

CITY OF LEE'S SUMMIT FIRE STATION #4

5031 NORTHEAST LAKEWOOD WAY LEE'S SUMMIT, MISSOURI 64064

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

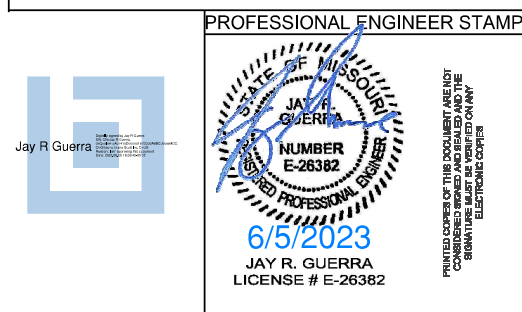
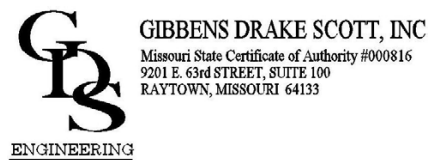
FA - 1	Cover Page
FA - 2	First Floor Plan
FA - 3	Second Floor Plan
FA - 4	Batter & Circuit Calculations, Operational Matrix, and Riser Diagram
FA - 5	NFPA 72 Reference

Symbol Legend

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

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, +0'-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.



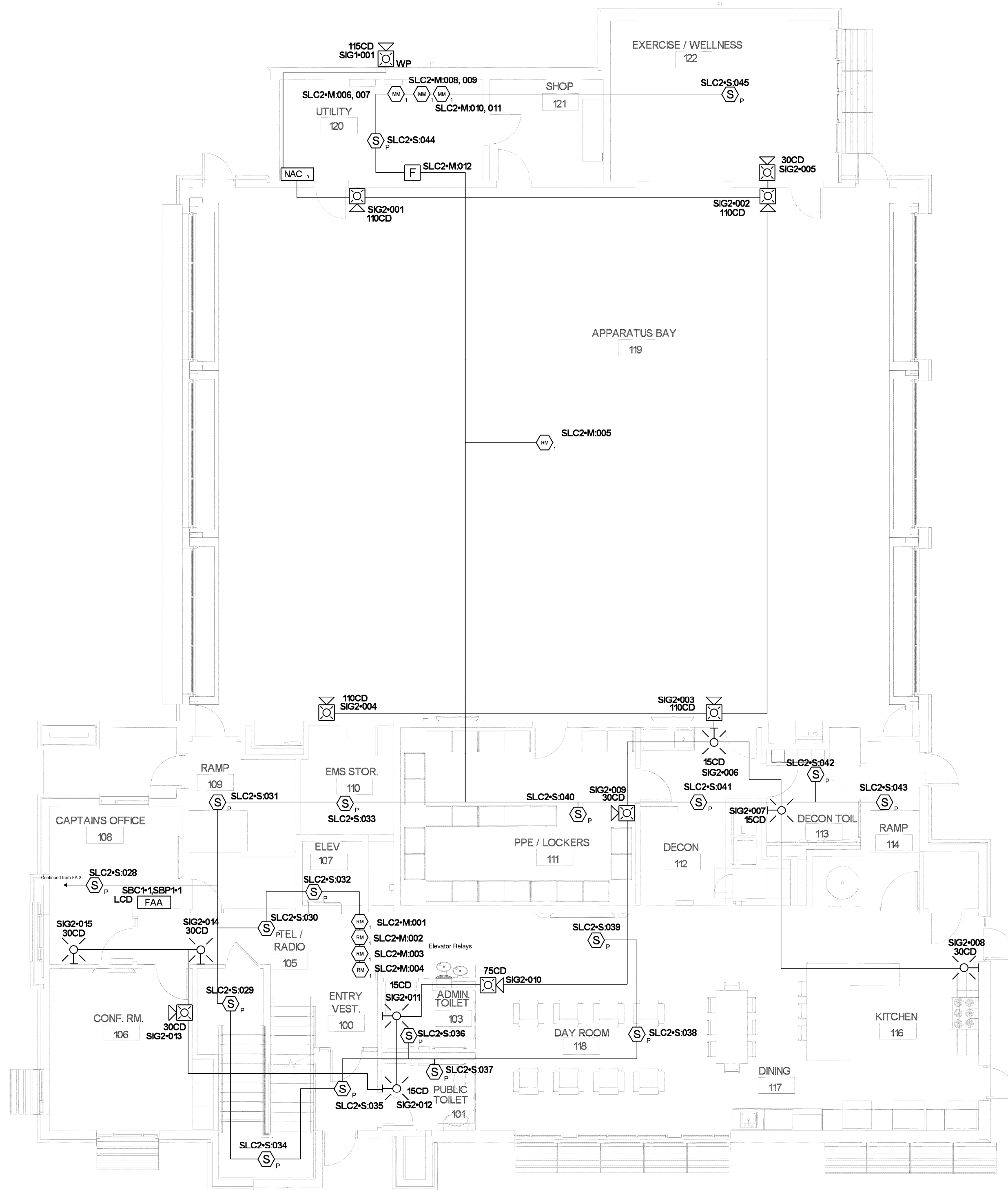
REVISIONS:	DATE:



