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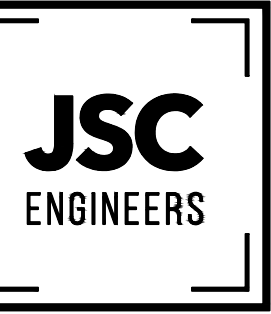
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FIRE ALARM PLAN - BUILDING 1 - FLOOR 1 - AREA A

SCALE : 1/8" = 1'-0"

1



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FIRE ALARM PLANS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

FA101

ROOM NAMES AND NUMBERS
ADDED TO ALL PLAN SHEETS

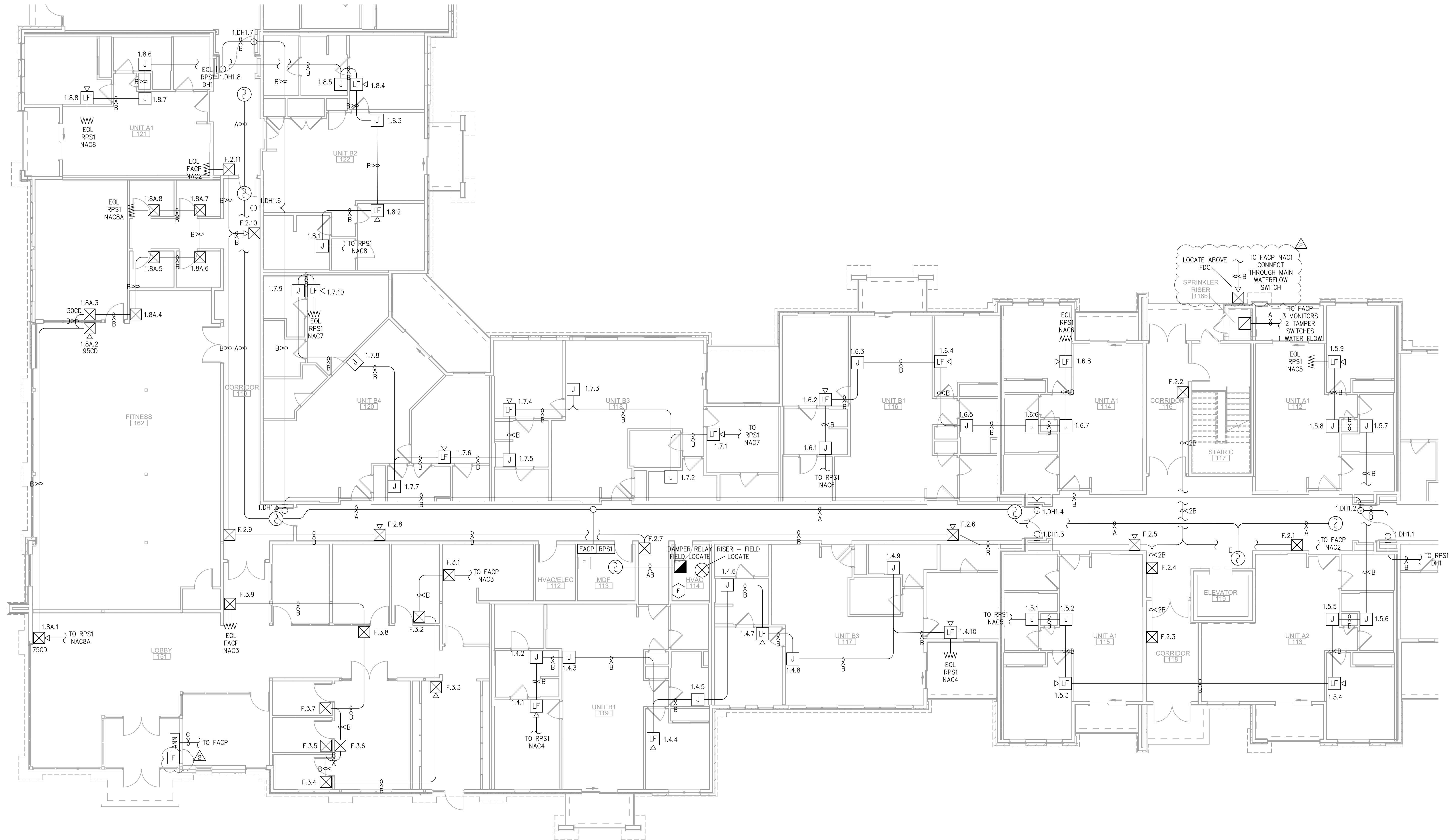
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FIRE ALARM PLAN - BUILDING 1 - FLOOR 1 - AREA B

SCALE : 1/8" = 1'-0"

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FA102

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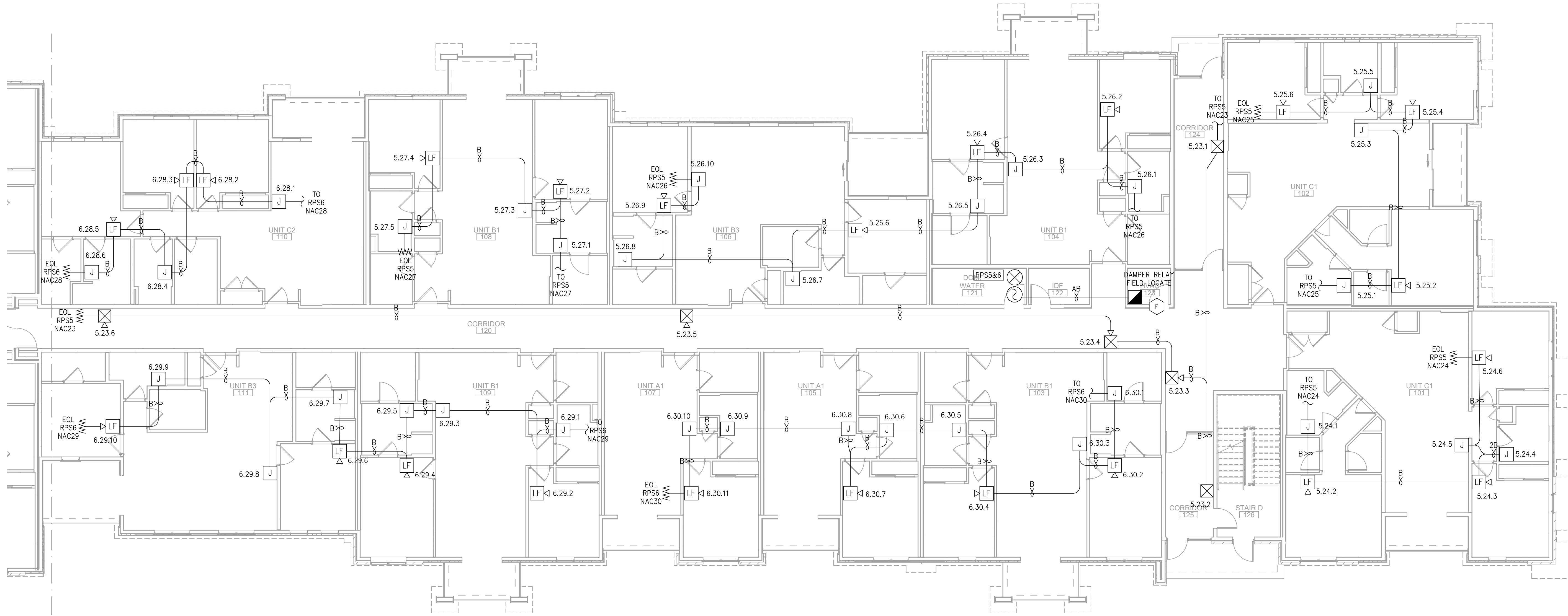
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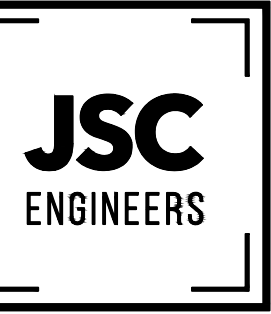
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FIRE ALARM PLAN - BUILDING 1 - FLOOR 1 - AREA C

SCALE : 1/8" = 1'-0"

1



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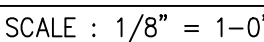
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SHEET:

FA103

FIRE ALARM PLANS

FA104



FIRE ALARM PLANS

FA105



SCALE : $1/8'' = 1'-0''$

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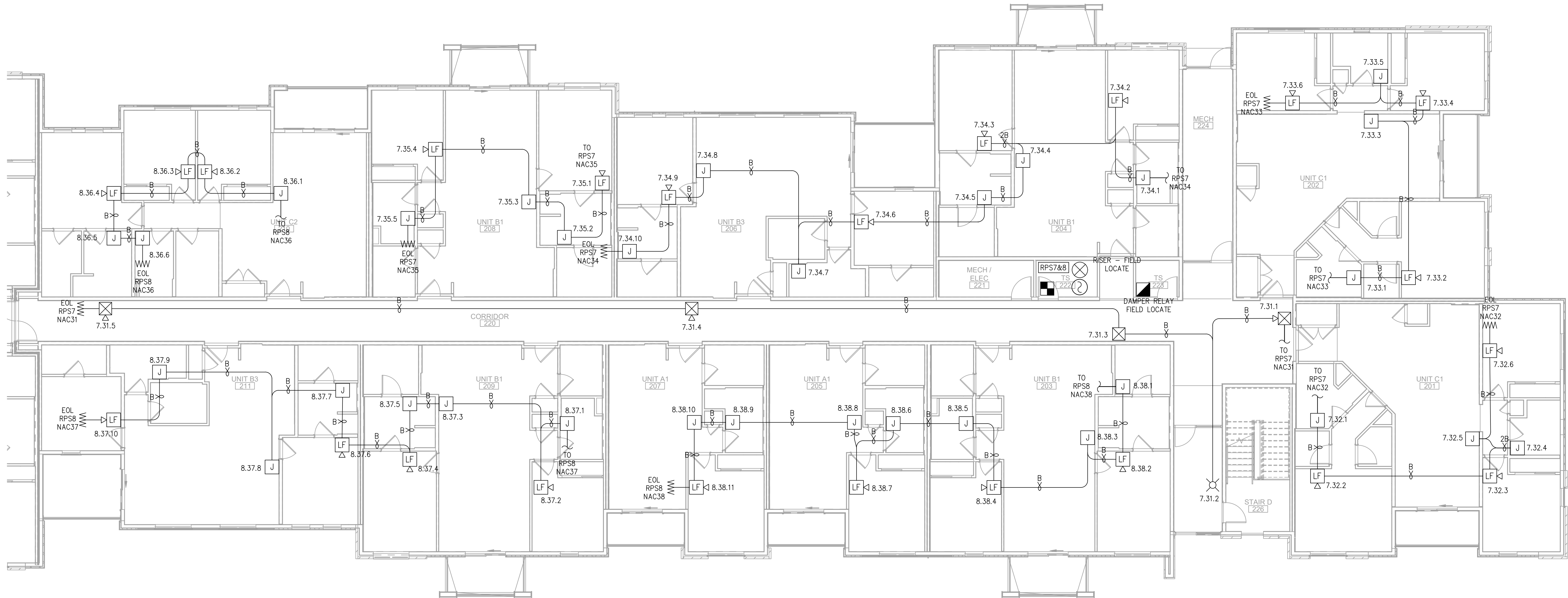
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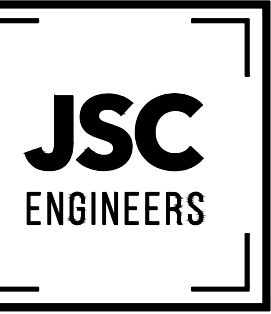
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FIRE ALARM PLAN - BUILDING 1 - FLOOR 2 - AREA C

SCALE : 1/8" = 1'-0"

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SHEET:

FA106

FA107



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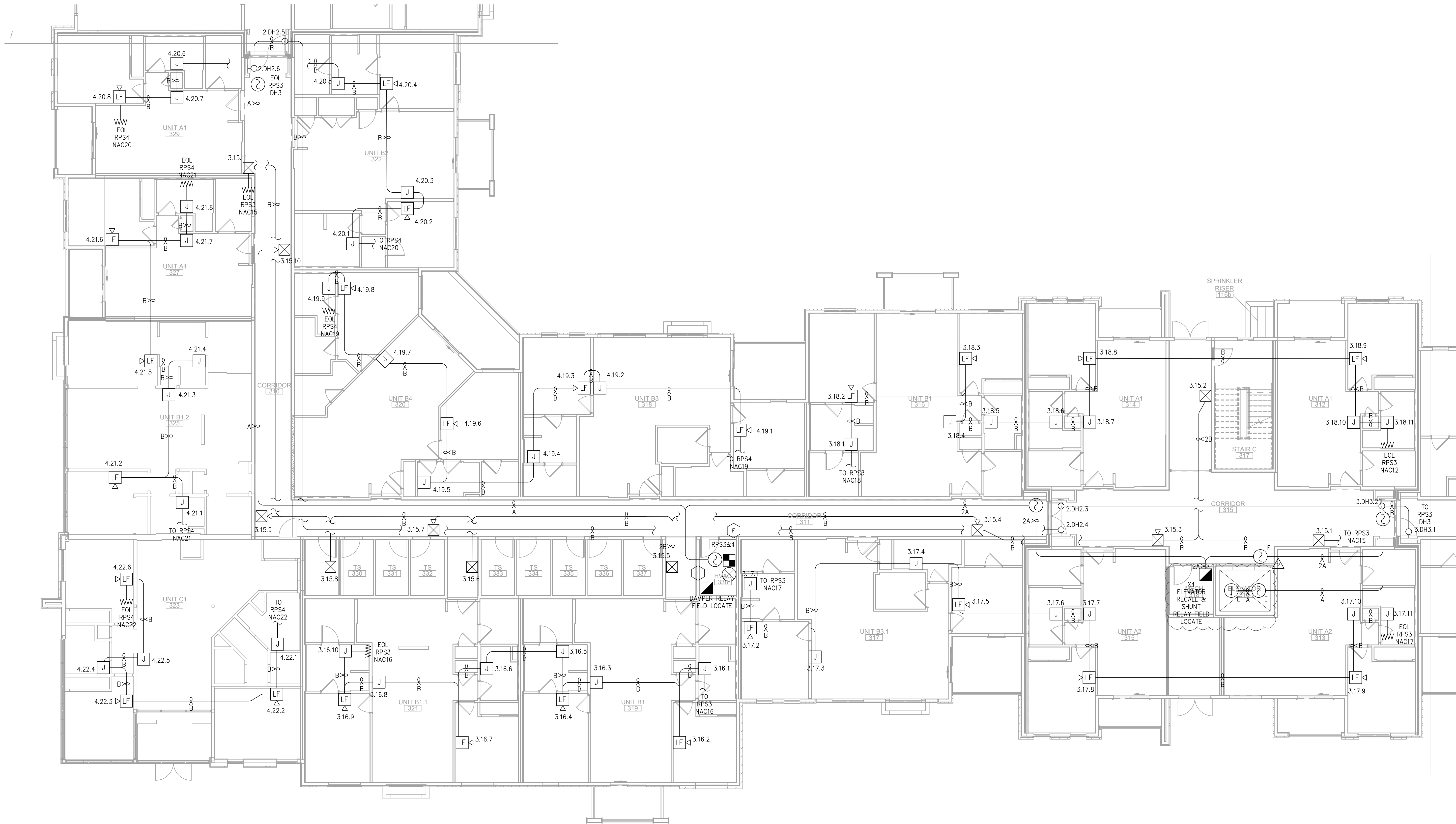
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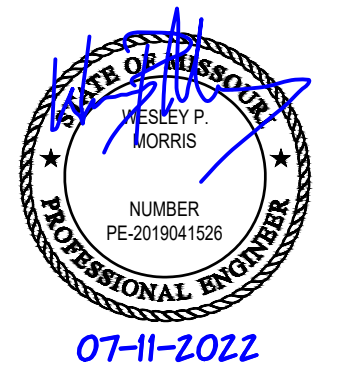
FIRE ALARM PLAN - BUILDING 1 - FLOOR 3 - AREA B

SCALE : 1/8" = 1'-0"

