

Crash Champions
451 SE Oldham Parkway
Lee's Summit, MO 64081

CODE INFORMATION

Project Type: new

Building Codes: IBC-2018
NFPA-72 2016

Number of Stories: 1

Primary Use Group: B

Sprinkled	100%
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Fire Alarm System input / output matrix

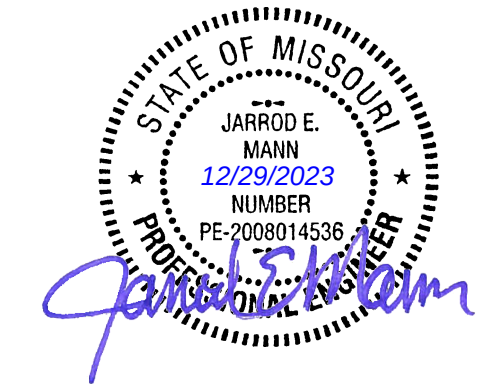
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Sheet Legend

Sheet Legend	
F1	Cover Sheet
F2	Floor Plan
F3	Details and Calculations

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Jarrold E. Mann, P.E.
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Missouri State Certificate of Authority # F00856806

CRASH CHAMPIONS

451 SE Oldham Parkway
Lee's Summit, MO 64081

Revision Key

No.	Date	Revision
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Project Manager:

Jarrod E. Mann, P.E.

Project Number:

23-1054L Phase 23-17

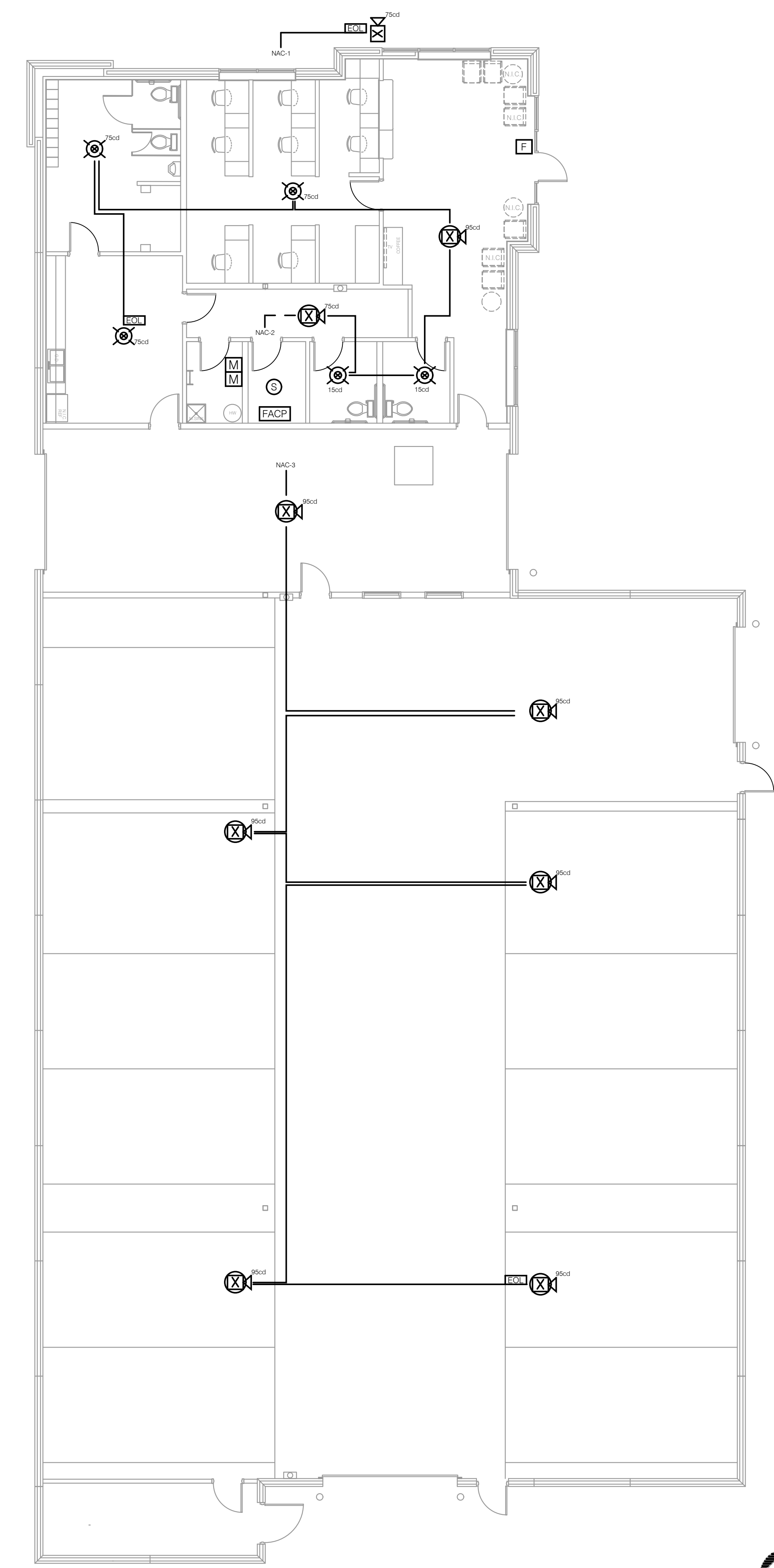
Date of Issue:

2023-12-29

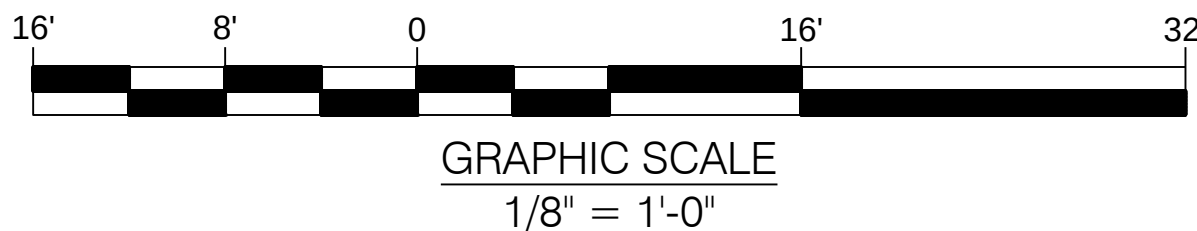
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Cover Sheet



FIRE ALARM PLAN



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STATE OF MISSOURI
JARROD E. MANN
12/29/2023
NUMBER
PE-2008014536
Professional Engineer

Jarrod E. Mann, P.E.
MO #2008014536

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ENGINEERS · ARCHITECTS · SURVEYORS

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Revision Key		
No.	Date	Revision
Project Manager: Jarrod E. Mann, P.E.		
Project Number: 23-1054L Phase 23-17		
Date of Issue: 2023-12-29		
Sheet Number:		