SITE: 5031 Northeast Lakewood Way
Lee's Summit, Missouri 64064

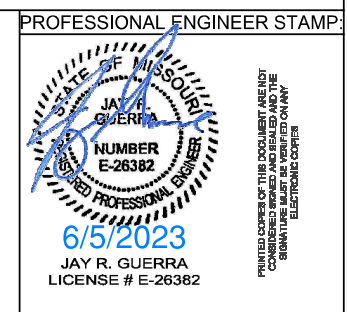
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SCALE AT:	DATE:	DESIGNED BY:
	5-31-2023	
PROJECT NO:	DRAWING NO:	REVISION:
	FA-1	



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- All smoke detectors shall be located a minimum of three (3) feet from any HVAC diffuser.
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 - 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 64113



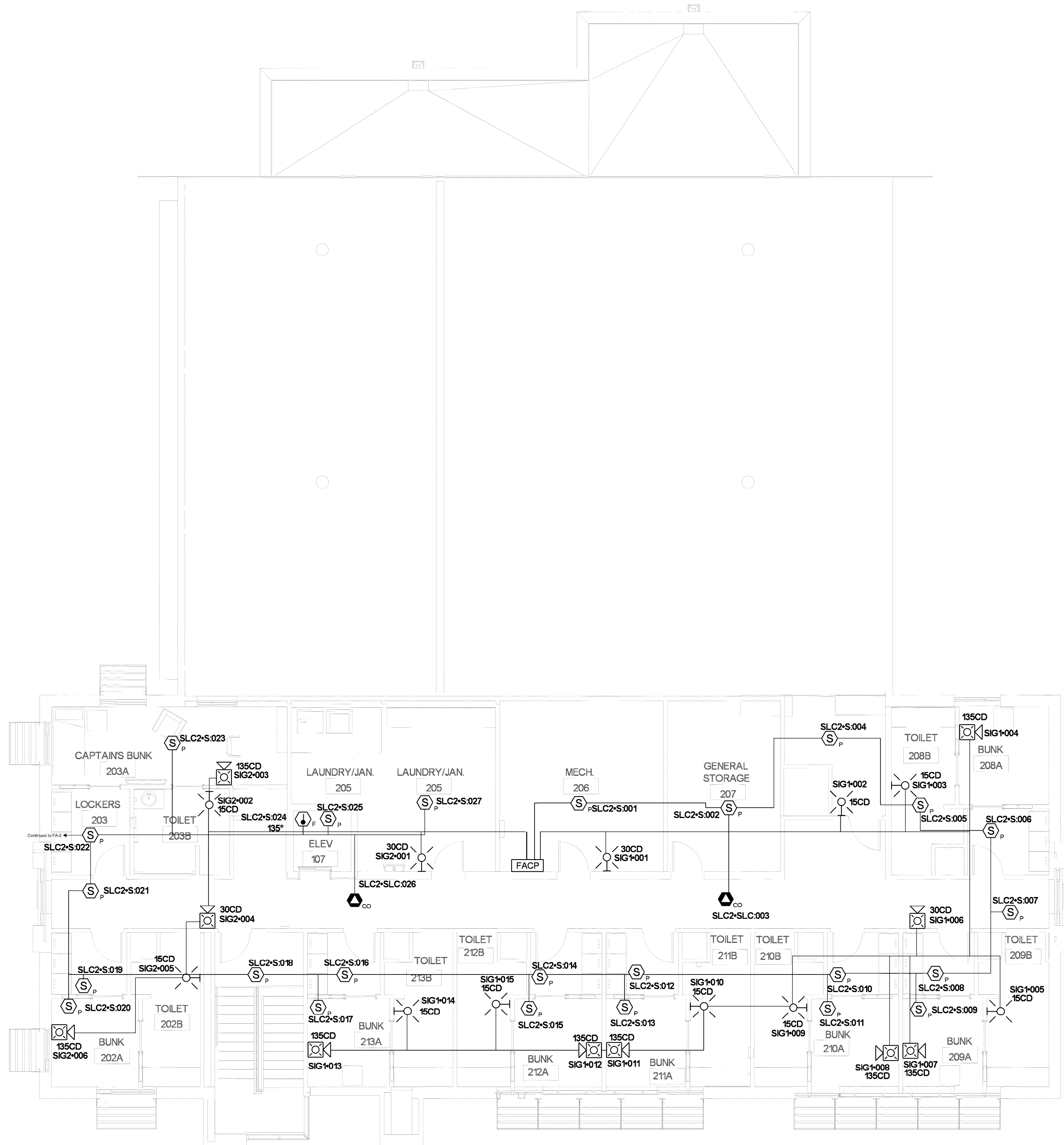
REVISIONS:	DATE:

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

SITE: 5031 Northeast Lakewood Way
 Lee's Summit, Missouri 64064

TITLE: First Floor Plan

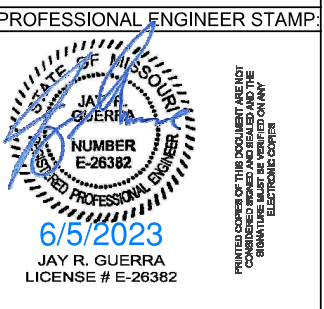
SCALE AT: 1/8" = 1'	DATE: 5-31-2023	DESIGNED BY:
PROJECT NO: FA-2	DRAWING NO:	REVISION:



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.
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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. 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



REVISIONS:	DATE:

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

SITE: 5031 Northeast Lakewood Way
 Lee's Summit, Missouri 64064

TITLE: Second Floor Plan

SCALE AT: 1/5" = 1'	DATE: 5-31-2023	DESIGNED BY:
PROJECT NO: FA-3	DRAWING NO:	REVISION:

Battery Calculations for Panel: NAC

Part No: 5496 - INTELLIGENT PWR EXPANDER, 6-AMP, 4A4C
 Job number: 1 Job name: Drawing1

Part No.	Qty.	Description	Standby	Total Standby	Alarm	Total Alarm
5496 MB	1	INTELLIGENT POWER MODULE MAIN BOARD	40,000 mA	40,000 mA	160,000 mA	160,000 mA
Peripheral Devices						
P2RK	1	HORN/STROBE, 2 WIRE, STANDARD CD, RED, OUTDOOR (Notification) 115CD 84dB	0.0000 mA	0.0000 mA	210.0000 mA	210.0000 mA
P2RL	1	L-SERIES 2-WIRE, HORN STROBE, RED, WALL (Notification) 35CD 89dB	0.0000 mA	0.0000 mA	74.0000 mA	74.0000 mA
P2RL	4	L-SERIES 2-WIRE, HORN STROBE, RED, WALL (Notification) 115CD 89dB	0.0000 mA	0.0000 mA	198.0000 mA	792.0000 mA
SRL	3	L-SERIES STROBE, RED, WALL (Notification) 35CD	0.0000 mA	0.0000 mA	63.0000 mA	189.0000 mA
P2RL	2	L-SERIES 2-WIRE, HORN STROBE, RED, WALL (Notification) 35CD 89dB	0.0000 mA	0.0000 mA	107.0000 mA	214.0000 mA
P2RL	1	L-SERIES 2-WIRE, HORN STROBE, RED, WALL (Notification) 75CD 89dB	0.0000 mA	0.0000 mA	156.0000 mA	156.0000 mA
SRL	4	L-SERIES STROBE, RED, WALL (Notification) 15CD	0.0000 mA	0.0000 mA	43.0000 mA	172.0000 mA
Total Peripheral Standby			0.0000 mA	0.0000 mA	1097.0000 mA	1097.0000 mA
Total Standby Amps			40.0000 mA	40.0000 mA	1097.0000 mA	1097.0000 mA
Total Alarm Amps					160.0000 mA	160.0000 mA

Standby time: 24 Hrs 0.96 Ah
 Alarm time: 5 Min 0.164 Ah
 Battery requirement: 1.124 Ah
 Requirement with compensation: 1.349 Ah