1

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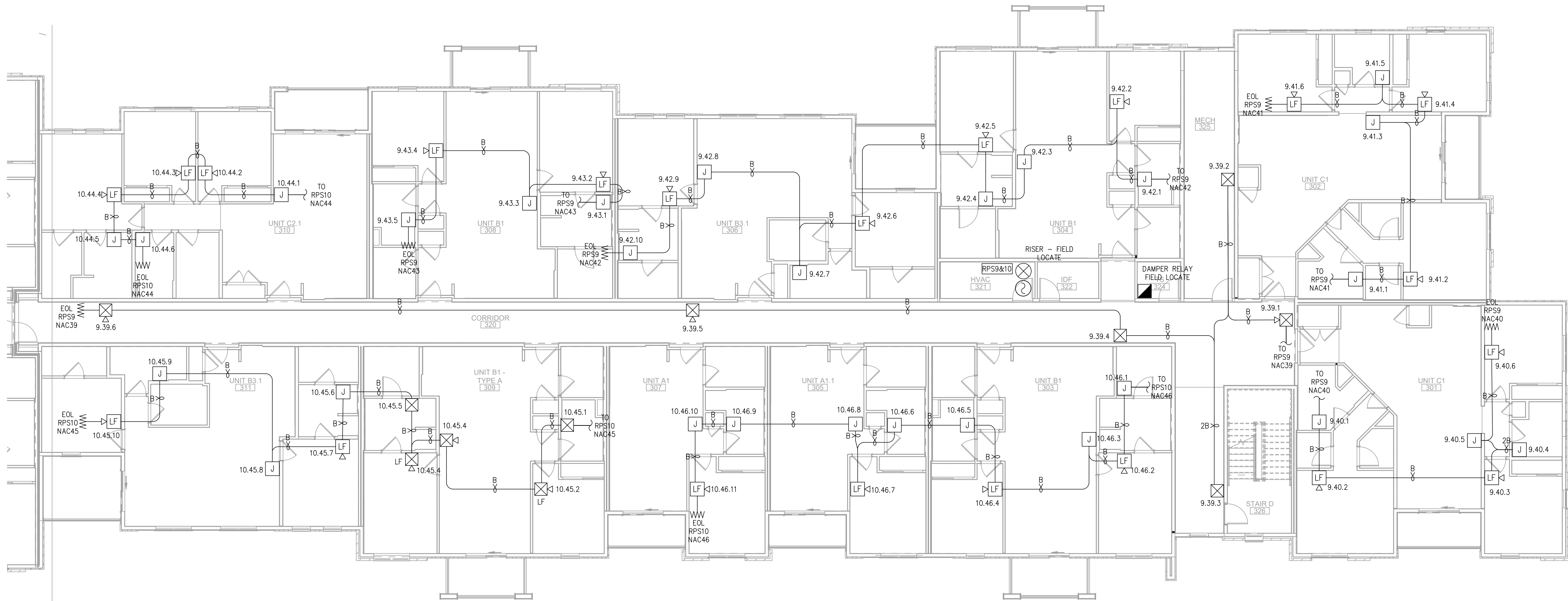
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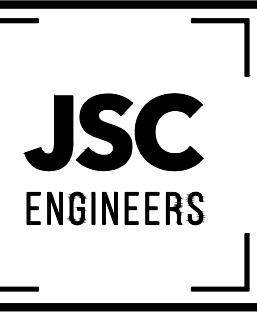
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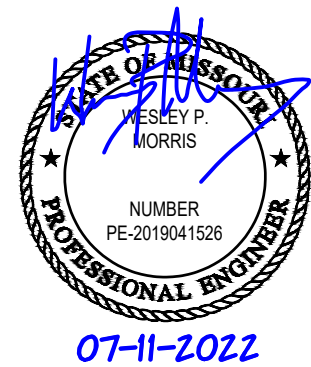
FIRE ALARM PLAN - BUILDING 1 - FLOOR 3 - AREA C

SCALE : 1/8" = 1'-0"

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FA109

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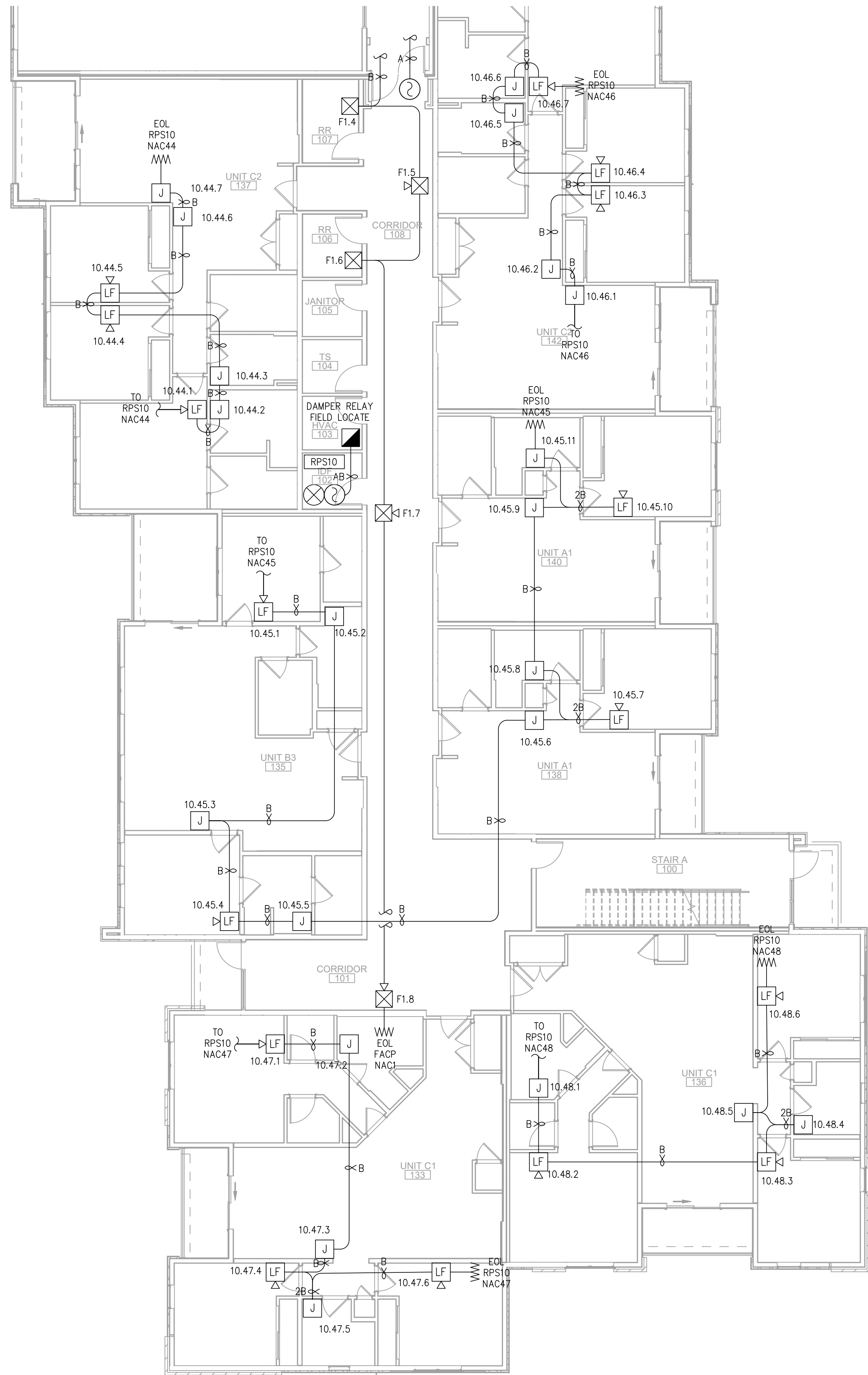
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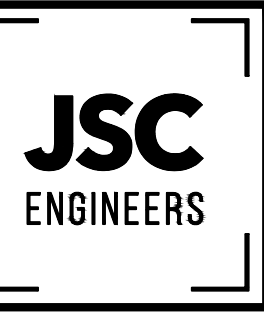
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 1 - AREA A

SCALE : 1/8" = 1'-0"

1



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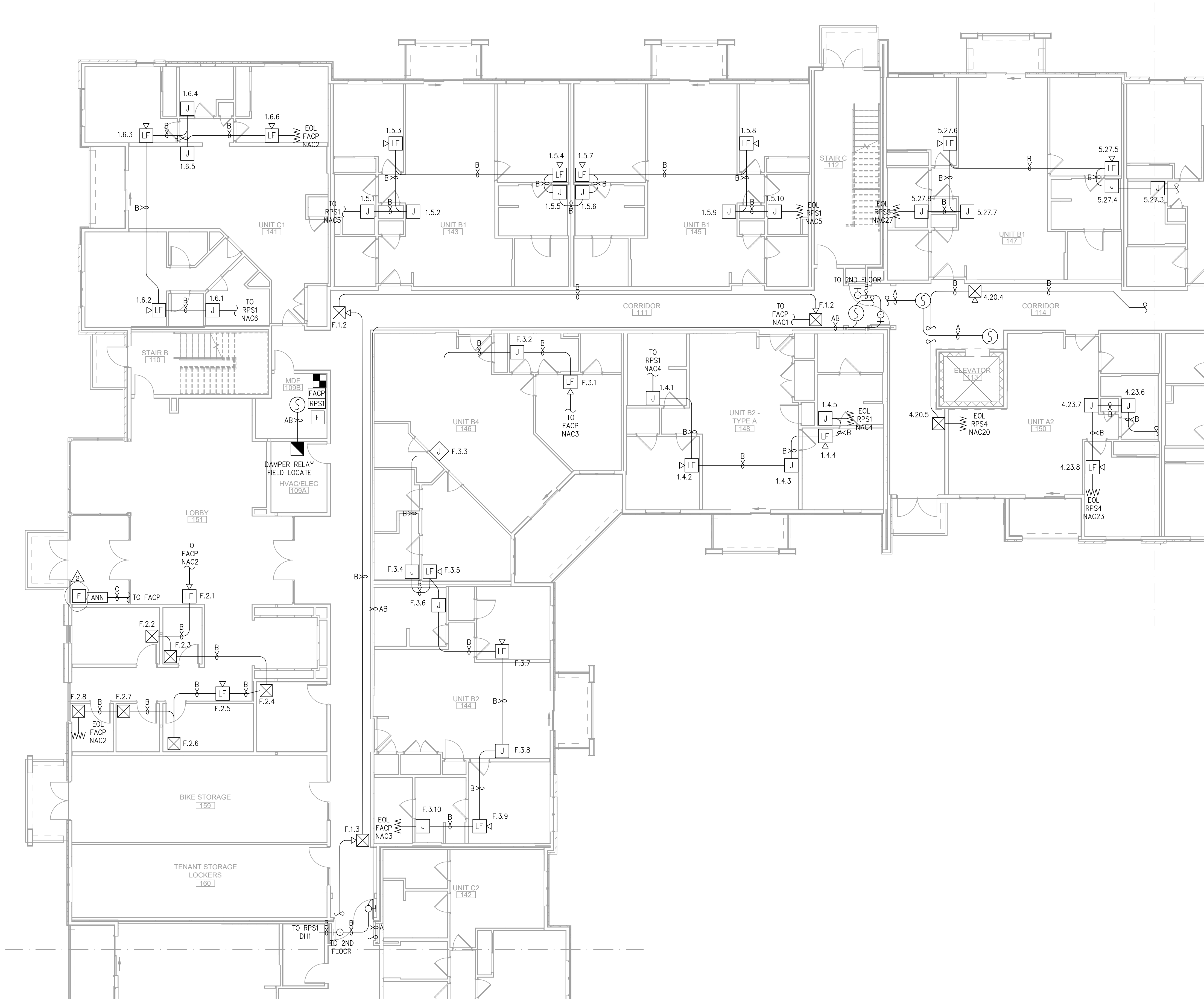
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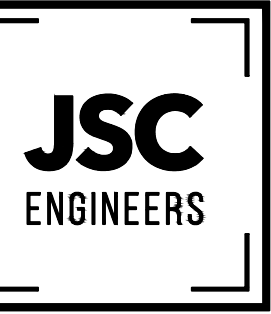
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 1 - AREA B

SCALE : 1/8" = 1'-0"

1



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FA111

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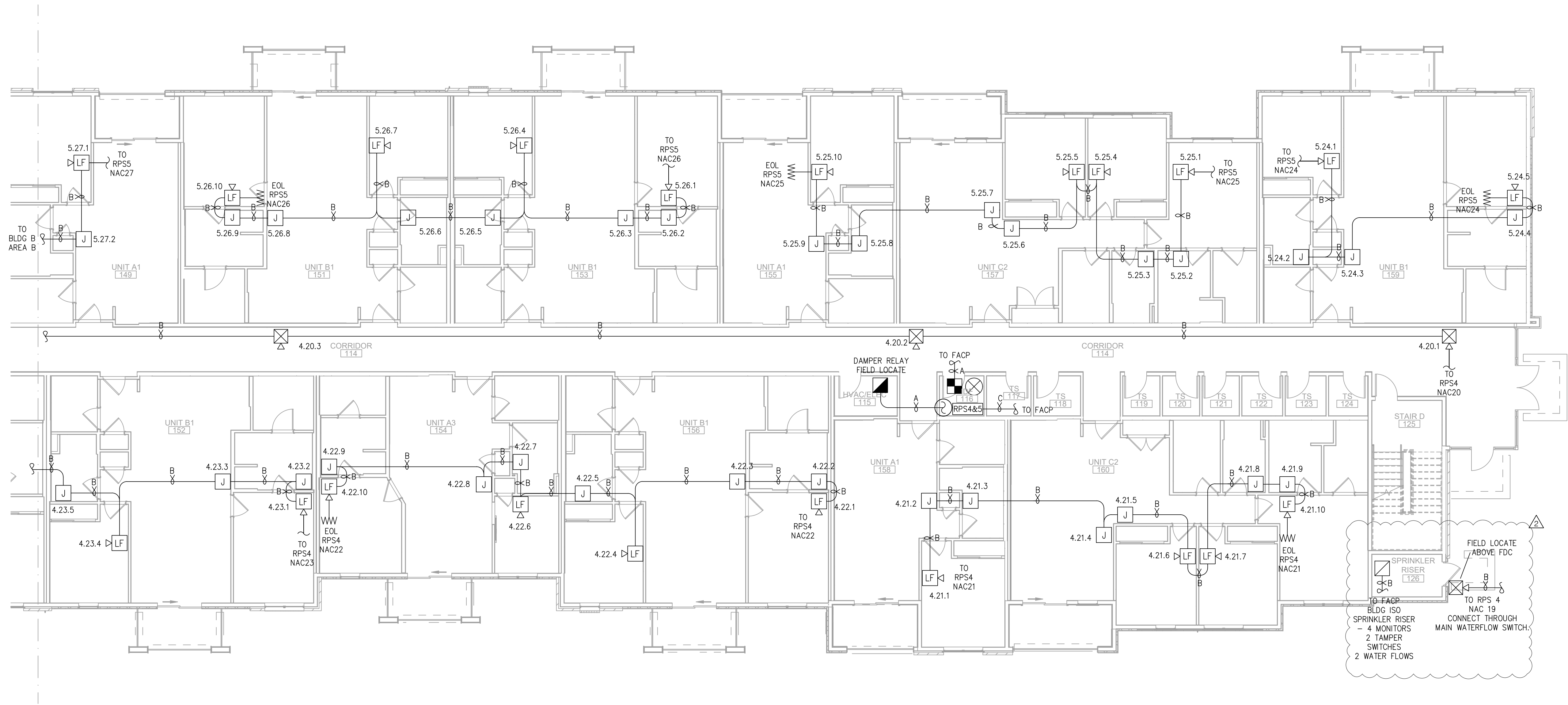
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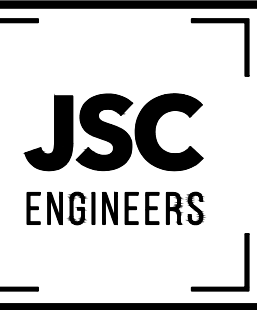
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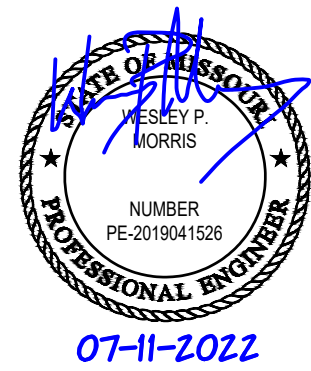
FIRE ALARM PLAN - BUILDING 2 - FLOOR 1 - AREA C

SCALE : 1/8" = 1'-0"