F-2

J Webb Inc		IntelliKnight 6808 Battery Calculation									
		Standby Current (amps)				Secondary Alarm Current (amps)					
Device Type		Qty		Current Draw	Total		Qty		Current Draw	Total	
1. Control Panel											
6808 Control Panel		1	x	0.190000	=	0.190000	1	x	0.250000	=	0.250000
2. Addressable SLC Devices											
SK-PHOTO		1	x	0.000300	=	0.000300	1	x	0.000300	=	0.000300
SK-PHOTO-T			x	0.000300	=		x	0.000300	=		
SK-HEAT			x	0.000300	=		x	0.000300	=		
SK-HEAT-HT			x	0.000300	=		x	0.000300	=		
SK-HEAT-ROR			x	0.000300	=		x	0.000300	=		
SK-BEAM			x	0.002000	=		x	0.002000	=		
SK-BEAM-T			x	0.002000	=		x	0.002000	=		
SK-DUCT			x	0.000300	=		x	0.000300	=		
SK-ACCLIMATE			x	0.000300	=		x	0.000300	=		
SK-CONTROL			x	0.000375	=		x	0.000375	=		
SK-MONITOR		2	x	0.000375	=	0.000750	2	x	0.000375	=	0.000750
SK-MINIMON			x	0.000375	=		x	0.000375	=		
SK-PULL-SA		1	x	0.000375	=	0.000375	1	x	0.000375	=	0.000375
SK-PULL-DA			x	0.000375	=		x	0.000375	=		
SK-MONITOR-2			x	0.000750	=		x	0.000750	=		
SK-MON-10			x	0.003500	=		x	0.003500	=		
SK-RELAY-6			x	0.001450	=		x	0.001450	=		
SK-CONTROL-6			x	0.002250	=		x	0.002250	=		
SK-RELAY			x	0.000255	=		x	0.000255	=		
SK-RELAYMON-2			x	0.001300	=		x	0.024000	=		
SK-ZONE			x	0.000270	=		x	0.000270	=		
SK-ZONE-6			x	0.002000	=		x	0.002000	=		
SK-FIRE-CO			x	0.000300	=		x	0.007200	=		
3. SLC Accessory Bases											
B200S			x	0.000300	=		x	0.000300	=		
B200S-LF			x	0.000300	=		x	0.000300	=		
B200SR			x	0.000300	=		x	0.000300	=		
B200SR-LF			x	0.000300	=		x	0.000300	=		
B224RB			x	0.000500	=		x	0.000500	=		
RTS151			x	0.000000	=		x	0.007500	=		
RTS151KEY			x	0.000000	=		x	0.007500	=		
RA100Z			x	0.000000	=		x	0.010000	=		
4. SLC Isolator Devices											
SK-ISO			x	0.000450	=		x	0.000450	=		
ISO-6			x	0.002700	=		x	0.102000	=		
B224BI			x	0.000500	=		x	0.000500	=		
5. Auxiliary Power Draw - SLC Devices											
SK-CONTROL (Aux. Power)			x	0.001700	=		x	0.007000	=		
SK-CONTROL-6 (Aux. Power)			x	0.008000	=		x	0.020000	=		
SK-ZONE (Aux. Power)			x	0.012000	=		x	0.090000	=		
SK-ZONE-6 (Aux. Power)			x	0.050000	=		x	0.270000	=		
B200S (Aux. Power)			x	0.000500	=		x	0.035000	=		
B200S-LF (Aux. Power)			x	0.000550	=		x	0.140000	=		
B200SR (Aux. Power)			x	0.000500	=		x	0.035000	=		
B200SR-LF (Aux. Power)			x	0.001000	=		x	0.125000	=		
6. Accessory Modules											
5860			x	0.020000	=		x	0.025000	=		
5860R			x	0.020000	=		x	0.025000	=		
5824			x	0.045000	=		x	0.045000	=		
5496			x	0.010000	=		x	0.010000	=		
5865-4			x	0.035000	=		x	0.145000	=		
5865-3			x	0.035000	=		x	0.145000	=		

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5880		x	0.035000	=			x	0.200000	=
5883		x	0.000000	=			x	0.220000	=
SK-IP-2		x	0.093000	=			x	0.136000	=
SK-IP-2UD		x	0.098000	=			x	0.155000	=
CELL-MOD		x	0.055000	=			x	0.100000	=
CELL-CAB-SK		x	0.055000	=			x	0.100000	=
SK-NIC		x	0.021000	=			x	0.021000	=
SK-NIC-KIT		x	0.021000	=			x	0.021000	=
SK-FSL		x	0.079000	=			x	0.079000	=
SK-FML		x	0.053000	=			x	0.053000	=
SK-FFT		x	0.120000	=			x	0.230000	=
7. Miscellaneous Devices									
Conventional Detectors		x	0.000000	=			x	0.000000	=
Miscellaneous Device 1		x	0.000000	=			x	0.000000	=
Miscellaneous Device 2		x	0.000000	=			x	0.000000	=
Miscellaneous Device 3		x	0.000000	=			x	0.000000	=
Miscellaneous Device 4		x	0.000000	=			x	0.000000	=
Miscellaneous Device 5		x	0.000000	=			x	0.000000	=
8. Notification Appliance Circuits									
NAC 1			0.000000	=		1	0.165000	=	0.165000
NAC 2			0.000000	=		1	0.827000	=	0.827000
NAC 3			0.000000	=		1	0.990000	=	0.990000
NAC 4			0.000000	=			0.000000	=	
Total Standby Load					0.0191425	Total Alarm Load		2.233425	