Battery Calculations for Panel: FACP

Part No: 6888 - FACP ADDRESSABLE 198 OR 318 POINTS
 Job number: 1 Job name: Drawing1

Part No.	Qty.	Description	Standby	Total Standby	Alarm	Total Alarm
6888 MB	1	MAIN BOARD 6888	190,000 mA	190,000 mA	250,000 mA	250,000 mA
Peripheral Devices						
SRL	9	L-SERIES STROBE, RED, WALL (Notification) 15CD	0.0000 mA	0.0000 mA	43.0000 mA	387.0000 mA
P2RL	2	L-SERIES 2-WIRE, HORN STROBE, RED, WALL (Notification) 30CD 89dB	0.0000 mA	0.0000 mA	74.0000 mA	148.0000 mA
P2RH-LF	8	HORN/STROBE, 2-WIRE, M-C HIGH, LOW FREQ, RED (Notification) 115CD 76dB	0.0000 mA	0.0000 mA	277.0000 mA	2216.0000 mA
SRL	2	L-SERIES STROBE, RED, WALL (Notification) 30CD	0.0000 mA	0.0000 mA	63.0000 mA	126.0000 mA
5868R	1	REMOTE LCD ANNUNCIATOR, RED (Power)	20,000 mA	20,000 mA	20,000 mA	20,000 mA
5496	1	INTELLIGENT PWR EXPANDER, 6-AMP, 4A4C, 5496 MB (Power)	10,000 mA	10,000 mA	10,000 mA	10,000 mA
5868R	1	REMOTE LCD ANNUNCIATOR, RED (Serial)	0.0000 mA	0.0000 mA	0.0000 mA	0.0000 mA
5496	1	INTELLIGENT PWR EXPANDER, 6-AMP, 4A4C, 5496 MB (Serial)	10,000 mA	10,000 mA	10,000 mA	10,000 mA
SK-PHOTO-W	42	LOW-PROFILE PHOTOELECTRIC SENSOR WHITE (Signaling line)	0.2000 mA	8.4000 mA	0.2000 mA	8.4000 mA
SK-PULL-DA	1	PULL STATION, DOUBLE ACTION, ADDRESSABLE (Signaling line)	0.3500 mA	0.3500 mA	0.3500 mA	0.3500 mA
SK-MONITOR	2	DUAL MONITOR MODULE (Signaling line)	0.7500 mA	2.2500 mA	0.7500 mA	2.2500 mA
SK-HEAT-W	1	LOW-PROFILE INTELLIGENT 15SF FIXED THERMAL SENSOR WHITE (Signaling line)	0.2000 mA	0.2000 mA	0.2000 mA	0.2000 mA
SK-RELAY	5	RELAY MODULE, ADDRESSABLE (Signaling line)	0.2000 mA	1.0000 mA	0.1300 mA	0.6500 mA
SK-FIRE-CO-W	2	ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR, WHITE (Signaling line)	0.2000 mA	0.4000 mA	0.2000 mA	0.4000 mA
Total Peripheral Standby			0.2000 mA	8.9500 mA	2.0000 mA	8.9500 mA
Total Standby Amps			242.9000 mA	242.9000 mA	3182.3300 mA	3182.3300 mA
Total Alarm Amps					3182.3300 mA	3182.3300 mA

Standby time: 24 Hrs 5.83 AH
 Alarm time: 5 Min 0.265 AH
 Battery requirement: 6.095 AH
 Requirement with compensation: 7.314 AH

Circuit Calculations Panel: FACP Card: 00

Terminal Voltage: 20.4 V DC Amperage: 3.0000 A
 Cable: 142 SOL JKT FPLR 1M RL RED #14
 Calculations based on Lump Sum Length.

Circuit Description	Type	Total Len	P2RK, 115CD, 210,000 mA	P2RL, 115CD, 43,000 mA	P2RL, 30CD, 74,000 mA	SRL, 30CD, 63,000 mA	Total Amps	Gauge	V Drop %	V Drop	Resistance	Max Len
SB1	Notification	194'-0"	7	6	1	1	2105.0000 mA	#14	12.26	2.5614 V	1.2 Ohms	284'-0"

Circuit Calculations Panel: NAC Card: 01

Terminal Voltage: 20.4 V DC Amperage: 2.0000 A
 Cable: 142 SOL JKT FPLR 1M RL RED #14
 Calculations based on Lump Sum Length.