1



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FA112

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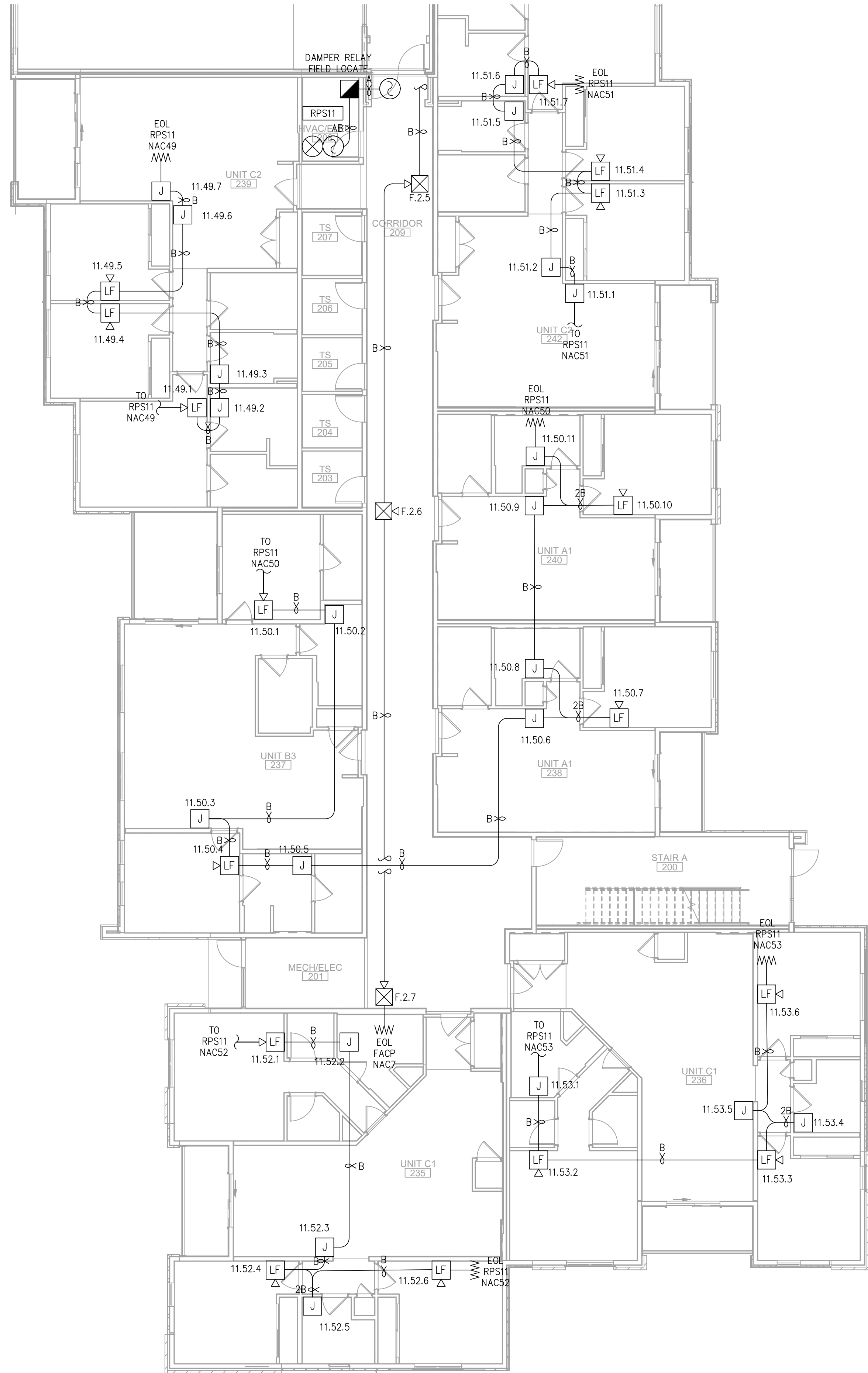
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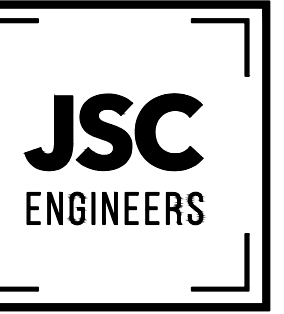
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 2 - AREA A

SCALE : 1/8" = 1'-0"

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FA113

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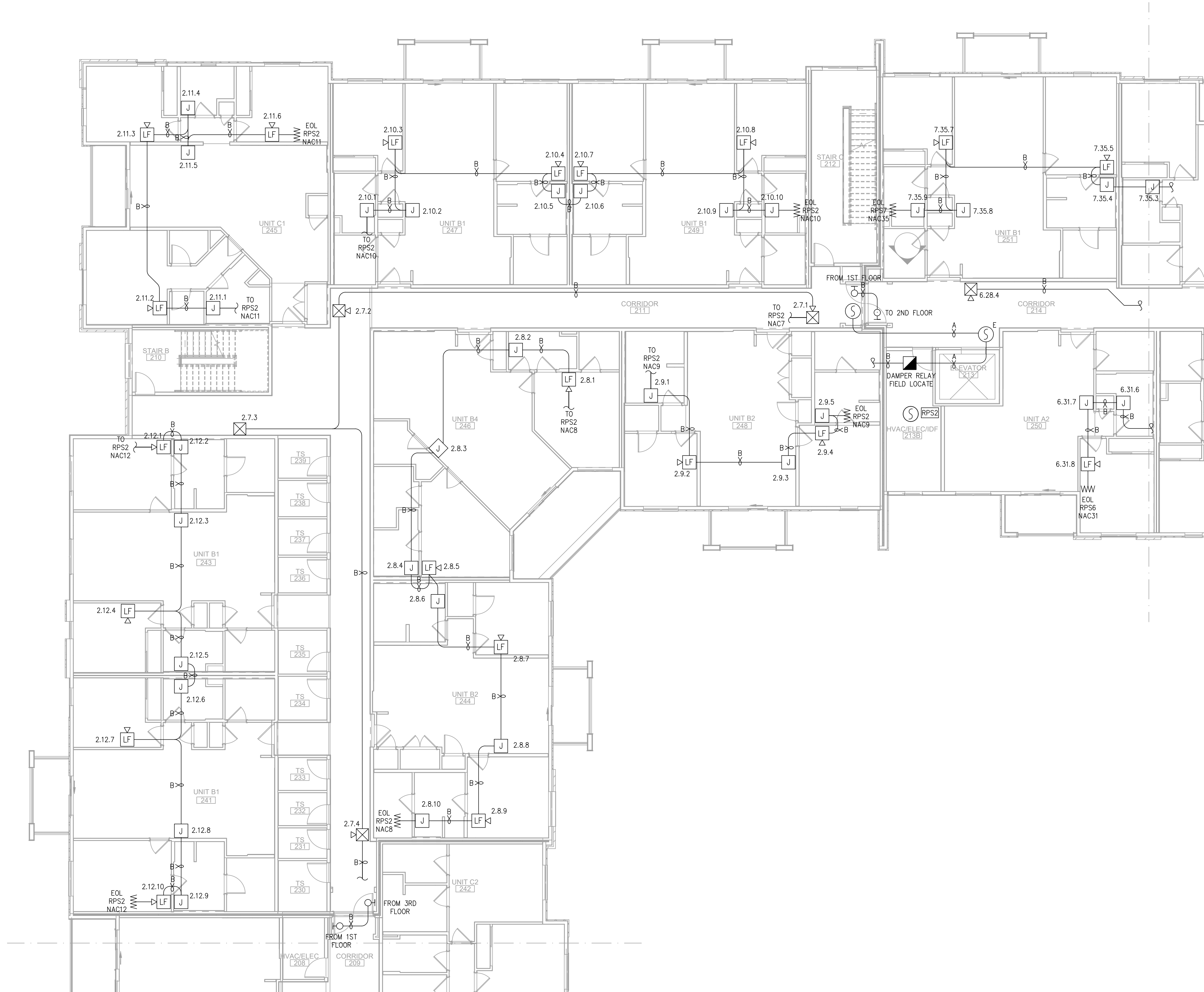
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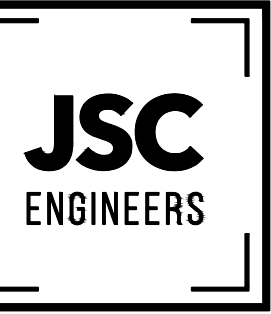
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 2 - AREA B

SCALE : 1/8" = 1'-0"

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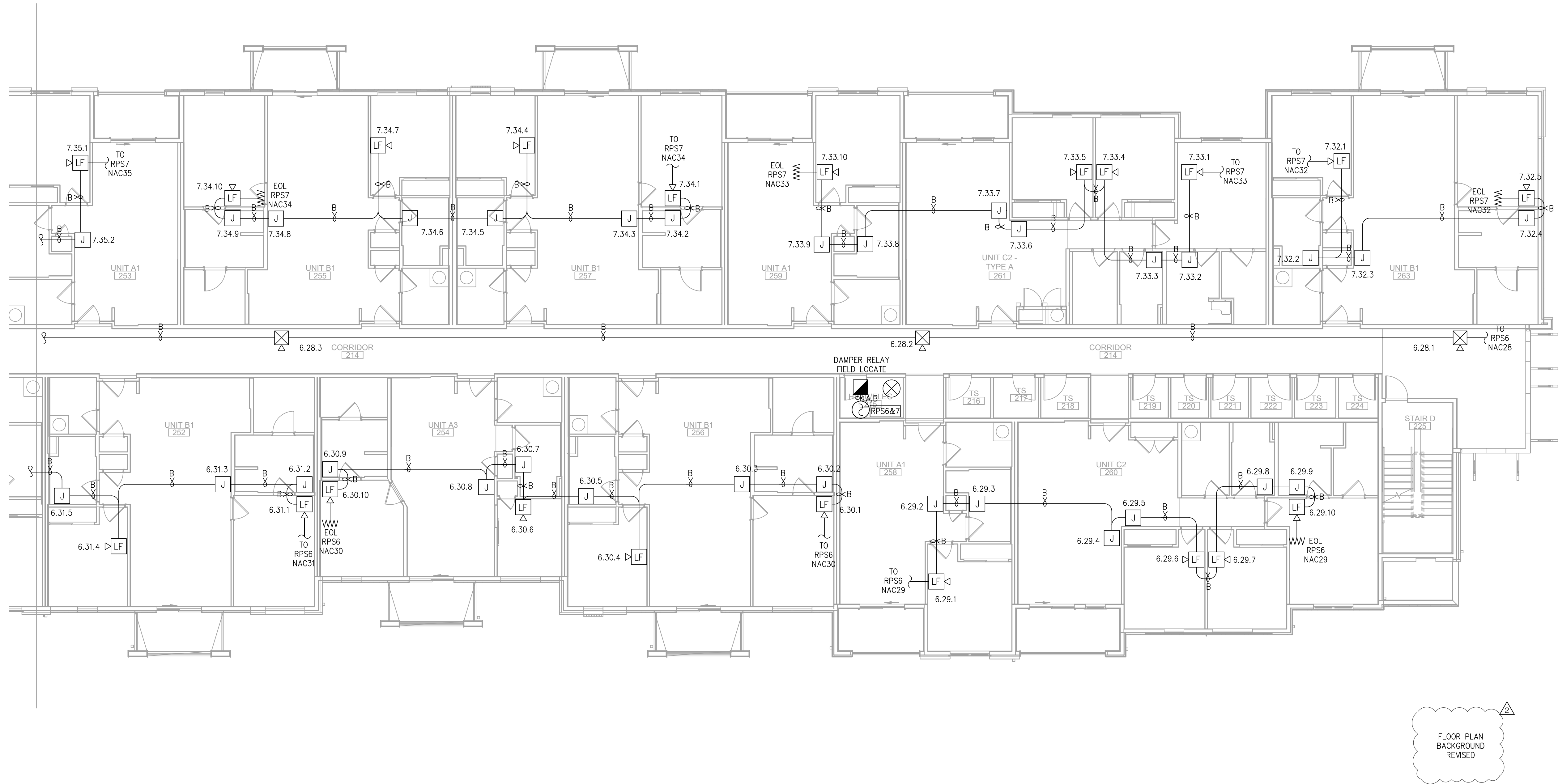
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FA114

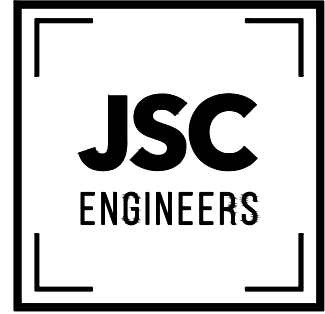
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 2 - AREA C
SCALE : 1/8" = 1'-0"

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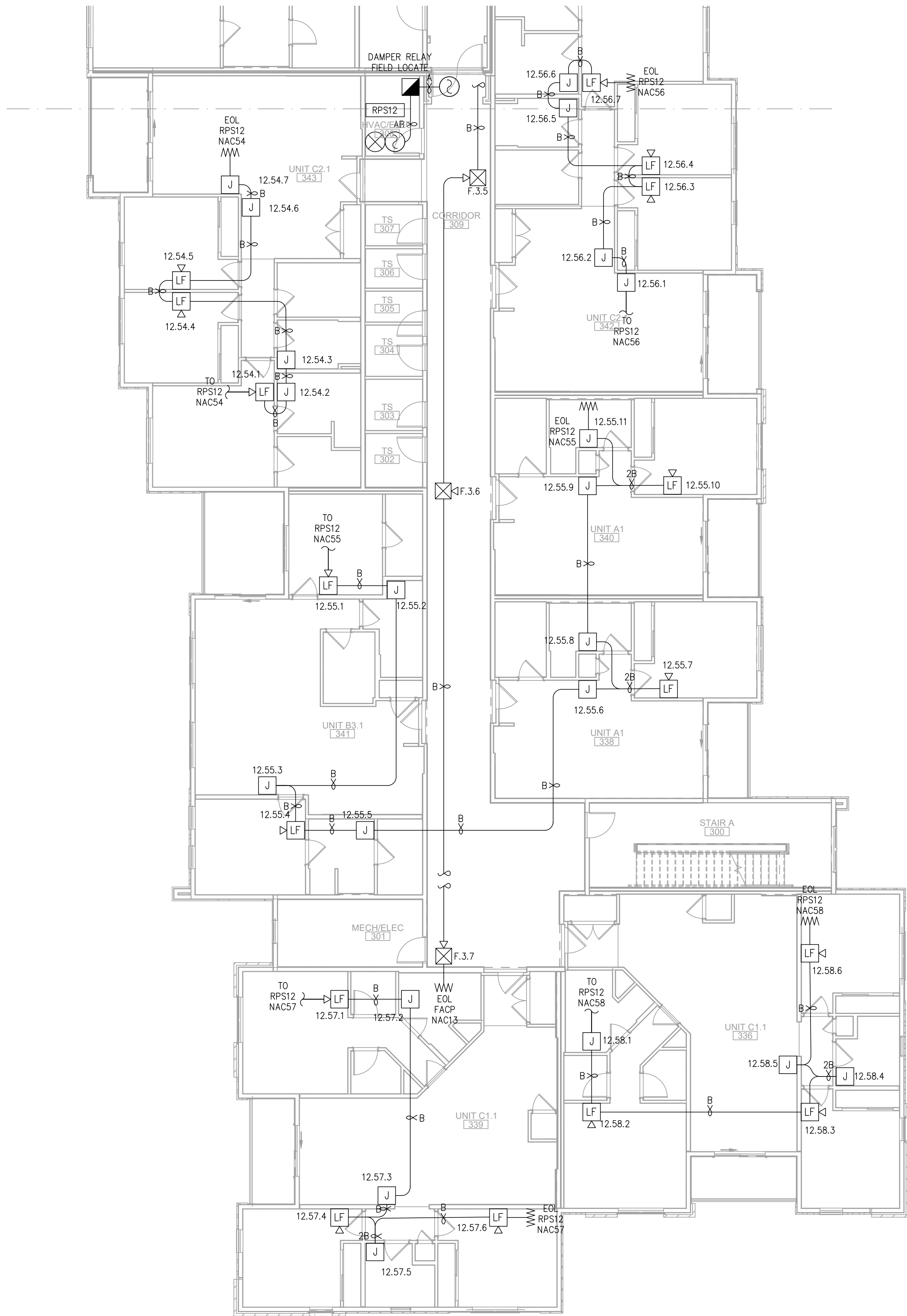
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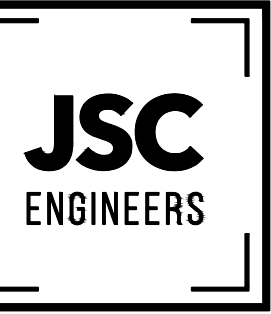
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 3 - AREA A

SCALE : 1/8" = 1'-0"