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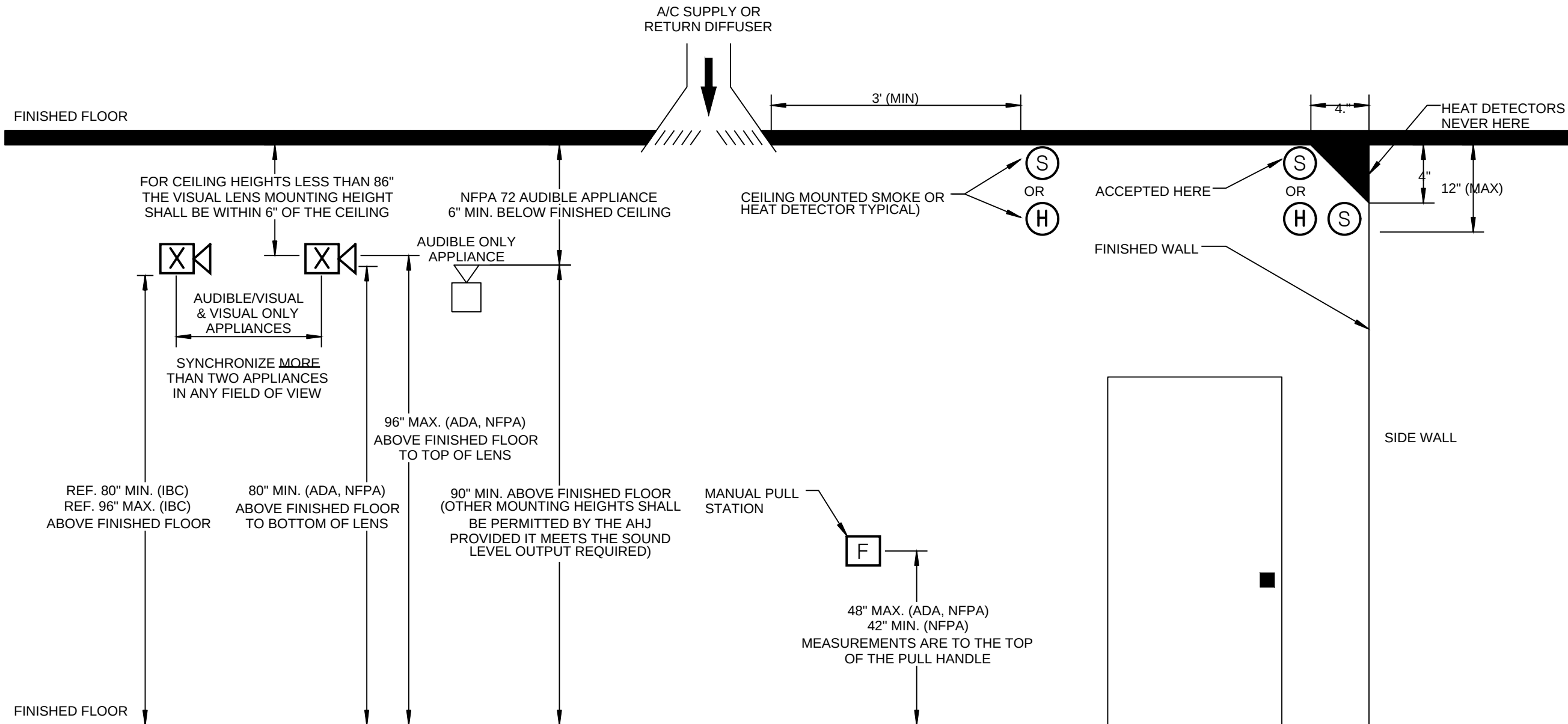
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J Webb Inc		IntelliKnight 6808 Battery Calculation									
Calculation in Total Sheet											
				Required Standby Time in Hours							
				24 Hours							
Standby Load Current		0.019143 Amps		x		24		=		4.594 AH	
				Required Alarm Time in Minutes							
				5 Minutes							
Alarm Load Current (Amps)		2.23343 Amps		x		0.084		=		0.188 AH	
						Total Current Load				4.782 AH	
						Multiply by the Derating Factor				1.2	
						Total Ampere Hours Required				5.74 AH	
Recommended Batteries:						BAT-1270 - 7AH Batteries					
Battery Check											
The batteries can be charged by the 6808 Charger.											
The batteries can be housed in the 6808 Cabinet.											
Current Draw Check											
Circuit#1 current is within the limitations of the circuit.											
Circuit#2 current is within the limitations of the circuit.											
Circuit#3 current is within the limitations of the circuit.											
Circuit#4 current is within the limitations of the circuit.											
6808 Control Panel:											
The output current is within the panel's limitations.											