Circuit Description	Type	Total Len	P2RK, 115CD, 210,000 mA	P2RL, 115CD, 43,000 mA	P2RL, 30CD, 107,000 mA	SRL, 30CD, 63,000 mA	P2RL, 30CD, 74,000 mA	Total Amps	Gauge	V Drop %	V Drop	Resistance	Max Len
SB2	Notification	21'-0"	1	1	2	1	1597.0000 mA	#14	14.23	2.9025 V	1.8 Ohms	374'-0"	

Circuit Calculations Panel: FACP Card: 00

Terminal Voltage: 20.2 V DC Amperage: 2.0000 A
 Cable: 142 SOL JKT FPLR 1M RL RED #14
 Calculations based on Lump Sum Length.

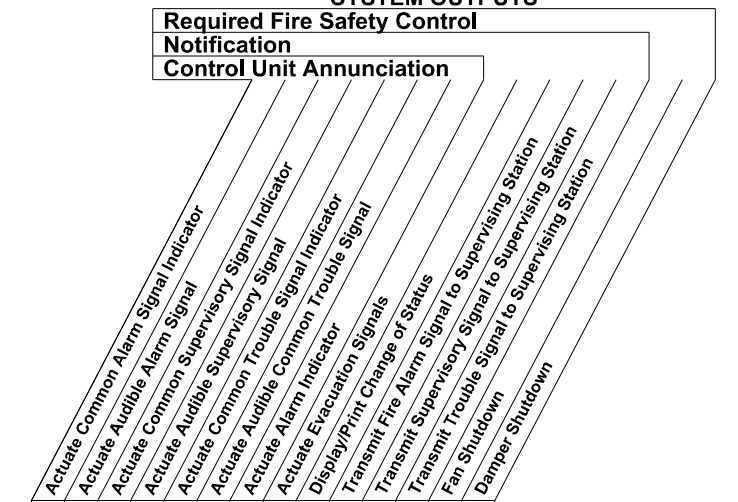
Circuit Description	Type	Total Len	SK-MONITOR, 25,000 mA	SK-FIRE-CO-W, 10,000 mA	SK-RELAY, 5, 0.2000 mA	SK-FIRE-CO-W, 2,000 mA	SK-HEAT-W	Total Amps	Gauge	V Drop %	V Drop	Resistance	Max Len
SB3	Power/SBUS RS-485	79'-0"	1	2	1	1	36,000 mA	#14	9.66	19.128 V	4.4 Ohms	1973'-0"	

Circuit Calculations Panel: FACP Card: 00

Terminal Voltage: 4.2 V DC Amperage: 2.0000 A
 Cable: 182 SOL JKT FPLR 1M RL RED #18
 Calculations based on Lump Sum Length.

Circuit Description	Type	Total Len	SK-PHOTO-W, 4,500 mA	SK-PULL-DA, 0.350 mA	SK-MONITOR, 2, 0.750 mA	SK-RELAY, 0.260 mA	SK-FIRE-CO-W, 2,000 mA	SK-HEAT-W	Total Amps	Gauge	V Drop %	V Drop	Resistance	Max Len
SB2	Signaling Line/SLC	89'-0"	42	1	3	5	12,900 mA	#18	6.87	0.1784 V	13.8 Ohms	1837'-0"		

SYSTEM OUTPUTS



SYSTEM INPUTS

1	Smoke Detectors	A	B	C	D	E	F	G	H	I	J	K	L	M	N	1
2	Manual Fire Alarm Boxes	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
3	Heat Detectors	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3
4	CO Detector	●	●	●	●	●	●	●	●	●	●	●	●	●	●	4
5	Waterflow	●	●	●	●	●	●	●	●	●	●	●	●	●	●	5
6	Tamper	●	●	●	●	●	●	●	●	●	●	●	●	●	●	6
7	Fire Alarm AC Power Failure	●	●	●	●	●	●	●	●	●	●	●	●	●	●	7
8	Fire Alarm System Low Battery	●	●	●	●	●	●	●	●	●	●	●	●	●	●	8
9	Open Circuit	●	●	●	●	●	●	●	●	●	●	●	●	●	●	9
10	Ground Fault	●	●	●	●	●	●	●	●	●	●	●	●	●	●	10
11	Notification Appliance Circuit Short	●	●	●	●	●	●	●	●	●	●	●	●	●	●	11

OPERATIONAL MATRIX

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.
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- 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
 BARTTOWN, MISSOURI 64113