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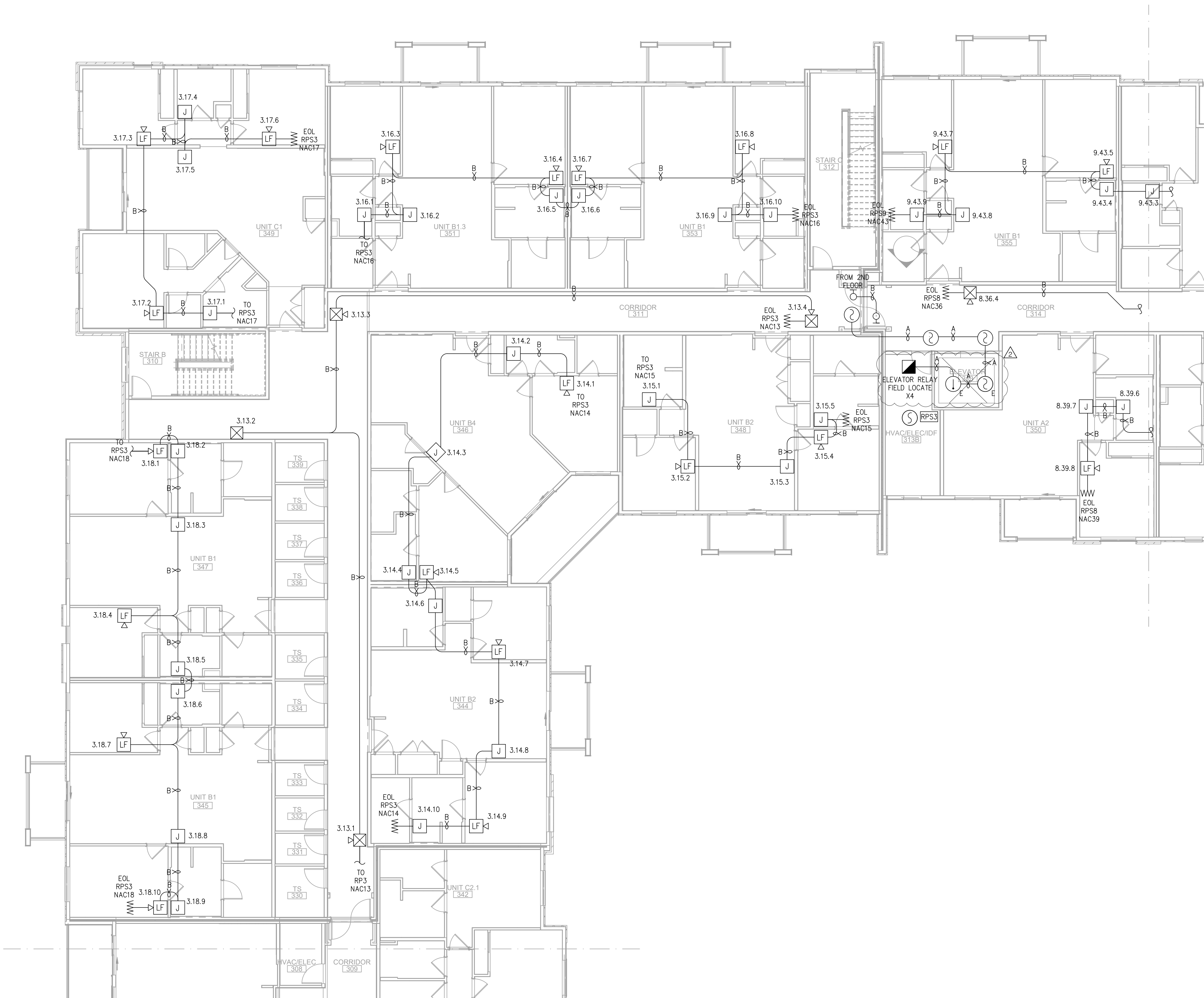
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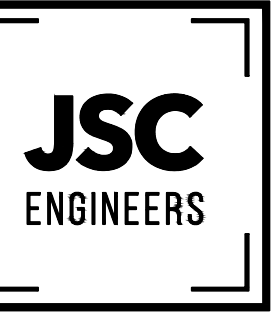
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FIRE ALARM PLAN - BUILDING 2 - FLOOR 3 - AREA B

SCALE : 1/8" = 1'-0"

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FA117

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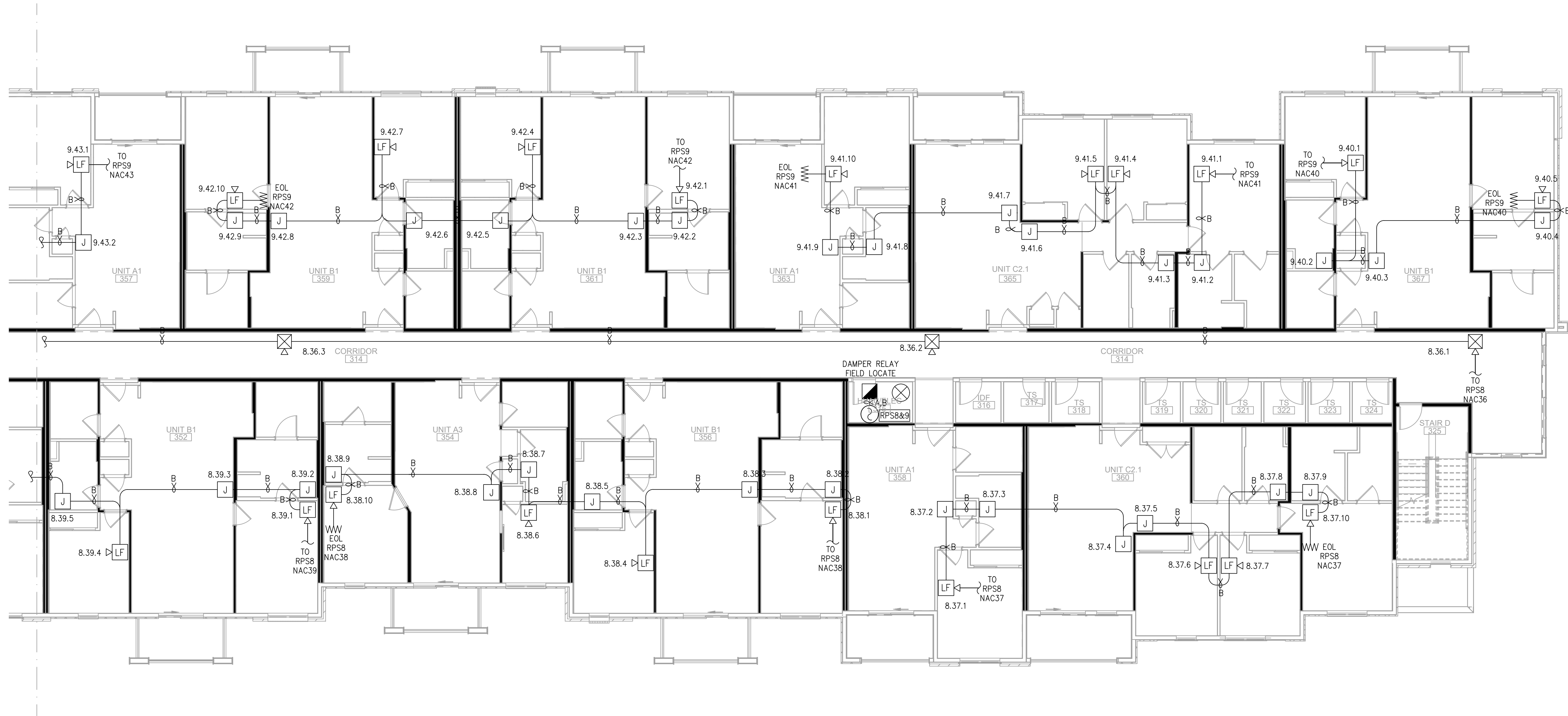
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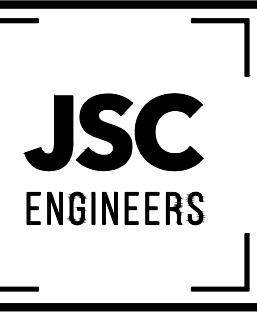
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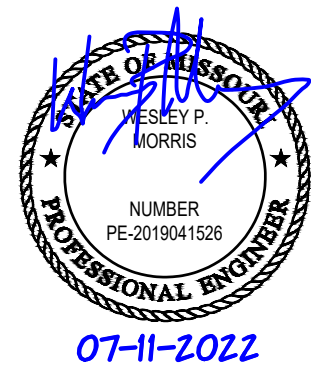
FIRE ALARM PLAN - BUILDING 2 - FLOOR 3 - AREA C

SCALE : 1/8" = 1'-0"

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FA118

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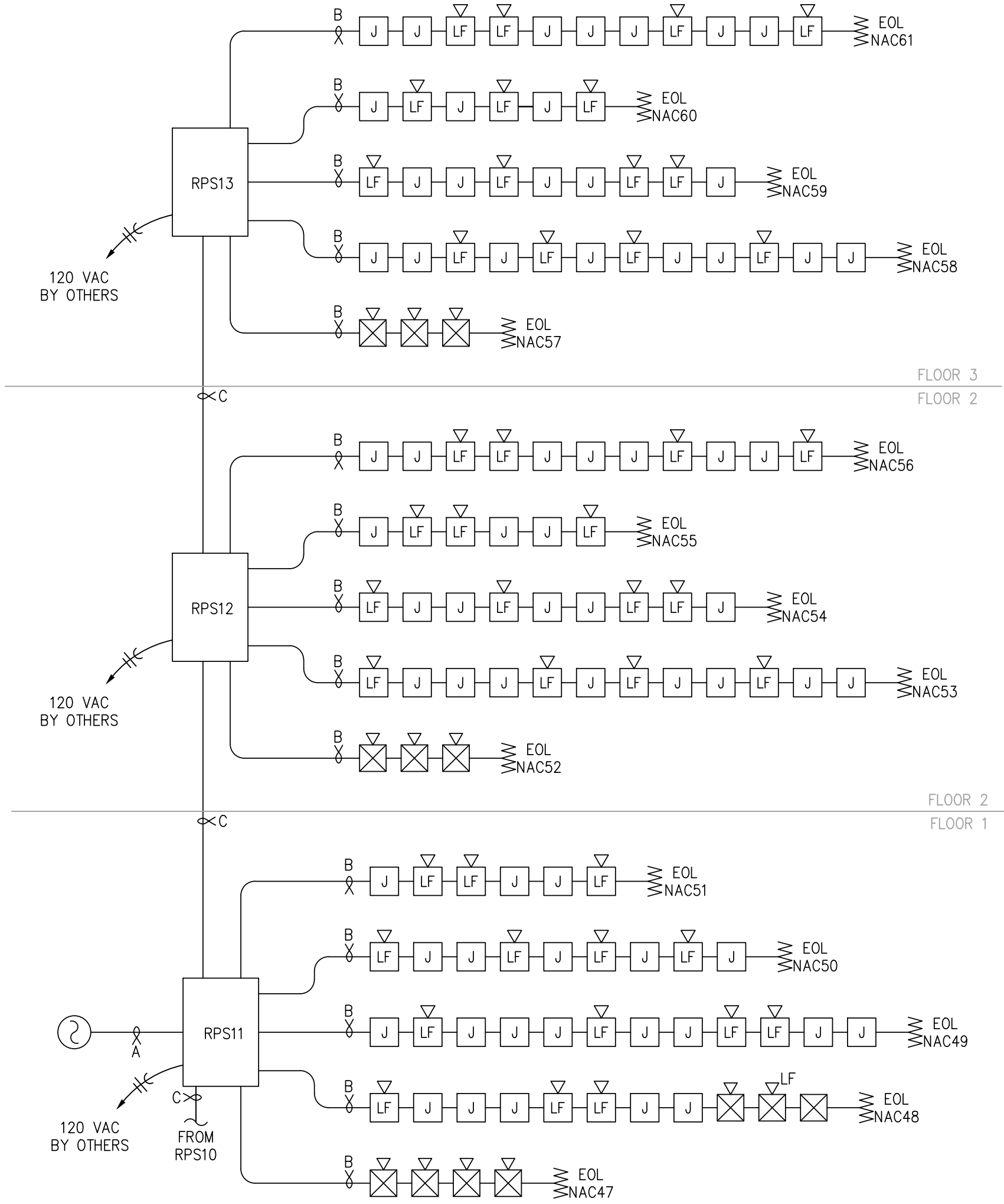
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ALL 120VAC SMOKE ALARMS PROVIDED BY OTHERS
AND SHOWN ON THE ELECTRICAL DRAWINGS.

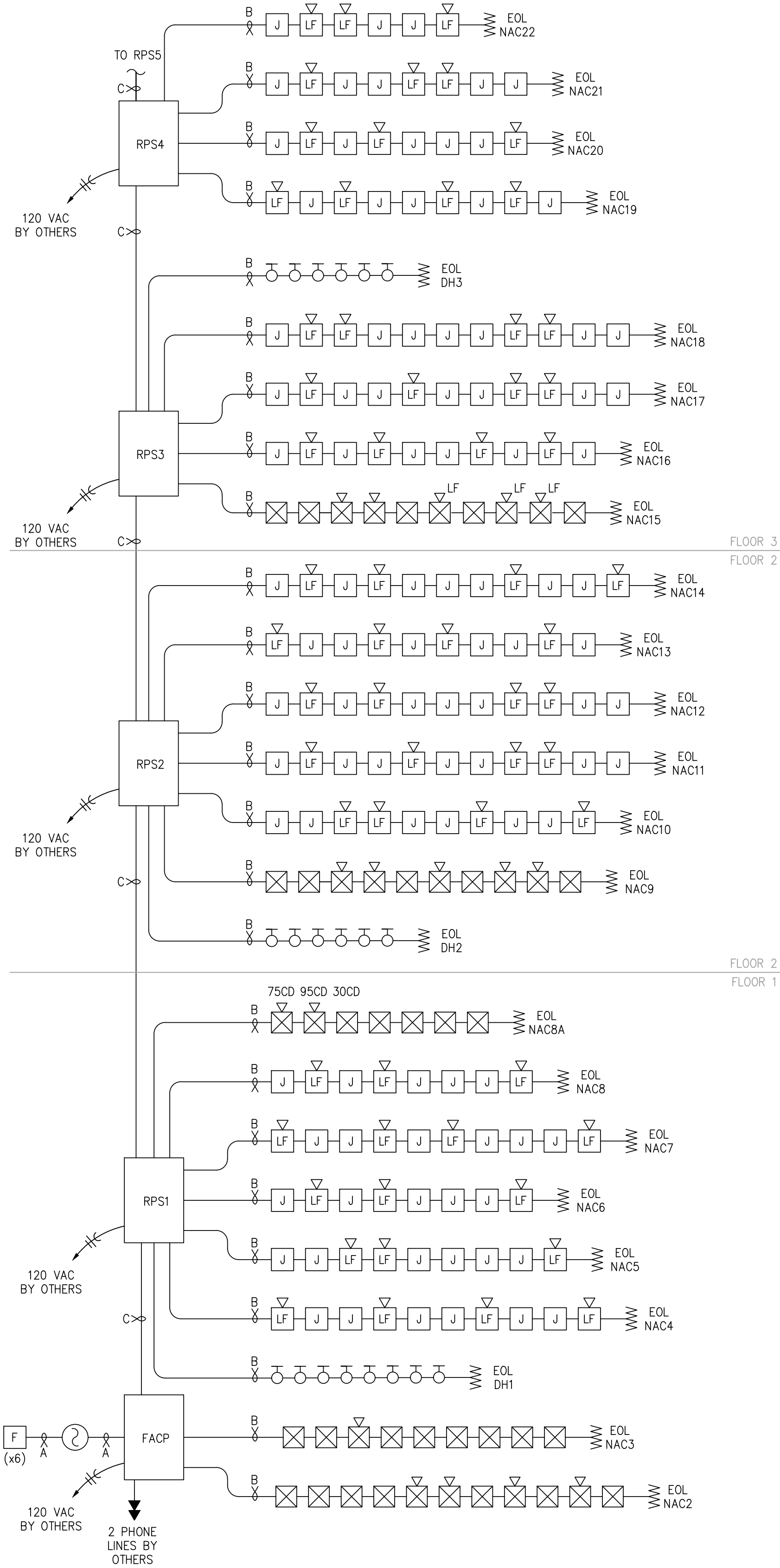


RISER - BUILDING 1 - AREA A

SCALE : N/A

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ALL 120VAC SMOKE ALARMS PROVIDED BY OTHERS
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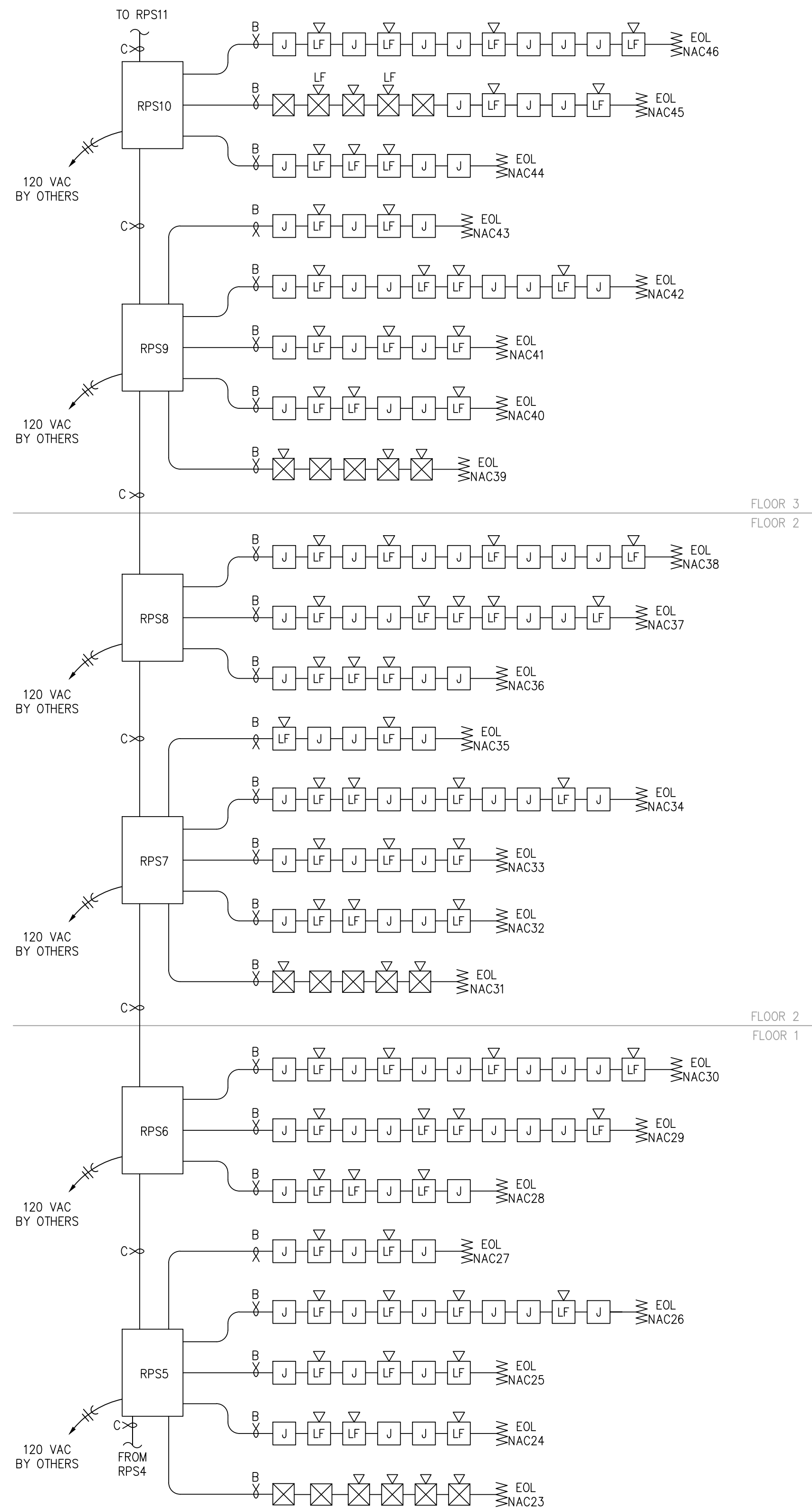


