

YOUR
LOGO
HERE

CABLE AND WIRE LEGEND				
LABEL	PART NO	AW G	RESISTANCE (Ω/KFT)	TOTAL LENGTH
485	18/2 FPLP/R (RS-485)	18	7.77	189'
A	18/2 FPLP/R (SLC)	18	7.77	261'
P	14/2 FPLP/R (AUX)	14	3.07	189'
V	14/2 FPLP/R (NAC)	14	3.07	450'

FIRE ALARM GENERAL NOTES

1. THE FIRE ALARM SYSTEMS ARE A PERFORMANCE-BASED INSTALLATION/RENOVATION AND THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES AND ASPECTS OF THE PROJECT IN ORDER TO HAVE A SYSTEM THAT CONFORMS TO:
 - 1.1 NFPA 720-2019
 - 1.2 NFPA 101-2018
 - 1.3 IFC-2018
 - 1.4 BCS-2018
 - 1.5 GAC 120-3-20A
2. ALL WORK SHALL CONFORM TO THE GENERAL ELECTRICAL NOTES, THE SPECIFICATIONS AND ALL NOTES HEREIN.
3. ANY MODIFICATIONS TO THE FIRE ALARM DESIGN SHALL BE DOCUMENTED BY A MINIMUM NICET LEVEL 3 CERTIFIED PROFESSIONAL.
4. USE PANEL KNOCKOUTS THAT ARE AVAILABLE ON PANEL BOXES. DO NOT ENTER PANELS AT BATTERY LOCATIONS.
5. PROVIDE SURGE PROTECTIVE DEVICE FOR EACH POWER CIRCUIT SERVING FIRE ALARM SYSTEM COMPONENTS
6. SIGNAL LINE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS SHALL BE CLASS B (NFPA 720).
 - 6.1 WIRING SHALL BE IN ACCORDANCE WITH CONTRACT DOCUMENTATION AND SPECIFICATIONS.
 - 6.2 ALL SPICES SHALL MADE AT TERMINAL STRIPS. WIRE NUTS ARE NOT ACCEPTABLE. ADE TERMINAL JUNCTION BOXES AS NEEDED.
7. RACEWAY SHALL
 - 7.1 BE 3/4" MINIMUM ELECTRICAL METALLIC TUBING (EMT).
 - 7.2 FOR 120 VOLT POWER CONDUCTORS SHALL CONFORM TO THE GENERAL ELECTRICAL NOTES.
8. PROVIDE EXTRA DEEP OUTLET BOXES FOR ANNUNCIATING DEVICES.
9. FIRESTOP FIRE-RATED WALL PENETRATIONS TO MAINTAIN FIRE AND SMOKE RATINGS.
10. LABEL CONDUCTORS AND CABLE IN CONTROL PANELS, JUNCTION BOXES, PULL BOXES, AND WIRING TRAYS.
 - 10.1 ALL IDENTIFICATION SHALL CONFORM TO THE FIRE ALARM DEVICE NOMENCLATURE ON THIS SHEET.

FA0	COVER SHEET, LEGENDS & INPUT/OUTPUT MATRIX
FA1	FIRE PLAN
FA4	BATTERY CALCULATIONS & RISER DIAGRAM

SYSTEM INPUTS

1	FULL STATIONS	●	●					●		●		●	●						
2	SMOKE DETECTORS & HEAT DETECTORS	●	●					●				●	●						
3	WATERFLOW SWITCH		-																
4	TAMPER SWITCH																		
5	DUCT SMOKE DETECTOR																		
6	PANEL TROUBLE					●	●	●					●						
7	OPEN CIRCUIT					●	●	●											
8	GROUND FAULT					●	●	●					●						

[illegible]

	A
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[illegible]

B

Date: 1/18/2022
Scale: 1/8"=1'-0"
Project Number:

Designed by:	ALERT
Drawn by:	ALERT
Approved By:	

YOUR COMPANY INFO

YOUR CREDENTIALS

C

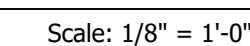
PROJECT INFO AND ADDRESS

ATLANTA, GA 30346

D

SHEET
REFERENCE
NUMBER:
FA-00
TOTAL SHEETS
3

A

BCD

Scale: 1/2" = 1'-0"