PROFESSIONAL ENGINEER STAMP

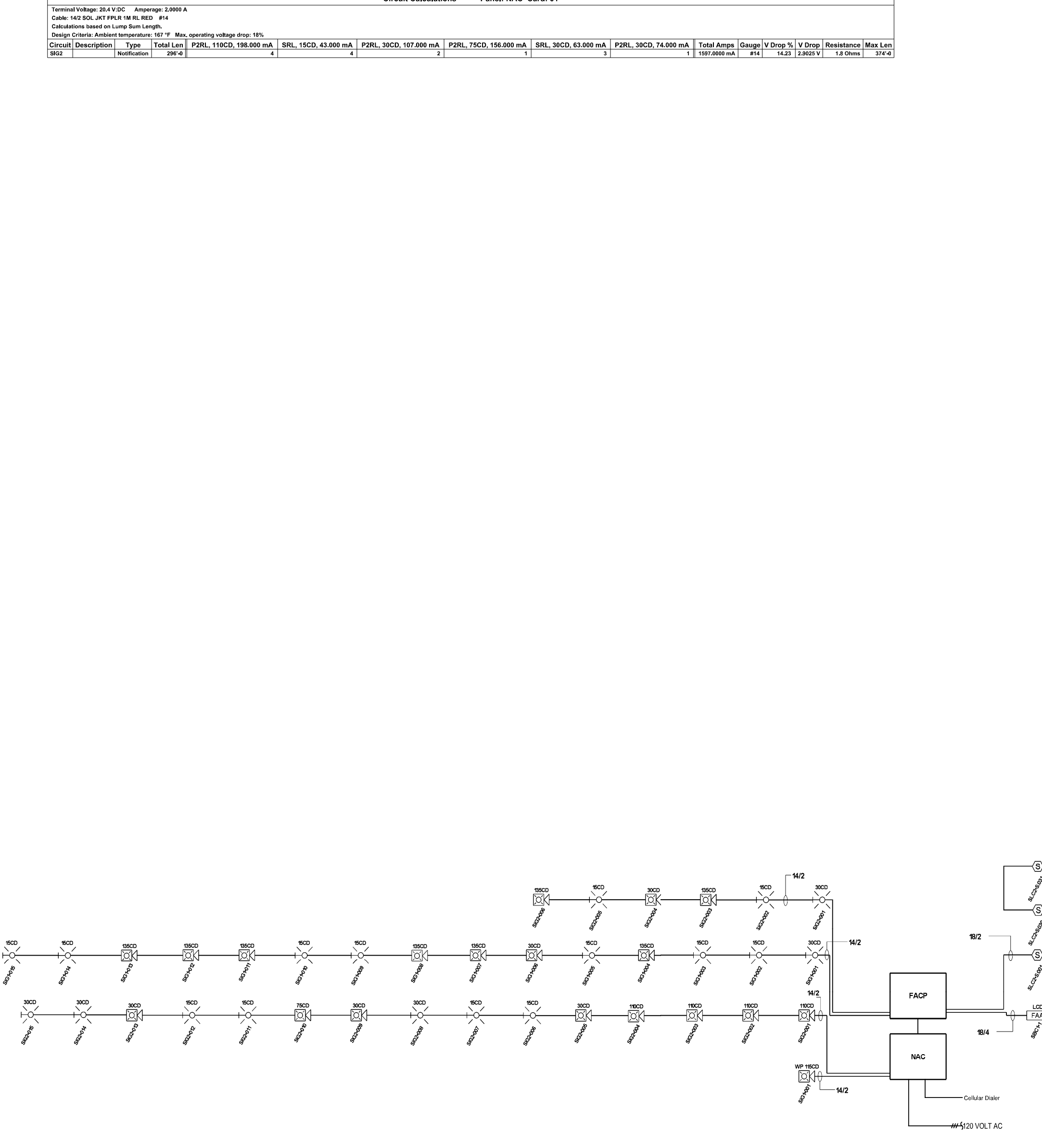
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