RISER - BUILDING 1 - AREA B

SCALE : N/A

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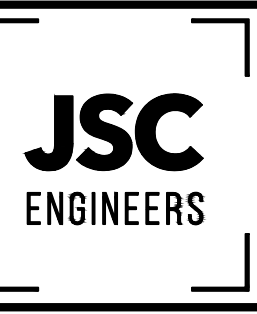
ALL 120VAC SMOKE ALARMS PROVIDED BY OTHERS
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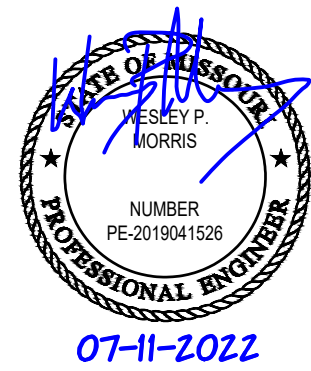
RISER - BUILDING 1 - AREA C

SCALE : N/A

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MO COA NO. 2012000786 / KS COA NO. E-2818
1925 CENTRAL ST. SUITE #201
KANSAS CITY, MO 64108
phone: (816) 272-8289
email: jsmothers@jscengineers.com



FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

PROJECT: **SIGNATURE AT PRYOR II**
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

REVISIONS:	DATE	DESCRIPTION
1	05-31-22	PLANCHICK COMMENTS
2	07-08-22	PLANCHICK COMMENTS
3		
4		
5		

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JSC Engineers

ISSUED:

PERMIT

SHEET TITLE:

FIRE ALARM
RISERS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

FA201

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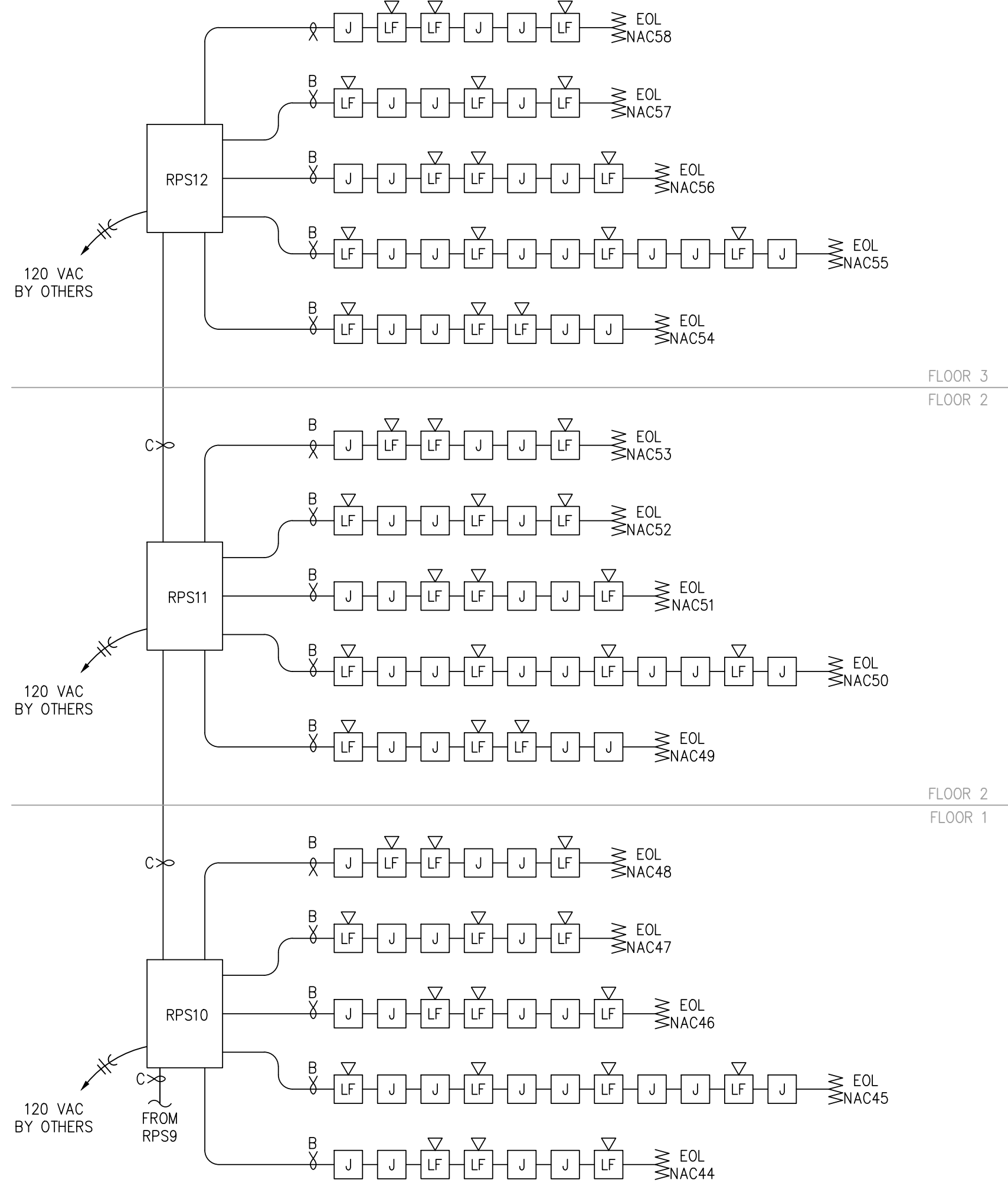
D

C

B

A

ALL 120VAC SMOKE ALARMS PROVIDED BY OTHERS
AND SHOWN ON THE ELECTRICAL DRAWINGS.

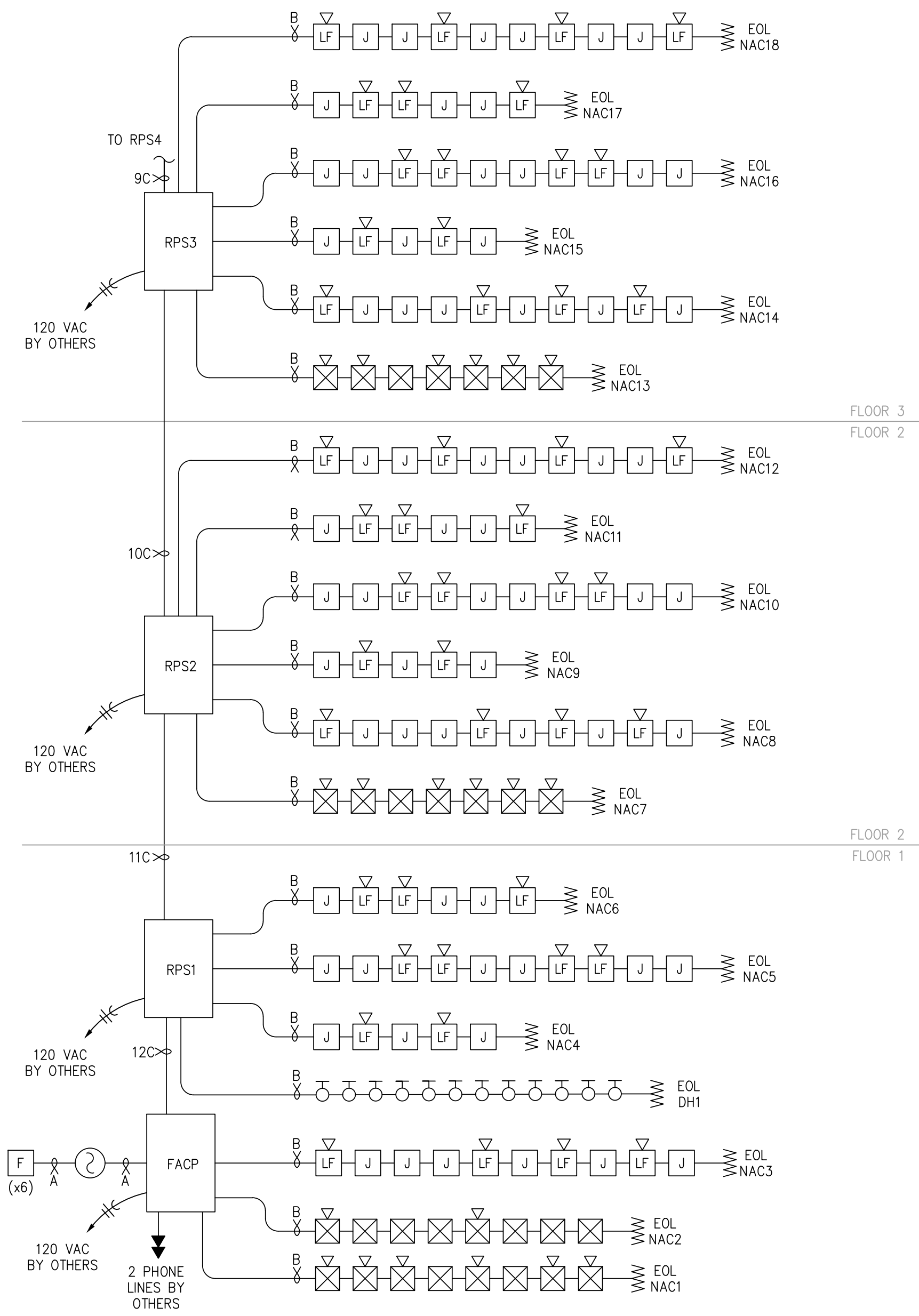


RISER - BUILDING 2 - AREA A

SCALE : N/A

3

ALL 120VAC SMOKE ALARMS PROVIDED BY OTHERS
AND SHOWN ON THE ELECTRICAL DRAWINGS.

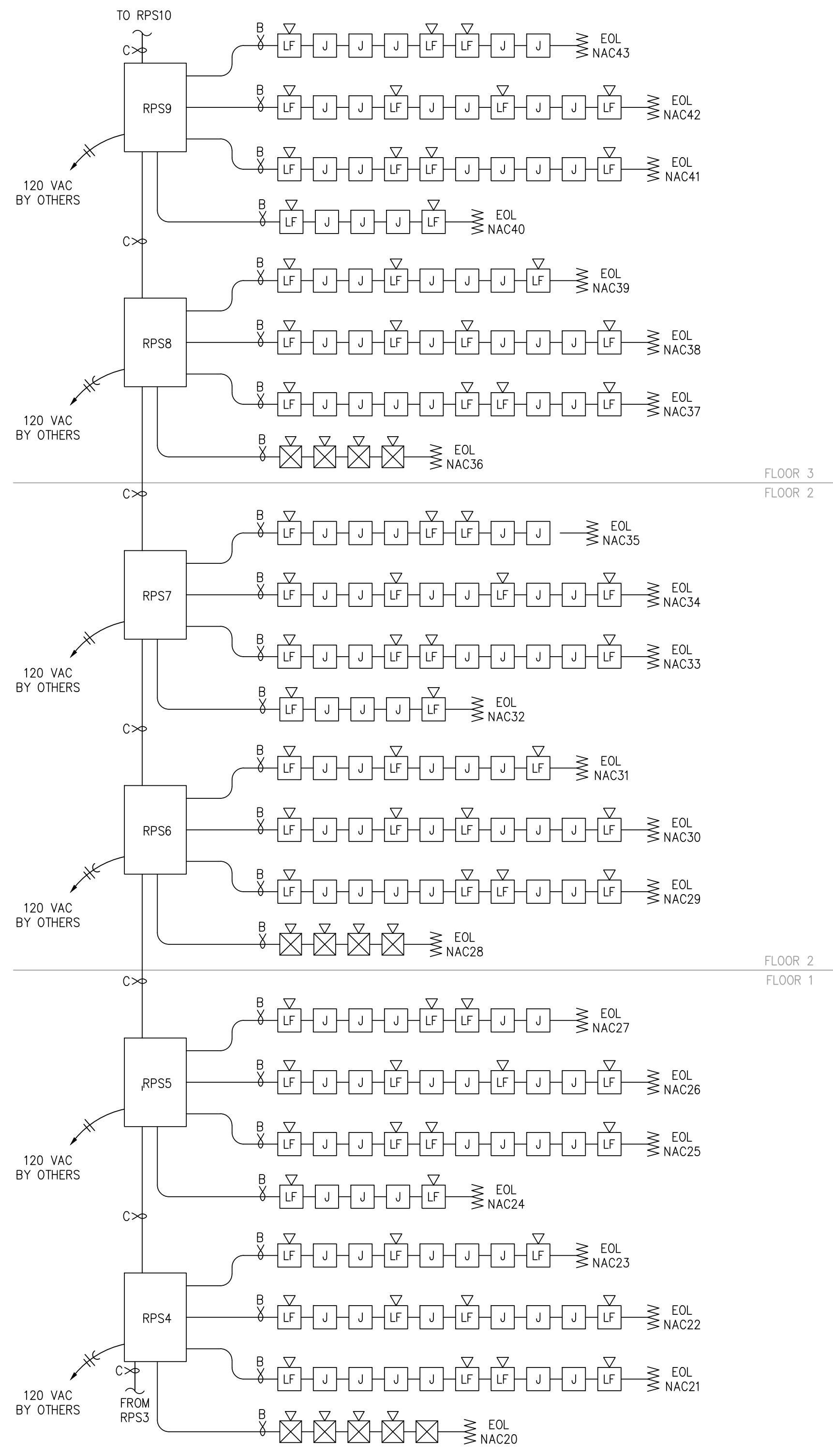


RISER - BUILDING 2 - AREA B

SCALE : N/A

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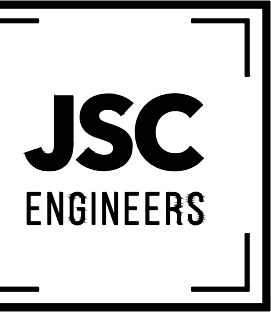
ALL 120VAC SMOKE ALARMS PROVIDED BY OTHERS
AND SHOWN ON THE ELECTRICAL DRAWINGS.