P1 NAC A POINT-TO-POINT REPORT						CIRCUIT SETTINGS		TOTALS	
Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (ft)	Resistance From Previous (Ω)	Voltage Drop From Previous (V)	Voltage At Device	Voltage Drop Percent
Circuit Wiring Properties: W 142 (FPLR) (NAC) 14 AWG, 2 Cond. Solid Copper FPLR Analog Unshielded						20.4	Max. Voltage Drop	0.32	
Distance measured using drawn segment lengths with 10.00% of additional length calculated						16	End Of Line Voltage	20.08	
						2	Wire Resistance (DNF)	3.07	Total Circuit Current (A)
						Max. Circuit Current (A)	Spurs Current (A)	0.539	
						Total Circuit Length (ft)	Spurs Current (A) Percent	73.10	
						Total Circuit Resistance (Ω)	1.20563		
NAC-A01	P2RL	2-Wire, Horn Strobe, Red 150d	0.054	0.538	13	0.08088	0.04	0.04	0.21 %
NAC-A02	P2RL	2-Wire, Horn Strobe, Red 750d	0.121	0.464	12	0.071754	0.03	0.08	0.38 %
NAC-A03	P2RL	2-Wire, Horn Strobe, Red 750d	0.121	0.363	12	0.071184	0.03	0.1	0.51 %
NAC-A04	P2RL	2-Wire, Horn Strobe, Red 750d	0.121	0.242	129	0.716489	0.17	0.3	1.45 %
NAC-A05 EOL 2.2k		2-Wire, Horn Strobe, Red 750d	0.121	0.121	31	0.190162	0.02	0.08	1.56 %

Calculation Methods:

Resistance From Previous (Ω) = Wire Resistance (Ω/ft) x 2 x Dist. From Previous (ft)

Voltage Drop From Previous = Resistance From Previous (Ω) x Remaining Current (A)