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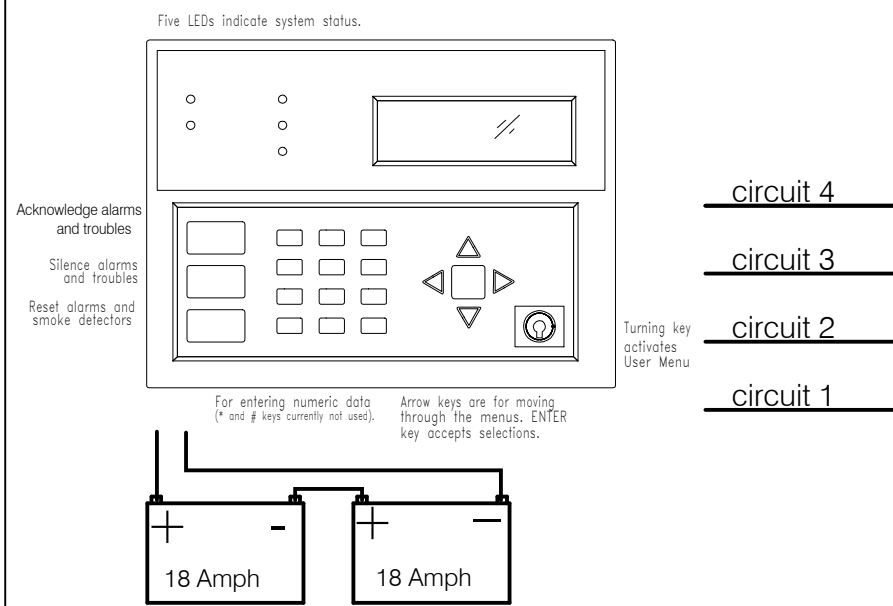


NOTE:
REFER TO THE PROPER DEVICE INSTALLATION
INSTRUCTIONS FOR BACKBOX MOUNTING HEIGHT.

FIRE ALARM DEVICE MOUNTING HEIGHT REFERENCE DETAIL

Wiring Legends
A Addressable SLC Circuits 18 gauge
B Notification Circuits 14 gauge
C S Bus Circuits 18 gauge 4 conductor

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General Notes

- A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION
- THE POWER CIRCUIT TO THE FIRE ALARM CONTROL PANEL AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED CIRCUIT BREAKER. SHALL HAVE RED MARKING. LOCK ON PROVISION, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT BREAKER SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL.
- SMOKE DETECTOR HEADS SHALL NOT BE INSTALLED BEFORE THE BUILDING IS CLEAN AND ACCEPTED.

SLC Circuit

Dotted line path shows how wire distance is calculated for the SLC device at the end of the run. The wire distance must be less than the maximum per wire gauge.

Gauge	Max. Distance
22 AWG	1500 ft.
18 AWG	3900 ft.
16 AWG	6200 ft.
14 AWG	10,000 ft.

Maximum loop resistance = 50 ohms