RISER - BUILDING 2 - AREA C

SCALE : N/A

1



MO COA NO. 201900786 / KS COA NO. E-2818
1925 CENTRAL ST. SUITE #201
KANSAS CITY, MO 64108
phone: (816) 272-8289
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FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

PROJECT: **SIGNATURE AT PRYOR II**
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

REVISIONS:	DATE / DESCRIPTION
1	05-31-22/PLANCHCK COMMENTS
2	07-08-22/PLANCHCK COMMENTS
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5	

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ISSUED:

PERMIT

SHEET TITLE:

FIRE ALARM
PLANS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

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Honeywell the power of connected			IFP-300 Battery Calculation FACP											
Farenhyt Series			Secondary Power Source Requirements											
			Standby Current (amps)				Secondary Alarm Current (amps)							
Device Type	Qty	Current Draw	Total		Qty	Current Draw	Total							
1. Control Panel														
IFP-300 Control Panel	1	x	0.190000	=	0.190000	1	x	0.250000	=	0.250000				
2. Addressable SLC Devices														
IDP-PHOTO	0	x	0.000300	=		0	x	0.000300	=					
IDP-PHOTO-T	0	x	0.000300	=		0	x	0.000300	=					
IDP-PHOTOR	0	x	0.000300	=		0	x	0.000300	=					
IDP-ION	0	x	0.000300	=		0	x	0.000300	=					
IDP-HEAT	0	x	0.000300	=		0	x	0.000300	=					
IDP-HEAT-HT	0	x	0.000300	=		0	x	0.000300	=					
IDP-HEAT-ROR	0	x	0.000300	=		0	x	0.000300	=					
IDP-BEAM	0	x	0.002000	=		0	x	0.002000	=					
IDP-BEAM-T	0	x	0.002000	=		0	x	0.002000	=					
IDP-FIRE-CO	0	x	0.030000	=		0	x	0.007200	=					
IDP-ACCLIMATE	0	x	0.000300	=		0	x	0.000300	=					
3. Addressable SLC Detectors														
IDP-CONTROL	0	x	0.000375	=		0	x	0.000375	=					
IDP-MONITOR	5	x	0.000375	=	0.001875	5	x	0.000375	=	0.001875				
IDP-MINIMON	0	x	0.000375	=		0	x	0.000375	=					
IDP-PULL-SA	0	x	0.000375	=		0	x	0.000375	=					
IDP-PULL-DA	1	x	0.000375	=	0.000375	1	x	0.000375	=	0.000375				
IDP-MONITOR-2	0	x	0.000750	=		0	x	0.000750	=					
IDP-MONITOR-10	0	x	0.003500	=		0	x	0.003500	=					
IDP-RELAY-6	0	x	0.001450	=		0	x	0.001450	=					
IDP-CONTROL-6	0	x	0.002250	=		0	x	0.002250	=					
IDP-RELAY	13	x	0.000255	=	0.003315	13	x	0.000255	=	0.003315				
IDP-RELAYMON-2	0	x	0.001300	=		0	x	0.024000	=					
IDP-ZONE	0	x	0.002000	=		0	x	0.002000	=					
IDP-ZONE-6	0	x	0.002000	=		0	x	0.002000	=					
4. SLC Accessories														
B200S	0	x	0.000300	=		0	x	0.000300	=					
B200S-LF	0	x	0.003000	=		0	x	0.003000	=					
B200SR	0	x	0.000300	=		0	x	0.000300	=					
B200SR-LF	0	x	0.001000	=		0	x	0.125000	=					
B224RB	0	x	0.000500	=		0	x	0.000500	=					
RTS151KEY	0	x	0.000000	=		0	x	0.007500	=					
RA100Z	0	x	0.000000	=		0	x	0.010000	=					
5. Auxiliary Power Draw - SLC Devices														
IDP-CONTROL (Aux. Power)	0	x	0.001700	=		0	x	0.007000	=					
IDP-CONTROL-6 (Aux. Power)	0	x	0.008000	=		0	x	0.020000	=					
IDP-ZONE (Aux. Power)	0	x	0.012000	=		0	x	0.080000	=					
IDP-ZONE-6 (Aux. Power)	0	x	0.050000	=		0	x	0.270000	=					
B200S (Aux. Power)	0	x	0.000500	=		0	x	0.035000	=					
B200S-LF (Aux. Power)	0	x	0.000550	=		0	x	0.140000	=					
B200SR (Aux. Power)	0	x	0.000500	=		0	x	0.035000	=					
B200SR-LF (Aux. Power)	0	x	0.001000	=		0	x	0.125000	=					
6. SLC Isolator Devices														
IDP-ISG	5	x	0.000450	=	0.002250	5	x	0.000450	=	0.002250				
B224RB1	0	x	0.000500	=		0	x	0.000500	=					
7. Accessory Modules														
RA-2000	0	x	0.025000	=		0	x	0.050000	=					
RA-2000GRAY	0	x	0.025000	=		0	x	0.050000	=					
6815	0	x	0.078000	=		0	x	0.078000	=					
RA-100	0	x	0.020000	=		0	x	0.025000	=					
RA-1000	1	x	0.020000	=	0.020000	1	x	0.025000	=	0.025000				
RA-1000R	0	x	0.020000	=		0	x	0.025000	=					
5924	0	x	0.045000	=		0	x	0.045000	=					
5486	0	x	0.010000	=		0	x	0.010000	=					
RPS-1000	2	x	0.010000	=	0.020000	2	x	0.010000	=	0.020000				
5865-4	0	x	0.035000	=		0	x	0.145000	=					
5865-3	0	x	0.035000	=		0	x	0.145000	=					
5880	0	x	0.035000	=		0	x	0.200000	=					
5883	0	x	0.000000	=		0	x	0.220000	=					
8. Network Cards														
SK-NIC	1	x	0.021000	=	0.021000	1	x	0.021000	=	0.021000				
SK-FML	0	x	0.053000	=		0	x	0.053000	=					
SK-FSL	1	x	0.079000	=	0.079000	1	x	0.079000	=	0.079000				
9. Auxiliary Devices														
IPDACT-2	0	x	0.093000	=		0	x	0.136000	=					
IPDACT-2UD	0	x	0.098000	=		0	x	0.155000	=					
CELL-MOD	1	x	0.055000	=	0.055000	1	x	0.100000	=	0.100000				
CELL-CAB-SK	0	x	0.055000	=		0	x	0.100000	=					
10. Miscellaneous Devices														
Conventional Detectors	0	x	0.000000	=		0	x	0.000000	=					
R-10E	10	x	0.020000	=	0.200000	10	x	0.020000	=	0.200000				
DPH24120FPC	1	x	0.020000	=	0.020000	1	x	0.000000	=	0.000000				
IDP-HEAT-W	1	x	0.000300	=	0.000300	1	x	0.000000	=	0.000000				
IDP-PHOTO-W	21	x	0.000300	=	0.006300	21	x	0.000000	=	0.000000				
Miscellaneous Device 5	0	x	0.000000	=		0	x	0.000000	=					
11. Output Circuits														
NAC 1			0.000000	=				0.221000	=	0.221000				
NAC 2			0.000000	=				0.593000	=	0.593000				
NAC 3			0.000000	=				0.974000	=	0.974000				
Constant-Power 1			0.000000	=				0.000000	=					
Total Standby Load					0.619415	Total Alarm Load					2.490811			

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PSN-106
Battery & Voltage Drop
Calculations

Project Name: The Signature
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2022
NAC Source Voltage: 20.4

Model #: PSN-106
Panel ID: RPS-1
Location: MDP Room
Max Panel Current (amps): 10
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submit.

Qty	Panel Part #	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	PSN-106	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:			0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)	Class	Standby (amps) Total	Alarm (amps) Total
1 Notification NAC 4	Class B	0.00000	0.55200
2 Notification NAC 5	Class B	0.00000	0.41400
3 Notification NAC 6	Class B	0.00000	0.41400
4 Notification NAC 7	Class B	0.00000	0.55200
5 Notification NAC 8	Class B	0.00000	0.41400
6 Notification NAC 8A	Class B	0.00000	0.53000
AUX Door Holders Door Hold		0.00000	0.00000
NAC Standby:		0.00000	NAC Alarm: 2.87600

Battery Calculation Summary			Standby (amps)	Alarm (amps)
Panel Current:			0.07500	0.07500
NAC Circuit Current:			0.00000	2.87600
Total Standby:			0.07500	2.95100
Standby Hours:			24	Alarm Mins: 5
AH Required:			1.80	AH Required: 0.25
Total Combined Standby & Alarm AmperHours Required:				2.05
Efficiency Factor:				20%
Required Battery AmperHours:			2.46	
Battery AmperHours Provided:				



NAC Circuit Configuration & Voltage Drop

The Signature 1/11/2022

NAC 1			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 4

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	230	1.467	0.552	19.59	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
1						
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200

NAC 2			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 5

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	250	1.595	0.414	19.74	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400



NAC Circuit Configuration & Voltage Drop (cont'd)

The Signature 1/11/2022

NAC 3			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 6

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	220	1.404	0.414	19.82	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400

NAC 4			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 7

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	200	1.276	0.552	19.70	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200



NAC Circuit Configuration & Voltage Drop (cont'd)

The Signature 1/11/2022

NAC 5			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 8

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	250	1.595	0.414	19.74	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400

NAC 6			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 8A

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	240	1.531	0.530	19.59	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	User Defined	S S P2L 95cd Temp Low	0.000000	0.000000	0.133000	0.133000
1	User Defined	S S P2L 75 cd Temp High	0.000000	0.000000	0.119000	0.119000
1	User Defined	S S SL 30cd	0.000000	0.000000	0.063000	0.063000
5	User Defined	S S SL 15cd	0.000000	0.000000	0.043000	0.215000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.53000

AUX Power			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Usage:	Door Holders	Description:	Door Hold	

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#14 Solid	3.19	475	3.031	0.000	20.40	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
0	User Defined	DH	0.040000	0.000000	0.000000	0.000000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.00000



PSN-106
Battery & Voltage Drop
Calculations

Project Name: The Signature
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2022
NAC Source Voltage: 20.4

Model #: PSN-106
Panel ID: RPS-2
Location: 2nd Floor Mech/Elec 240
Max Panel Current (amps): 10
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submit.

Qty	Panel Part #	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	PSN-106	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:			0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)	Class	Standby (amps) Total	Alarm (amps) Total
1 Notification NAC 9	Class B	0.00000	0.43700
2 Notification NAC 10	Class B	0.00000	0.55200
3 Notification NAC 11	Class B	0.00000	0.55200
4 Notification NAC 12	Class B	0.00000	0.55200
5 Notification NAC 13	Class B	0.00000	0.55200
6 Notification NAC 14	Class B	0.00000	0.55200
AUX Door Holders Door Hold		0.00000	0.00000
NAC Standby:		0.00000	NAC Alarm: 3.19700

Battery Calculation Summary			Standby (amps)	Alarm (amps)
Panel Current:			0.07500	0.07500
NAC Circuit Current:			0.00000	3.19700
Total Standby:			0.07500	3.27200
Standby Hours:			24	Alarm Mins: 5
AH Required:			1.80	AH Required: 0.28
Total Combined Standby & Alarm AmperHours Required:				2.08
Efficiency Factor:				20%
Required Battery AmperHours:			2.50	
Battery AmperHours Provided:				7



NAC Circuit Configuration & Voltage Drop

The Signature 1/11/2022

NAC 1			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 9

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	500	3.190	0.437	19.01	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S S SL 15cd	0.000000	0.000000	0.043000	0.172000
5	User Defined	System Sensor P2L 15cd Temp Hig	0.000000	0.000000	0.053000	0.265000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.43700

NAC 2			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 10

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	180	1.148	0.552	19.77	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200



NAC Circuit Configuration & Voltage Drop (cont'd)

The Signature 1/11/2022

NAC 3			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 11

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	220	1.404	0.552	19.63	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200

NAC 4			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 12

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	220	1.404	0.552	19.63	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200



NAC Circuit Configuration & Voltage Drop (cont'd)

The Signature 1/11/2022

NAC 5			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 13

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	190	1.212	0.552	19.73	16

Qty	Lookup Type	Circuit Devices Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200

NAC 6			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification	Description: NAC 14

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	290	1.850	0.552	19.38	16

[illegible]

AUX Power			MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4		
Usage:			Description:			
Wire Type	Ohms/1000ft.	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Required
#12 Solid	2.01		0.000	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
			Total Standby:	0.00000	Total Alarm:	0.00000

[illegible][illegible][illegible]

AUX Power		MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Usage:				Description:	
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps @ Last Device)	Min Volts Required
#12 Solid	2.01		0.000	0.000	20.40
					16

Circuit Devices		Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each
		User can add devices on the fly to these bottom 5 rows (No lookup function)			
Total Standby:			0.00000	Total Alarm:	
					0.00000



F-A303

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PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
BLDG 1-C
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-8
Location: 2nd Flr MECH 221
Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Panel			Standby (amps)		Alarm (amps)	
Qty	Part #	Description	Each	Total	Each	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:				0.075	Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)	Class	Standby (amps) Total	Alarm (amps) Total
1 Notification NAC 36	Class B	0.00000	0.41400
2 Notification NAC 37	Class B	0.00000	0.55200
3 Notification NAC 38	Class B	0.00000	0.55200
4 Aux Power AUX3	Class B	0.00000	0.00000
AUX		0.00000	0.00000
NAC Standby:		0.00000	NAC Alarm: 1.51800

Battery Calculation Summary		Standby (amps)	Alarm (amps)
Panel Current:		0.07500	0.07500
NAC Circuit Current:		0.00000	1.51800
Total Standby:		0.07500	1.59300
Standby Hours:		24	Alarm Mins: 5
AH Required:		1.80	AH Required: 0.14
Total Combined Standby & Alarm Amphours Required:		1.94	
Safety Margin:		20%	
Required Battery Amphours:		2.33	
Battery Amphours Provided:		7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 36

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	210	1.340	0.414	19.85	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
			Total Standby:	0.00000	Total Alarm:	0.41400

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 37

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	275	1.755	0.552	19.43	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.55200



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 38

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	210	1.340	0.552	19.66	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.55200

NAC 4 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Aux Power Description: AUX3

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	220	1.404	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
		User can add devices on the fly to these bottom 5 rows (No lookup function)				

AUX Power MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Usage: Unused Description:

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#14 Solid	3.19	160	1.021	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
		User can add devices on the fly to these bottom 5 rows (No lookup function)				



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
BLDG 1-C
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-9
Location: 3rd flr IDF 322
Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Panel			Standby (amps)		Alarm (amps)	
Qty	Part #	Description	Each	Total	Each	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:				0.075	Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)	Class	Standby (amps) Total	Alarm (amps) Total
1 Notification NAC 39	Class B	0.00000	0.24500
2 Notification NAC 40	Class B	0.00000	0.41400
3 Notification NAC 41	Class B	0.00000	0.41400
4 Notification NAC 42	Class B	0.00000	0.55200
AUX NAC 43		0.00000	0.27600
NAC Standby:		0.00000	NAC Alarm: 1.90100

Battery Calculation Summary		Standby (amps)	Alarm (amps)
Panel Current:		0.07500	0.07500
NAC Circuit Current:		0.00000	1.90100
Total Standby:		0.07500	1.97600
Standby Hours:		24	Alarm Mins: 5
AH Required:		1.80	AH Required: 0.17
Total Combined Standby & Alarm Amphours Required:		1.97	
Safety Margin:		20%	
Required Battery Amphours:		2.36	
Battery Amphours Provided:		7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 39

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	300	1.914	0.245	19.93	16

Gruat Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	System Sensor P2L 15cd Temp High	0.000000	0.000000	0.053000	0.159000
2	User Defined	S S SL 15cd	0.000000	0.000000	0.043000	0.086000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 40

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	150	0.957	0.414	20.00	16

Great Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 41

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	150	0.957	0.414	20.00	16

Great Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				

NAC 4 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 42

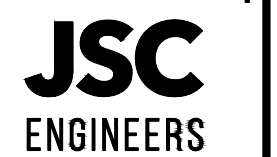
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	220	1.404	0.552	19.63	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No Lookup function)				
					</	

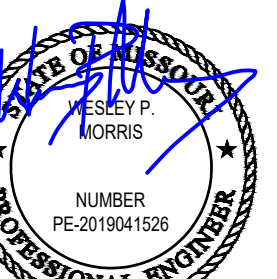
NAC 5 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Usage: Notification Description: NAC 43

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#14 Solid	3.19	160	1.021	0.276	20.12	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
2	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.276000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				



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07-11-2022

FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

SIGNATURE AT PRYOR II
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

REVISIONS	DATE	DESCRIPTION
1	05-31-22	PLANNING COMMENTS
2	07-08-22	PLANNING COMMENTS
3		
4		
5		

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ISSUED:

PERMIT

SHEET TITLE:

BATTERY CALCULATIONS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

FA305

BATTERY CALCS - BLDG 1 (CONT.)