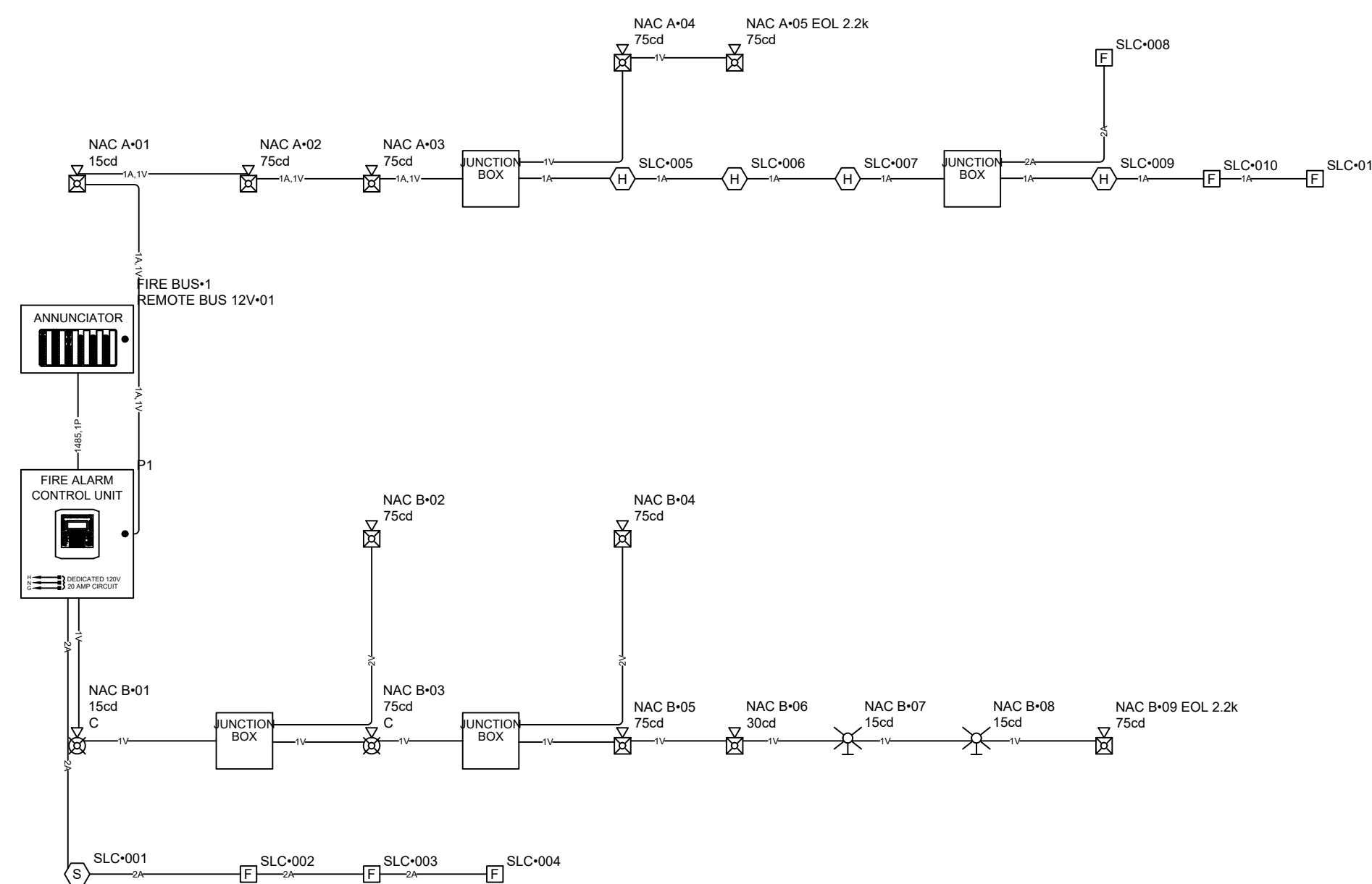
P1 NAC B-POINT-TO-POINT RESULT						CIRCUIT SETTINGS		TOTALS		
Circuit Wiring Properties: V 142V FRFR (NAC) 14 AWG, 2 Cond. Solid Copper FRFR Analog Unshielded Distance measured using drawn segment lengths with 10.0% additional length calculated						Starting Calculation Voltage	20.4	Max. Voltage Drop	1.67	
						Min. Operational Voltage	16	End Of Line Voltage	19.33	
						Max. Circuit Current (A)	2	Voltage Drop Percent	5.26	
						Wire Resistance (DMF)	3.07	Total Circuit Current (A)	1.95	
						Total Circuit Length (ft)	154	Span Current (A)	0.986	
						Total Circuit Resistance (ft)	1.562738	Span Voltage Drop Percent	45.34	
Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (ft)	Resistance From Previous (ft)	Voltage At Device From Previous	Total Voltage Drop	Voltage Drop Percent	
NAC-B01	PC2RL	2-Wire, Hom Strbde, Red 15cld	0.071	1.014	49	0.330384	0.31	20.09	0.31	1.51
NAC-B02	P2RL	2-Wire, Hom Strbde, Red 75cld	0.121	0.943	55	0.057783	0.05	19.77	0.63	3.07
NAC-B03	PC2RL	2-Wire, Hom Strbde, Red 75cld	0.179	0.822	16	0.042578	0.03	19.69	0.71	3.47
NAC-B04	P2RL	2-Wire, Hom Strbde, Red 75cld	0.156	0.643	47	0.057758	0.04	19.51	0.89	4.37
NAC-B05	P2RL	2-Wire, Hom Strbde, Red 75cld	0.121	0.487	24	0.088841	0.04	19.44	0.96	4.72
NAC-B06	P2RL	2-Wire, Hom Strbde, Red 30cld	0.107	0.366	32	0.193777	0.07	19.37	1.03	5.07
NAC-B07	SRL	Stroke, Red 15cld	0.06	0.259	11	0.065724	0.02	19.35	1.05	5.15
NAC-B08	SRL	Stroke, Red 15cld	0.043	0.199	4	0.025487	0.01	19.34	1.06	5.18
NAC-B09-ED, 2.2k	P2RL	2-Wire, Hom Strbde, Red 75cld	0.156	0.156	17	0.102204	0.02	19.33	1.07	5.26

