop: 15%									
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Standby Time: 24 Hrs	0.84 A
6808	Panel	Panel	MAIN BOARD 6808	0.0	190,000 mA	28.2 V	(0.0000 V)	Alarm time: 5 Min	0.174 A
2	6496	Panel	INTELLIGENT PWR EXPANDER, 6-AMP, 4-ANAL	0.0	10,000 mA	28.2 V	(0.0000 V)	Battery requirement:	1.133 Ah
1	5680R	Panel	REMOTE LCD ANNUNCIATOR, RED	0.0	20,000 mA	28.139 V	(0.061 V)	Requirement with compensation:	7.319 Ah
Total Current: 30,000 mA			Total Voltage Drop: 0.061 V			Total Voltage Drop: 0.061 V			
Circuit Calculations									
Panel: FACP Card: 00 Circuit:SBP1									
Circuit Name: SBP1									
Circuit Type: Notification									
Terminal Voltage: 28.4 V DC									
Cable: 142 SOL JKT FPLR 1M RL RED #14									
Calculations based on Running Total Length									
Design Criteria: Ambient temperature: 167 °F Max. operating voltage drop: 15%									
Device	Part No	Panel	Appliance Desc	Distance	Current	Voltage	Voltage Drop	Standby Time: 24 Hrs	0.84 A
N-001	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	63.1	72,000 mA	19,912 V	(0.4808 V)	Alarm time: 5 Min	0.174 A
N-002	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 110CD	2.4	162,000 mA	19,902 V	(0.0107 V)	Battery requirement:	1.133 Ah
N-003	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 110CD	40.2	162,000 mA	19,696 V	(0.274 V)	Requirement with compensation:	7.319 Ah
N-004	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 110CD	90.6	162,000 mA	19,571 V	(0.340 V)		
N-004	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	23.8	43,000 mA	18,467 V	(0.0851 V)		
N-005	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	13.0	43,000 mA	18,460 V	(0.0463 V)		
N-006	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	14.8	74,000 mA	18,367 V	(0.0434 V)		
N-007	SRL	Panel	L-SERIES STROBE, RED, WALL, 30CD	27.0	63,000 mA	18,292 V	(0.1676 V)		
N-008	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	27.0	74,000 mA	18,292 V	(0.1676 V)		
N-009	SRL	Panel	L-SERIES STROBE, RED, WALL, 30CD	7.9	63,000 mA	18,199 V	(0.1043 V)		
N-010	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	79.0	43,000 mA	18,018 V	(0.121 V)		
N-011	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	7.9	43,000 mA	18,017 V	(0.0042 V)		
N-012	P2RL	Panel	L-SERIES 2 WIRE, HORN STROBE, RED, WALL, 30CD	18.4	121,000 mA	17,965 V	(0.0871 V)		
N-013	SRL	Panel	L-SERIES STROBE, RED, WALL, 15CD	62.2	43,000 mA	17,864 V	(0.0871 V)		
Total Current: 150,000 mA			Total Voltage Drop: 0.2416 V			Total Voltage Drop: 0.2416 V			



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  d = 610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE	B  100–300 mm max. 1.52 m (5 ft) d min. but not less than 305 mm (12 in.) ONE DETECTOR MOUNTED ON EITHER SIDE
	C  d1 ≤ 610mm (24 in.) d2 > 610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE	D  100–300 mm d1 ≤ 610mm (24 in.) d2 > 610mm (24 in.) ONE DETECTOR MOUNTED ON HIGHER SIDE
OVER 610 mm (24 in.) ON ONE SIDE ONLY	E  d > 610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE	F  100–300 mm d 1.52 m (5 ft) max. min. = d 1.52 m (5 ft) max. min. = d TWO DETECTORS REQUIRED
OVER 1524 mm (60 in.)	G MIGHT REQUIRE ADDITIONAL DETECTORS	

- NOTES:
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 2. All manual pull stations shall be mounted four (4) feet above the finished floor (centerline of device, +or-6inches), unless otherwise noted.
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 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.

PROFESSIONAL ENGINEER STAMP:

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



913-491-1700
913-491-1701

6985 W 153rd St
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