SCALE : N/A

1



PSN-64 Battery & Voltage Drop Calculations

Project Name: The Signature
BLDG 1-C
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021

Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-10
Location: 3rd flr IDF 322

Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Qty	Panel	Part #	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
1	PSN-64		NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:				0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)	Use	Description	Class	Standby (amps) Total	Alarm (amps) Total
1	Notification	NAC 44	Class B	0.00000	0.41400
2	Notification	NAC 45	Class B	0.00000	0.96100
3	Notification	NAC 46	Class B	0.00000	0.55200
4	Unused		Class B	0.00000	0.00000
AUX				0.00000	0.00000
NAC Standby:				0.00000	NAC Alarm: 1.92700

Battery Calculation Summary				Standby (amps)	Alarm (amps)
Panel Current:				0.07500	0.07500
NAC Circuit Current:				0.00000	1.92700
Total Standby:				0.07500	Total Alarm: 2.00200
Standby Hours:				24	Alarm Mins: 5
AH Required:				1.80	AH Required: 0.17
Total Combined Standby & Alarm AmptHours Required:				1.97	Safety Margin: 20%
Required Battery AmptHours:				2.36	
Battery AmptHours Provided:				7	



NAC Circuit Configuration & Voltage Drop

The Signature 1/11/2021

NAC 1			MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description:	NAC 44	
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	210	1.340	0.414	19.85	16

Qty	Lookup Type	Circuit Devices	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
3	User Defined	S/S HLF		0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:				0.00000		Total Alarm:	0.41400

NAC 2			MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage: Notification		Description: NAC 45		
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	275	1.755	0.961	18.71	16

Qty	Lookup Type	Circuit Devices	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
2	User Defined	S/S HLF		0.000000	0.000000	0.138000	0.276000
2	User Defined	S/S P2HLF 135cd		0.000000	0.000000	0.277000	0.554000
2	User Defined	S/S SL 15cd		0.000000	0.000000	0.043000	0.086000
1	User Defined	System Sensor P2L 15cd temp low		0.000000	0.000000	0.045000	0.045000
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:				0.00000		Total Alarm:	0.96100



NAC Circuit Configuration & Voltage Drop (cont'd)

The Signature 1/11/2021

NAC 3			MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage: Notification		Description: NAC 46		
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	210	1.340	0.552	19.66	16

Qty	Lookup Type	Circuit Devices	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
4	User Defined	S/S HLF		0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:				0.00000		Total Alarm:	0.55200

NAC 4			MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage: Unused		Description:		
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19		0.000	0.000	20.40	16

Qty	Lookup Type	Circuit Devices	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:				0.00000		Total Alarm:	0.00000

NAC 5			MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Usage:			Description:			
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#14 Solid	3.19	160	1.021	0.000	20.40	16

Qty	Lookup Type	Circuit Devices	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:				0.00000		Total Alarm:	0.00000



RPS-1000 Calculations Version 02.24.09

Panel ID: RPS-11
Location: IDF 106
Model: RPS-1000 Addressable Power Expander
Volts: 24 VDC
Max NAC Current: 3.0 Amps
Max Panel Current: 6.0 Amps

Part #	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
RPS-1000	Power Expander	1	0.040	0.160						
IDP	Photo, Photo-T		0.000	0.000						
IDP	Ion		0.000	0.000						
IDP	Heat, Heat-HT		0.000	0.000						
IDP	Beam, Beam-T		0.000	0.000						
IDP	Pduct (non relay)		0.000	0.000						
IDP	Pduct-R (with relay)		0.000	0.000						
IDP	Acclimate, ROR		0.000	0.000						
IDP	Control		0.000	0.000						
IDP	Control-6		0.000	0.000						
IDP	Monitor, Minimon		0.000	0.000						
IDP	Monitor-2		0.000	0.000						
IDP	Monitor-10		0.000	0.000						
IDP	Pull-SA, Pull-DA		0.000	0.000						
IDP	Relay		0.000	0.000						
IDP	Relay-6		0.000	0.000						
IDP	Zone, Zone-6		0.000	0.000						
IDP	Iso (Isolator Module)		0.000	0.000						
SSB224BI	Isolator Base		0.000	0.000						
SSB501BHT	Sounder Base		0.000	0.000						
SSB224RB	Relay Base		0.000	0.000						
RTS451	Magnetic Remote Test		0.000	0.000						
RTS451KEY	Key Activated Test		0.000	0.000						
RA400Z	Remote LED		0.000	0.000						
5815XL	SLC Expander		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
VIP-VC	Voice Control Module		0.000	0.000						
VIP-SW16	Switch Expander		0.000	0.000						
VIP-50	50 Amplifier		0.000	0.000						
VIP-RM	Remote Microphone		0.000	0.000						
PGM-I/O #1	NAC 47	c.f.g.	0.000	0.552	#14 Solid	2.52	250	1.26	19.70	3.41%
PGM-I/O #2	NAC 48	c.f.g.	0.000	0.779	#14 Solid	2.52	230	1.16	19.50	4.43%
PGM-I/O #3	NAC 49	c.f.g.	0.000	0.552	#14 Solid	2.52	300	1.51	19.57	4.09%
PGM-I/O #4	NAC 50	c.f.g.	0.000	0.552	#14 Solid	2.52	210	1.06	19.82	2.86%
PGM-I/O #5	NAC 51	c.f.g.	0.000	0.414	#14 Solid	2.52	170	0.86	20.05	1.74%
PGM-I/O #6	trigger, bldg 1-A	c.f.g.	0.000	0.030	#14 Solid	2.52	150	0.76	20.38	0.11%
Total Standby Current (Amps)			0.040	3.039	Total Alarm Current (Amps)					
Standby Time In Hours			24	0.083	Alarm Time In Minutes / 60 (5 Mins)					
Total Standby AH Required			0.960	0.253	Total Alarm AH Required					
Total Combined AH Required			1.21							
Multiply By The Derating Factor			1.20							
Minimum Battery AmptHours Required			1.46							

Command Shortcuts

Configure Circuits

Print Page



PSN-64 Battery & Voltage Drop Calculations

Project Name: The Signature
BLDG 1-A
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021

Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-12
Location: 2nd Flr

Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Qty	Panel	Part #	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
1	PSN-64		NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:				0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)	Use	Description	Class	Standby (amps) Total	Alarm (amps) Total
1	Notification	NAC 52	Class B	0.00000	0.15900
2	Notification	NAC 53	Class B	0.00000	0.55200
3	Notification	NAC 54	Class B	0.00000	0.55200
4	Notification	NAC 55	Class B	0.00000	0.41400
AUX	NAC 56			0.00000	0.55200
NAC Standby:				0.00000	NAC Alarm: 2.22900

Battery Calculation Summary				Standby (amps)	Alarm (amps)
Panel Current:				0.07500	0.07500
NAC Circuit Current:				0.00000	2.22900
Total Standby:				0.07500	Total Alarm: 2.30400
Standby Hours:				24	Alarm Mins: 5
AH Required:				1.80	AH Required: 0.20
Total Combined Standby & Alarm AmptHours Required:				2.00	Safety Margin: 20%
Required Battery AmptHours:				2.40	
Battery AmptHours Provided:				7	



NAC Circuit Configuration & Voltage Drop

The Signature 1/11/2021

NAC 1

MAX Circuit Current (amps): 3

Source Voltage Used (VDC): 20.4

Class: Class B

Usage: Notification

Description: NAC 52

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	140	0.893	0.159	20.26	16

Qty	Lookup Type	Circuit Devices	Description	Standby (amps) Each	Standby (amps) Total	Alarm (amps) Each	Alarm (amps) Total
3	User Defined	System Sensor P2L 15cd Temp High		0.000000	0.000000	0.053000	0.159000
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:				0.00000		Total Alarm:	0.15900

NAC 2			MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage: Notification		Description: NAC 53		
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	220	1.404	0.552	19.63	16

7

6

5

4

3

2

1



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
BLDG 1-A
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-13
Location: 3rd Flr IDF 306
Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Qty	Panel Part #	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:			0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)		Class	Standby (amps) Total	Alarm (amps) Total
Ckt	Description			
1	Notification NAC57	Class B	0.00000	0.15900
2	Notification NAC58	Class B	0.00000	0.55200
3	Notification NAC59	Class B	0.00000	0.55200
4	Notification NAC 60	Class B	0.00000	0.41400
AUX	NAC 61		0.00000	0.55200
NAC Standby:			0.00000	NAC Alarm: 2.22900

Battery Calculation Summary		Standby (amps)	Alarm (amps)
Panel Current:		0.07500	0.07500
NAC Circuit Current:		0.00000	2.22900
Total Standby:		0.075000	Total Alarm: 2.30400
Standby Hours:		24	Alarm Mins: 5
AH Required:		1.80	AH Required: 0.20
Total Combined Standby & Alarm AmpHours Required:		2.00	Safety Margin: 20%
Required Battery AmpHours:		2.40	
Battery AmpHours Provided:		7	



NAC Circuit Configuration & Voltage Drop

The Signature 1/11/2021

NAC 1		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification Description: NAC 57
Wire Type	#14 Solid	Ohms/1000ft	3.19
Length 1-Way	140	Actual Ohms	0.893
Max Load (amps)	0.159	Volts @ EOL	20.26
Min Volts Req'd	16		

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	System Sensor P2L 15cd Temp High	0.000000	0.000000	0.053000	0.159000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				

NAC 2		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification Description: NAC 58
Wire Type	#14 Solid	Ohms/1000ft	3.19
Length 1-Way	220	Actual Ohms	1.404
Max Load (amps)	0.552	Volts @ EOL	19.63
Min Volts Req'd	16		

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
</						



NAC Circuit Configuration & Voltage Drop (cont'd)

The Signature 1/11/2021

NAC 3		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification Description: NAC 59
Wire Type	#14 Solid	Ohms/1000ft	3.19
Length 1-Way	280	Actual Ohms	1.786
Max Load (amps)	0.552	Volts @ EOL	19.41
Min Volts Req'd	16		

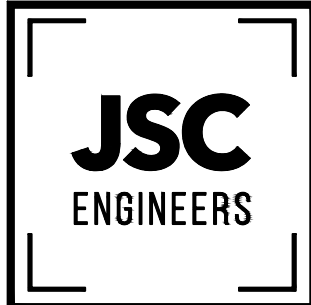
Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.55200

NAC 4		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification Description: NAC 60
Wire Type	#14 Solid	Ohms/1000ft	3.19
Length 1-Way	250	Actual Ohms	1.595
Max Load (amps)	0.414	Volts @ EOL	19.74
Min Volts Req'd	16		

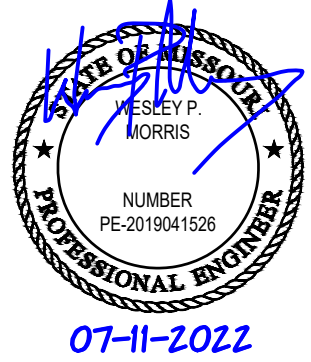
Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load amps	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	250	1.595	0.414	19.74	16
Circuit Devices						
Qty	Lookup Type	Description	Standby (amps)		Alarm (amps)	
			Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				

NAC 5		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4
Class:	Class B	Usage:	Notification Description: NAC 61
Wire Type	#14 Solid	Ohms/1000ft	3.19
Length 1-Way	210	Actual Ohms	1.340
Max Load (amps)	0.552	Volts @ Last Device	19.66
Min Volts Req'd	16		

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#14 Solid	3.19	210	1.340	0.552	19.66	16
Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
			Total Standby:	0.00000	Total Alarm:	0.55200



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FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

SIGNATURE AT PRYOR II
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

REVISIONS:	DATE	DESCRIPTION
1	05-31-22	PLANCHICK COMMENTS
2	07-08-22	PLANCHICK COMMENTS
3		
4		
5		

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ISSUED:

PERMIT

SHEET TITLE:

BATTERY

CALCULATIONS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

FA307

BATTERY CALCS - BLDG 1 (CONT.)

SCALE : N/A

[illegible]

Note: All Resistance values are taken from Table 8 Conductor Properties of the NFPA 70 National Electrical Code. All values are for Direct Current Resistance at 75°C (167°F).

[illegible]

FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP



PSN-106
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2022
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-106		Max Panel Current (amps): 10	
Panel ID: RPS-2		User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.	
Location: MDP Room			
Qty	Panel Part #	Description	Standby (amps) Each Total Alarm (amps) Each Total
1	PSN-106	NAC Power Expander	0.075 0.075 0.075 0.075
		Panel Standby:	0.075
		Panel Alarm:	0.075
NAC Circuits (See NAC Configuration below)		Standby (amps) Total Alarm (amps) Total	
Ckt	Use Description Class		
1	Notification NAC 7	Class B 0.00000	0.35900
2	Notification NAC 8	Class B 0.00000	0.55200
3	Notification NAC 9	Class B 0.00000	0.27600
4	Notification NAC 10	Class B 0.00000	0.55200
5	Notification NAC 11	Class B 0.00000	0.41400
6	Notification NAC 12	Class B 0.00000	0.55200
AUX Unused		0.00000	0.00000
		NAC Standby:	0.00000
		NAC Alarm:	2.70500

Battery Calculation Summary		Standby (amps) Alarm (amps)	
		Panel Current: 0.07500	0.07500
		NAC Circuit Current: 0.00000	2.70500
		Total Standby: 0.075000	Total Alarm: 2.78000
		Standby Hours: 24	Alarm Mins: 5
		AH Required: 1.80	AH Required: 0.24
		Total Combined Standby & Alarm AmperHours Required:	2.04
		Efficiency Factor:	20%
		Required Battery AmperHours:	2.45
		Battery AmperHours Provided:	7



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2022

NAC 1		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 7
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	480
		Actual Ohms	Max Load (amps)	Volts @ EOL
		3.062	0.359	19.30
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
6	User Defined	System Sensor P2L 15cd Temp Htg	0.000000	0.000000
1	User Defined	S/S SCL 15cd	0.000000	0.041000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.35900

NAC 2		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 8
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	250
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.595	0.552	19.52
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
4	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.55200



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2022

NAC 3		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 9
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	170
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.085	0.276	20.10
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
2	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.27600

NAC 4		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 10
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	210
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.340	0.552	19.66
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
4	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.55200



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2022

NAC 5		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 11
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	170
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.085	0.414	19.95
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
3	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.41400

NAC 6		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 12
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	240
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.531	0.552	19.55
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
4	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.55200

AUX Power		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
		Usage:	Unused	Description:
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	475
		Actual Ohms	Max Load (amps)	Volts @ Last Device
		3.031	0.000	20.40
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
4	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.00000

NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2022

NAC 7		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 13
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	370
		Actual Ohms	Max Load (amps)	Volts @ EOL
		2.361	0.414	19.42
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
3	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.41400

NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2022

NAC 8		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 14
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	280
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.786	0.552	19.41
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
4	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.55200

NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2022

NAC 9		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 15
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	200
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.276	0.276	20.05
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
2	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.27600



PSN-106
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2022
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-106		Max Panel Current (amps): 10	
Panel ID: RPS-3		User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.	
Location: MDP Room			
Qty	Panel Part #	Description	Standby (amps) Each Total Alarm (amps) Each Total
1	PSN-106	NAC Power Expander	0.075 0.075 0.075 0.075
		Panel Standby:	0.075
		Panel Alarm:	0.075
NAC Circuits (See NAC Configuration below)		Standby (amps) Total Alarm (amps) Total	
Ckt	Use Description Class		
1	Notification NAC 13	Class B 0.00000	0.41400
2	Notification NAC 14	Class B 0.00000	0.55200
3	Notification NAC 15	Class B 0.00000	0.27600
4	Notification NAC 16	Class B 0.00000	0.55200
5	Notification NAC 17	Class B 0.00000	0.41400
6	Notification NAC 18	Class B 0.00000	0.55200
AUX Unused		0.00000	0.00000
		NAC Standby:	0.00000
		NAC Alarm:	2.76000

Battery Calculation Summary		Standby (amps) Alarm (amps)	
		Panel Current: 0.07500	0.07500
		NAC Circuit Current: 0.00000	2.76000
		Total Standby: 0.075000	Total Alarm: 2.83500
		Standby Hours: 24	Alarm Mins: 5
		AH Required: 1.80	AH Required: 0.24
		Total Combined Standby & Alarm AmperHours Required:	2.04
		Efficiency Factor:	20%
		Required Battery AmperHours:	2.45
		Battery AmperHours Provided:	7



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2022

NAC 1		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 13
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	370
		Actual Ohms	Max Load (amps)	Volts @ EOL
		2.361	0.414	19.42
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
3	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.41400

NAC 2		MAX Circuit Current (amps): 3	Source Voltage Used (VDC): 20.4	
Class:	Class B	Usage:	Notification	Description: NAC 14
		Wire Type	Ohms/1000ft	Length 1-Way
		#14 Solid	3.19	280
		Actual Ohms	Max Load (amps)	Volts @ EOL
		1.786	0.552	19.41
		Min Volts Req'd	16	
Circuit Devices		Standby (amps) Each Total Alarm (amps) Each Total		
Qty	Lookup Type	Description		
4	User Defined	S/S HLF	0.000000	0.000000
		User can add devices on the fly to these bottom 5 rows (No lookup function)		
		Total Standby:	0.00000	Total Alarm: 0.55200



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2022

NAC 3		MAX Circuit Current (amps): 3	Source Voltage Used (VDC):
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NAC 2		MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage:		Notification	
		Description:		NAC 29	

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	170	1.085	0.552	19.80	16

Circuit Devices			Standby (amps)		Alarm (amps)		Total
Qty	Lookup Type	Description	Each	Total	Each	Total	
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000	
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:			0.00000		Total Alarm:		0.55200