Resistance From Previous (R5) = Wire Resistance (10/95 x 2 x Dist. From Previous (F6))										
Voltage Drop From Previous = Resistance From Previous (R5) x Remaining Current (A)										
P1 REMOTE BUS 12V POINT-TO-POINT REPORT										
Circuit Wiring Properties: P1 142Z PWRUP (AUX) 14 AWG, 2 Cond, Solid Copper PWRUP Unshielded										
Distance measured using drag segment lengths with 10.0% additional length calculated										
Circuit Wires: P1 142Z PWRUP (AUX) 14 AWG, 2 Cond, Solid Copper PWRUP Unshielded										
Total Circuit Length (F6): 1.89										
Total Circuit Resistance (R5): 1.162125										
Voltage Drop From Previous: 0										
Voltage At Device: 16.2										
Spans Current (A): 0										
Spans Voltage Drop Percent: 0.00%										
Total Voltage Drop Percent: 0.00%										
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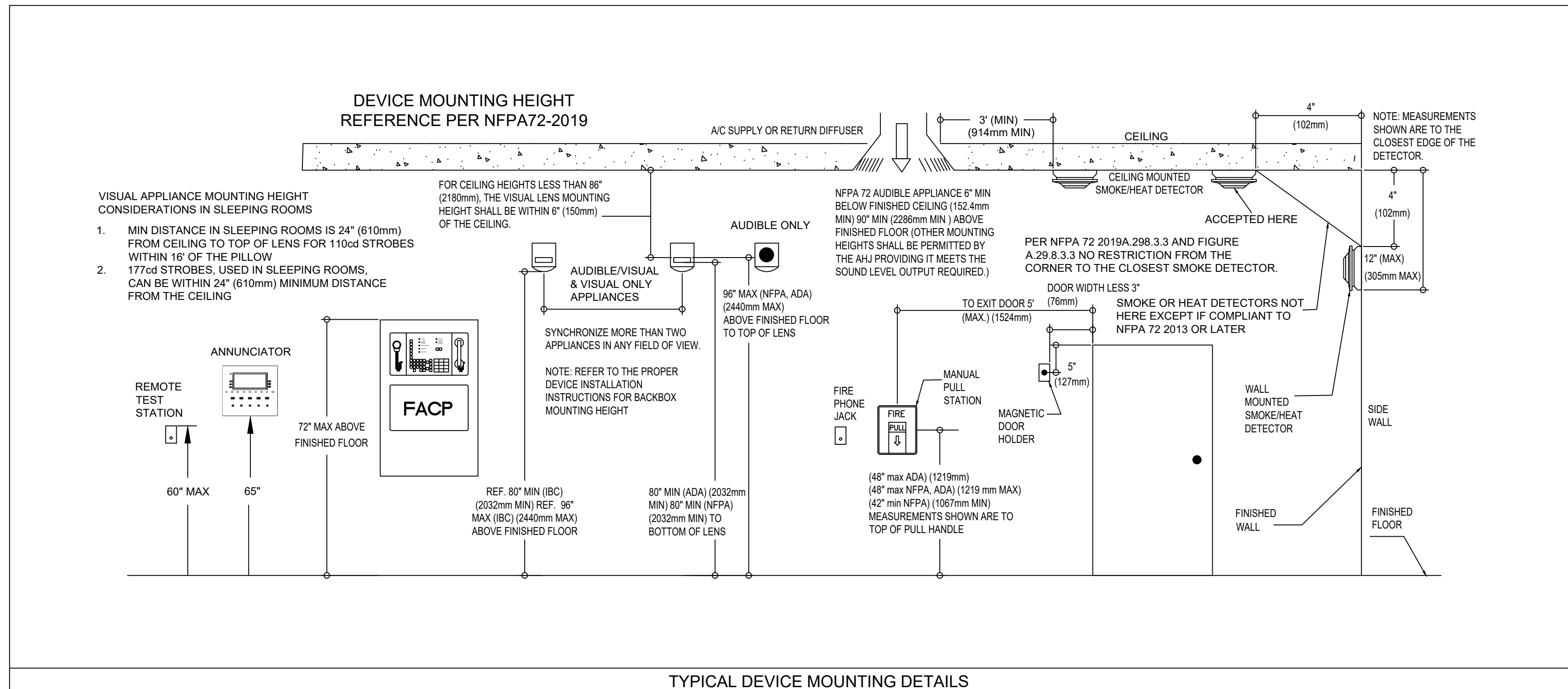
PANEL P1 (GEMC-FW-32K1) BATTERY CALCULATION								
(SECONDARY POWER SOURCE REQUIREMENTS)								
PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT (AMPS)		SECONDARY ALARM CURRENT (AMPS)	
					CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
	1		GEMC-32AB	Assembly Main Board	0	0	0	0
	1		GEMC-FW-SLC	Addressable SLC Fire Module	0.07	0.07	0.475	0.475
CIRCUIT	SYMBOL	QTY	PART NO.	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
PI-FIRE BUS		1	GEMC-FK1	LCD Fire Red Annunciator	0.115	0.115	0.115	0.115
P1-NA C		1	P2RL	2-Wire, Horn Strobe, Red 75ohm	0	0	0.054	0.054
		4	P2RL	2-Wire, Horn Strobe, Red 75ohm	0	0	0.121	0.484
		1	P2RL	2-Wire, Horn Strobe, Red 75ohm	0	0	0.107	0.107
		2	P2RL	2-Wire, Horn Strobe, Red 75ohm	0	0	0.121	0.242
P1-NA B		2	P2RL	2-Wire, Horn Strobe, Red 75ohm	0	0	0.156	0.312
		1	PC2RL	2-Wire, Horn Strobe, Red 15ohm	0	0	0.071	0.071
		1	PC2RL	2-Wire, Horn Strobe, Red 75ohm	0	0	0.179	0.179
		1	SRL	Strobe, Red 15ohm	0	0	0.043	0.043
		1	SRL	Strobe, Red 15ohm	0	0	0.06	0.06
P1-REMOTE BUS 12V		1	GEMC-FK1	LCD Fire Red Annunciator	0	0	0	0
		4	FWS-FLS-HEAT	Addressable Analog SLC Heat, 150°F heat*	0.0005	0.002	0.002	0.008
P1-SLC		6	FWC-FSLC-PULL	Addressable SLC Fire Pull Station	0.00066	0.00396	0.008	0.048
		1	FWC-FSLC-SMK w/FWC-FSLC-SMK6B	Addressable Analog SLC Smoke, photoelectric, heat*	0.00039	0.00039	0.0008	0.0006
					TOTAL STANDBY (A)	0.1935	TOTAL ALARM (A)	2.1988
					REQUIRED STANDBY TIME = 24 HOURS			
SECONDARY STANDBY LOAD (A)					0.1935	24	4.59	
SECONDARY ALARM LOAD (A)					2.1988	0.06	0.16	
STANDBY AND ALARM SUBTOTAL (AMP HOURS)							4.76	
DERATING FACTOR							1.2	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)							5.73	
* RECOMMENDED BATTERY SIZES NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.								
* BATTERY RISK SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.								