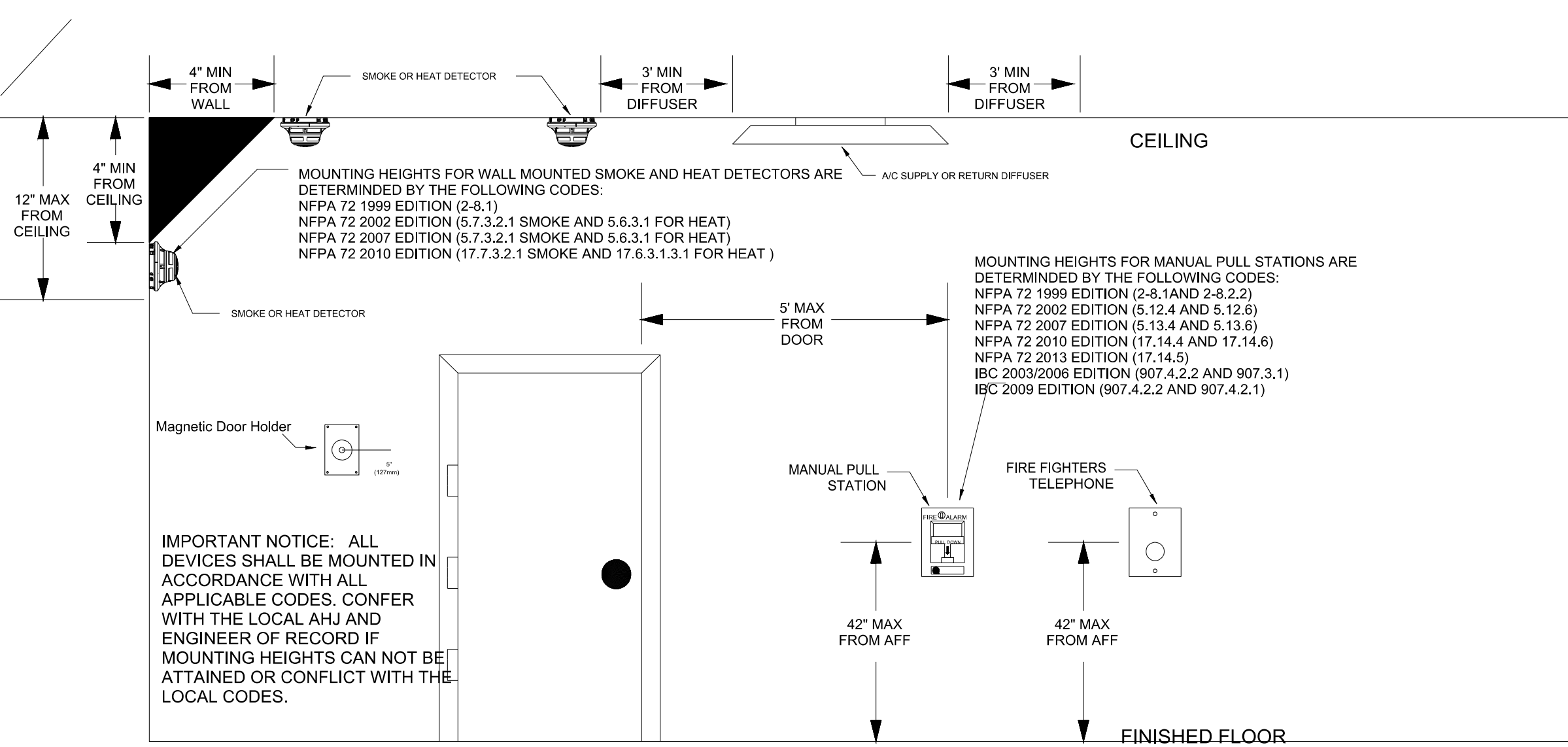
ENVISION TECHNOLOGY GROUP
 913-491-1700 6985 W 153rd St
 913-491-1701 Overland Park, KS 66223