NAC Configuration & Voltage Drop (cont'd) *The Signature* 1/11/2021

NAC 3		MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage:		Notification	
		Description:		NAC 30	

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	175	1.117	0.552	19.78	16

Circuit Devices			Standby (amps)		Alarm (amps)		Total
Qty	Lookup Type	Description	Each	Total	Each	Total	
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000	
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:			0.00000		Total Alarm:		0.55200

NAC 4		MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Class: Class B		Usage:		Notification	
		Description:		NAC 31	

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	215	1.372	0.414	19.83	16

Circuit Devices			Standby (amps)		Alarm (amps)		Total
Qty	Lookup Type	Description	Each	Total	Each	Total	
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000	
User can add devices on the fly to these bottom 5 rows (No lookup function)							
Total Standby:			0.00000		Total Alarm:		0.41400

AUX Power		MAX Circuit Current (amps): 3		Source Voltage Used (VDC): 20.4	
Usage:		Notification		Description:	

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#12 Solid	2.01		0.000	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)		Total
Qty	Lookup Type	Description	Each	Total	Each	Total	

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D

C

B

A



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
NAC Source Voltage: 20.4

Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%

Model #: PSN-64

Max Panel Current (amps): 6

Panel ID: RPS-7

User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Location: HVAC/ELEC 215

Qty	Panel	Description	Standby (amps)	Alarm (amps)	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075
Panel Standby:			0.075	Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)			Class	Standby (amps) Total	Alarm (amps) Total
Ckt	Use	Description			
1	Notification	NAC 32	Class B	0.00000	0.10600
2	Notification	NAC 33	Class B	0.00000	0.55200
3	Notification	NAC 34	Class B	0.00000	0.55200
4	Notification	NAC 35	Class B	0.00000	0.41400
AUX				0.00000	0.00000

Battery Calculation Summary			Standby (amps)	Alarm (amps)
Panel Current:			0.07500	0.07500
NAC Circuit Current:			0.00000	1.62400
Total Standby:			0.075000	Total Alarm: 1.69900
Standby Hours:			24	Alarm Mins: 5
AH Required:			1.80	AH Required: 0.15
Total Combined Standby & Alarm AmHours Required:			1.95	
Safety Margin:			20%	
Required Battery AmHours:			2.34	
Battery AmHours Provided:			7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 32

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	140	0.893	0.106	20.31	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
2	User Defined	System Sensor P2L 15cd Temp High	0.000000	0.000000	0.053000	0.106000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.10600	

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 33

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	160	1.021	0.552	19.84	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.55200	



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 34

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	200	1.276	0.552	19.70	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.55200	

NAC 4 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 35

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	250	1.595	0.414	19.74	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.41400	

AUX Power MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Usage: Description:

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#12 Solid	2.01		0.000	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.00000	



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
NAC Source Voltage: 20.4

Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%

Model #: PSN-64

Max Panel Current (amps): 6

Panel ID: RPS-8

User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Location: HVAC/ELEC 315

Qty	Panel	Description	Standby (amps)	Alarm (amps)	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075
Panel Standby:			0.075	Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)			Class	Standby (amps) Total	Alarm (amps) Total
Ckt	Use	Description			
1	Notification	NAC 36	Class B	0.00000	0.21200
2	Notification	NAC 37	Class B	0.00000	0.55200
3	Notification	NAC 38	Class B	0.00000	0.55200
4	Notification	NAC 39	Class B	0.00000	0.41400
AUX				0.00000	0.00000

Battery Calculation Summary			Standby (amps)	Alarm (amps)
Panel Current:			0.07500	0.07500
NAC Circuit Current:			0.00000	1.73000
Total Standby:			0.075000	Total Alarm: 1.80500
Standby Hours:			24	Alarm Mins: 5
AH Required:			1.80	AH Required: 0.16
Total Combined Standby & Alarm AmHours Required:			1.96	
Safety Margin:			20%	
Required Battery AmHours:			2.35	
Battery AmHours Provided:			7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 36

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	340	2.169	0.212	19.94	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	System Sensor P2L 15cd Temp High	0.000000	0.000000	0.053000	0.212000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.21200	

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 37

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	170	1.085	0.552	19.80	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.55200	



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 38

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	175	1.117	0.552	19.78	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.55200	

NAC 4 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 39

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	215	1.372	0.414	19.83	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.41400	

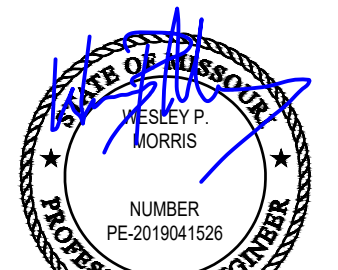
AUX Power MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Usage: Description:

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#12 Solid	2.01		0.000	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000	Total Alarm:	0.00000	

JSC
ENGINEERS

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1925 CENTRAL ST. SUITE #201
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07-11-2022

FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

SIGNATURE AT PRYOR II
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

REVISIONS	DATE	DESCRIPTION
1	05-31-22	PLANNED COMMENTS
2	07-08-22	PLANNED COMMENTS
3		
4		
5		

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JSC Engineers

ISSUED:

PERMIT

SHEET TITLE:

BATTERY
CALCULATIONS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

FA311

BATTERY CALCS - BLDG 2 (CONT.)

SCALE : N/A

1

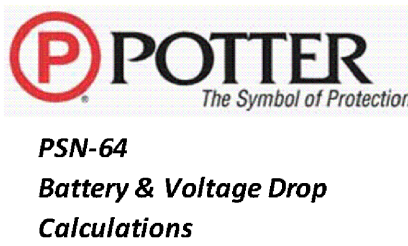
E

D

C

B

A



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-9
Location: HVAC/ELEC 315
Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Qty	Part #	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:			0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)		Standby (amps)		Alarm (amps)	
Qty	Description	Class	Total	Each	Total
1	Notification NAC 40	Class B	0.00000	0.13800	
2	Notification NAC 41	Class B	0.00000	0.55200	
3	Notification NAC 42	Class B	0.00000	0.55200	
4	Notification NAC 43	Class B	0.00000	0.41400	
AUX			0.00000	0.00000	
NAC Standby:			0.00000	NAC Alarm:	1.65600

Battery Calculation Summary		Standby (amps)		Alarm (amps)	
Panel Current:		0.07500		0.07500	
NAC Circuit Current:		0.00000		1.65600	
Total Standby:		0.075000		Total Alarm: 1.73100	
Standby Hours:		24		Alarm Mins: 5	
AH Required:		1.80		AH Required: 0.15	
Total Combined Standby & Alarm AmpHours Required:				1.95	
Safety Margin:				20%	
Required Battery AmpHours:				2.34	
Battery AmpHours Provided:				7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 40

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	140	0.893	0.138	20.28	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
1	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.138000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.13800

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 41

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	160	1.021	0.552	19.84	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.55200



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 42

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	200	1.276	0.552	19.70	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.55200

NAC 4 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 43

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	215	1.372	0.414	19.83	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby;			0.00000		Total Alarm;	0.41400

AUX Power MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Usage: Description:

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ Last Device	Min Volts Req'd
#12 Solid	2.01		0.000	0.000	20.40	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
		User can add devices on the fly to these bottom 5 rows (No lookup function)				
Total Standby:			0.00000		Total Alarm:	0.00000



RPS-1000 Calculations
Version 02-24-09

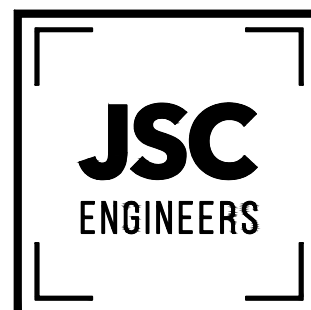
Panel ID: RPS-1000 Model: RPS-1000 Addressable Power Expand. Max NAC Current: 3.0 Amps
Location: IDF 102 Volts: 24 VDC Max Panel Current: 6.0 Amps

Part. #	Description	Qty	Current Draw		Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
			Standby	Alarm						
RPS-1000	Power Expander	1	0.040	0.160	N/A					
IDP	Photo, Photo-T		0.000	0.000						
IDP	Ion		0.000	0.000						
IDP	Heat, Heat-HT		0.000	0.000						
IDP	Beam, Beam-T		0.000	0.000						
IDP	Pduct (non relay)		0.000	0.000						
IDP	Pduct-R (with relay)		0.000	0.000						
IDP	Accclimate, RCR		0.000	0.000						
IDP	Control		0.000	0.000						
IDP	Control-6		0.000	0.000						
IDP	Monitor, Minimon		0.000	0.000						
IDP	Monitor-2		0.000	0.000						
IDP	Monitor-10		0.000	0.000						
IDP	Pull-SA, Pull-DA		0.000	0.000						
IDP	Relay		0.000	0.000						
IDP	Relay-6		0.000	0.000						
IDP	Zone, Zone-6		0.000	0.000						
IDP	Iso (Isolator Module)		0.000	0.000						
SSB224BI	Isolator Base		0.000	0.000						
SSB501BHT	Sounder Base		0.000	0.000						
SSB224RB	Relay Base		0.000	0.000						
RTS451	Magnetic Remote Test		0.000	0.000						
RTS451KEY	Key Activated Test		0.000	0.000						
RA400Z	Remote LED		0.000	0.000						
5815XL	SLC Expander		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
VIP-VCM	Voice Control Module		0.000	0.000						
VIP-SW16	Switch Expander		0.000	0.000						
VIP-50	50 Amplifier		0.000	0.000						
VIP-RM	Remote Microphone		0.000	0.000						
PGM-I/O #1	NAC 44	cfg.	0.000	0.414	#14 Solid	2.52	80	0.40	20.23	0.82%
PGM-I/O #2	NAC 45	cfg.	0.000	0.552	#14 Solid	2.52	225	1.13	19.77	3.07%
PGM-I/O #3	NAC 46	cfg.	0.000	0.414	#14 Solid	2.52	120	0.60	20.15	1.23%
PGM-I/O #4	NAC 47	cfg.	0.000	0.414	#14 Solid	2.52	160	0.81	20.07	1.64%
PGM-I/O #5	NAC 48	cfg.	0.000	0.414	#14 Solid	2.52	190	0.96	20.00	1.94%
PGM-I/O #6	trigger, bldg 1-A	cfg.	0.000	0.030	#14 Solid	2.52	150	0.76	20.38	0.11%
Total Standby Current (Amps)			0.040	2.398	Total Alarm Current (Amps)					
Standby Time In Hours			24	0.083	Alarm Time In Minutes / 60 (5 Mins)					
Total Standby AH Required			0.960	0.200	Total Alarm AH Required					
Total Combined AH Required			1.16		Command Shortcuts					
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			1.39		Configure Circuits		Print Page			

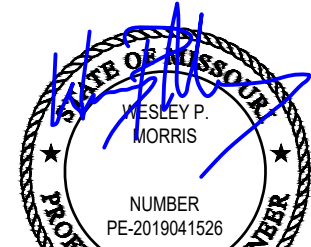
BATTERY CALCS - BLDG 2 (CONT.)

SCALE : N/A

1



MO CO NO. 2019000786 / KS CSA NO. E-2818
1925 CENTRAL ST. SUITE #201
KANSAS CITY, MO 64108
phone: (816) 272-8289
email: jsmothers@jseengineers.com



07-11-2022

FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

SIGNATURE AT PRYOR II
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

PROJECT:

REVISIONS: DATE / DESCRIPTION
1 05-31-22/PLANNED COMMENTS
2 07-08-22/PLANNED COMMENTS
3
4
5

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ISSUED:

PERMIT

SHEET TITLE:

BATTERY
CALCULATIONS

DATE: 04.13.2022

JOB NO.: 22-094

SHEET:

FA312

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6

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4

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2

1



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-11
Location: HVAC/ELEC 208
Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submit.

Qty	Panel Part #	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:			0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)			Standby (amps)		Alarm (amps)
Ckt	Use	Description	Class	Total	Total
1	Notification	NAC 49	Class B	0.00000	0.41400
2	Notification	NAC 50	Class B	0.00000	0.55200
3	Notification	NAC 51	Class B	0.00000	0.41400
4	Notification	NAC 52	Class B	0.00000	0.41400
AUX	NAC 53	NAC 53		0.00000	0.41400
NAC Standby:				0.00000	NAC Alarm: 2.20800

Battery Calculation Summary			Standby (amps)	Alarm (amps)
Panel Current:			0.07500	0.07500
NAC Circuit Current:			0.00000	2.20800
Total Standby: 0.075000			Total Alarm:	2.28300
Standby Hours: 24			Alarm Mins: 5	
AH Required: 1.80			AH Required: 0.20	
Total Combined Standby & Alarm AmpHours Required:			2.00	
Safety Margin:			20%	
Required Battery AmpHours:			2.40	
Battery AmpHours Provided:			7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 49

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	80	0.510	0.414	20.19	16

Qty	Lookup Type	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 50

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	225	1.436	0.552	19.61	16

Qty	Lookup Type	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200



NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 51

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	120	0.766	0.414	20.08	16

Qty	Lookup Type	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400



PSN-64
Battery & Voltage Drop
Calculations

Project Name: The Signature
Building 2
Installed By: System Integration Group
Designed By: David Johnson
Date: 1/11/2021
Standby Hours: 24
Alarm Mins: 5
Safety Margin: 20%
NAC Source Voltage: 20.4

Model #: PSN-64
Panel ID: RPS-12
Location: HVAC/ELEC 308
Max Panel Current (amps): 6
User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submit.

Qty	Panel Part #	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
1	PSN-64	NAC Power Expander	0.075	0.075	0.075	0.075
Panel Standby:			0.075		Panel Alarm:	0.075

NAC Circuits (See NAC Configuration below)			Standby (amps)		Alarm (amps)
Ckt	Use	Description	Class	Total	Total
1	Notification	NAC 54	Class B	0.00000	0.41400
2	Notification	NAC 55	Class B	0.00000	0.55200
3	Notification	NAC 56	Class B	0.00000	0.41400
4	Notification	NAC 57	Class B	0.00000	0.41400
AUX	NAC 58	NAC 58		0.00000	0.41400
NAC Standby:				0.00000	NAC Alarm: 2.20800

Battery Calculation Summary			Standby (amps)	Alarm (amps)
Panel Current:			0.07500	0.07500
NAC Circuit Current:			0.00000	2.20800
Total Standby:			0.075000	Total Alarm: 2.28300
Standby Hours:			24	Alarm Mins: 5
AH Required:			1.80	AH Required: 0.20
Total Combined Standby & Alarm AmpHours Required:			2.00	
Safety Margin:			20%	
Required Battery AmpHours:			2.40	
Battery AmpHours Provided:			7	



NAC Circuit Configuration & Voltage Drop The Signature 1/11/2021

NAC 1 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 54

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	80	0.510	0.414	20.19	16

Qty	Lookup Type	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400

NAC 2 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 55

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	225	1.436	0.552	19.61	16

Qty	Lookup Type	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
4	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.552000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.55200

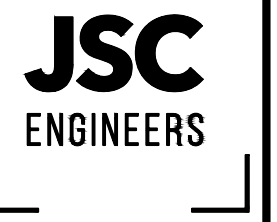


NAC Circuit Configuration & Voltage Drop (cont'd) The Signature 1/11/2021

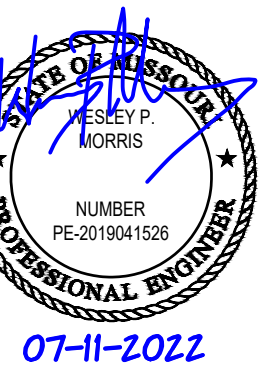
NAC 3 MAX Circuit Current (amps): 3 Source Voltage Used (VDC): 20.4
Class: Class B Usage: Notification Description: NAC 56

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.19	120	0.766	0.414	20.08	16

Qty	Lookup Type	Description	Standby (amps) Each	Total	Alarm (amps) Each	Total
3	User Defined	S/S HLF	0.000000	0.000000	0.138000	0.414000
User can add devices on the fly to these bottom 5 rows (No lookup function)						
Total Standby:			0.00000		Total Alarm:	0.41400



MO COA NO. 2019000786 / KS COA NO. E-2818
1925 CENTRAL ST. SUITE #201
KANSAS CITY, MO 64108
phone: (816) 272-8289
email: jsmith@jseengineers.com



FIRE ALARM CONTRACTOR:



SYSTEM INTEGRATION GROUP

SIGNATURE AT PRYOR II
2100 AND 2150 NW LOWENSTEIN DR.
LEE'S SUMMIT, MISSOURI 64081

REVISIONS:	DATE / DESCRIPTION
1	05-31-22/PLANCHER COMMENTS
2	07-08-22/PLANCHER COMMENTS
3	
4	
5	

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ISSUED:

PERMIT

SHEET TITLE:

BATTERY
CALCULATIONS

DATE: 04.13.2022
JOB NO.: 22-094
SHEET:

FA313

BATTERY CALCS - BLDG 2 (CONT.)

SCALE : N/A

1