P1 FIRE BUS DEVICE SCHEDULE				CIRCUIT SETTINGS		TOTALS	
				Max. Circuit Length (F)	n/a	Total Circuit Length (F)	189
				Max. FIRE BUS NAPCO:		Total Used FIRE BUS NAPCO:	1
Circuit Wiring Properties: 485 182 FPLPFR (RS-485) 18 AWG, 2 Cond. Solid Copper FPLPFR Analog Unshielded							
Distance measured using drawn segment lengths with 10.00 % additional length calculated							
Device Label	Part No.	Building	Floor	Location	Description	Dist. From Previous (F)	
FIRE BUS1	GEN-101				LCD Fire Set Annunciator	189	

P1 SLC DEVICE SCHEDULE		CIRCUIT SETTINGS			TOTALS	
		Max. Circuit Length (Ft)	n/a	Total Circuit Length (Ft)	261	
		Max. SLC NACPO FIRE:	126	Total Used SLC NACPO FIRE	11	
Circuit Wiring Properties: 'A' 18/2 FPLPR (SLC) 18 AWG, 2 Cond. Solid Copper FPLPR Length Address Unshielded						
Distance measured using drawn segment lengths with 10.00 % additional length calculated						
Device Label	Part No.	Building	Floor	Location	Description	Dist. From Previous (Ft)
SLC-001	FWC-FSLC-SMK wFWC-FSLC-SMK68				Addressable Analog SLC Smoke, photoelectric, heat"	3
SLC-002	FWC-FSLC-PULL				Addressable SLC Fire Pull Station	8
SLC-003	FWC-FSLC-PULL				Addressable SLC Fire Pull Station	12
SLC-004	FWC-FSLC-PULL				Addressable SLC Fire Pull Station	6
SLC-005	FWC-FSLC-HEAT				Addressable Analog SLC Heat, "135°F, heat"	28
SLC-006	FWC-FSLC-HEAT				Addressable Analog SLC Heat, "135°F, heat"	31
SLC-007	FWC-FSLC-HEAT				Addressable Analog SLC Heat, "135°F, heat"	31
SLC-008	FWC-FSLC-PULL				Addressable SLC Fire Pull Station	41
SLC-009	FWC-FSLC-HEAT				Addressable Analog SLC Heat, "135°F, heat"	37
SLC-010	FWC-FSLC-PULL				Addressable SLC Fire Pull Station	37
SLC-011	FWC-FSLC-PULL				Addressable SLC Fire Pull Station	26



RISER DIAGRAM



YOUR
LOGO
HERE

REVISION			
Number	DESCRIPTION	DATE	APPLY

YOUR COMPANY INFO	Designed by:	ALERT	Date:	1/18/2023
	Drawn by:	ALERT	Scale:	1/8"=1'-0"
	Approved By:		Project Number:	

PROJECT INFO AND ADDRESS	ATLANTA, GA 30346
SHEET REFERENCE NUMBER: FA-02 TOTAL SHEETS 3	