SITE: 5031 Northeast Lakewood Way
 Lee's Summit, Missouri 64064

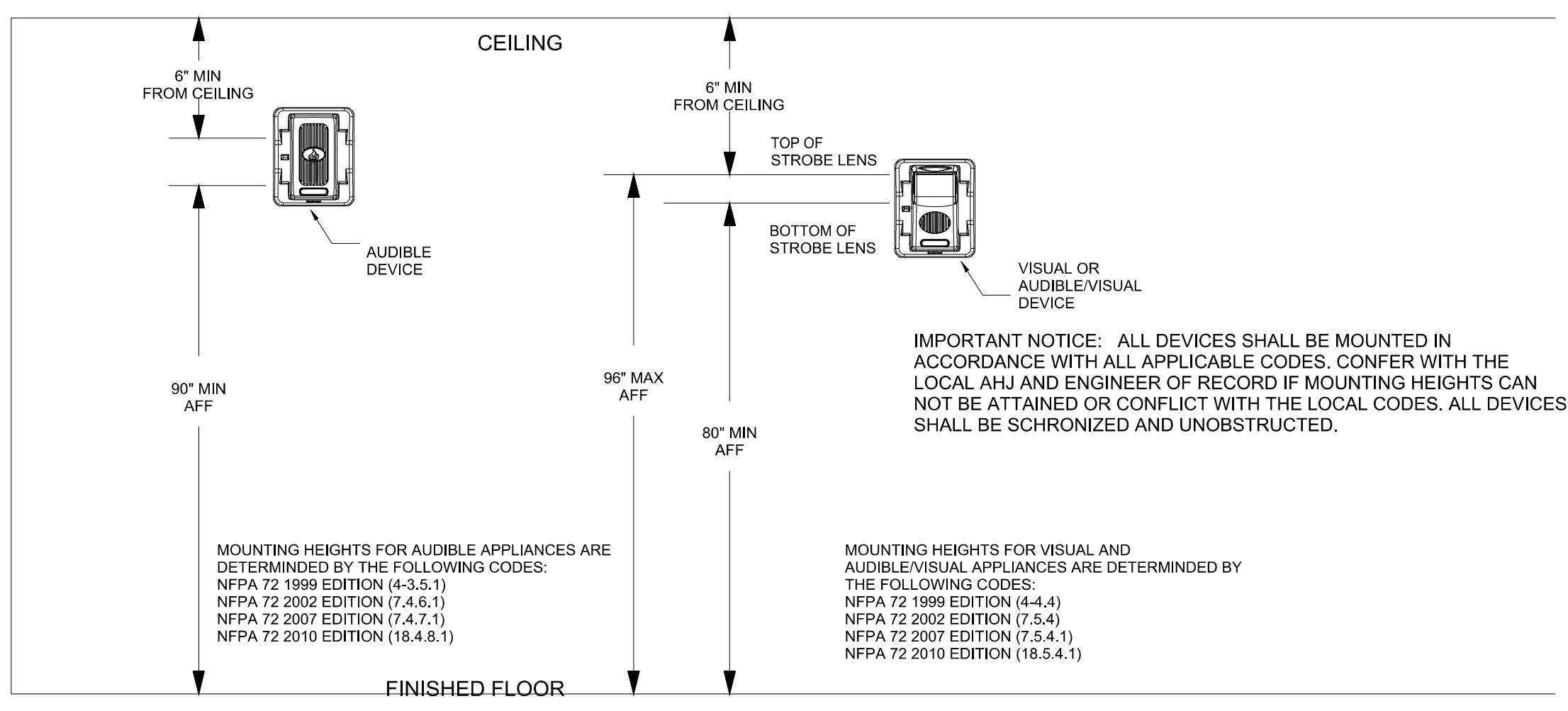
TITLE: Batter & Circuit Calculations, Operational Matrix, and Riser Diagram

SCALE AT:	DATE:	DESIGNED BY:
	5-31-2023	
PROJECT NO:	DRAWING NO:	REVISION:
	FA-4	





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 A d=610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE	SMOKE DETECTOR CEILING MOUNTED B 100-300 mm or max. 1.52 m (5 ft) d min. but not less than 305 mm (12 in.)
OVER 610 mm (24 in.) ON ONE SIDE ONLY	C d ₁ ≤ 610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON HIGHER SIDE	D 100-300 mm or d ₂ > 610 mm (24 in.) min. = d ONE DETECTOR MOUNTED ON EITHER SIDE
OVER 610 mm (24 in.) ON BOTH SIDES	E d > 610mm (24 in.) DETECTOR OR DETECTOR CLOSER MOUNTED ON EITHER SIDE	F 100-300 mm or 1.52 m (5 ft) max. min. = d ONE DETECTOR MOUNTED ON HIGHER SIDE
OVER 1524 mm (60 in.)	G MIGHT REQUIRE ADDITIONAL DETECTORS	TWO DETECTORS REQUIRED

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 - 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
JAY R. GUERRA
NUMBER E-26382
6/5/2023
LICENSE # E-26382

REVISIONS:	DATE:

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

SITE: 5031 Northeast Lakewood Way
Lee's Summit, Missouri 64064

TITLE: NFPA 72 Reference

SCALE AT:	DATE:	DESIGNED BY:
	5-31-2023	
PROJECT NO:	DRAWING NO:	REVISION:
	FA-5	

NFPA 72 Device Reference