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GENERAL FIRE ALARM NOTES:

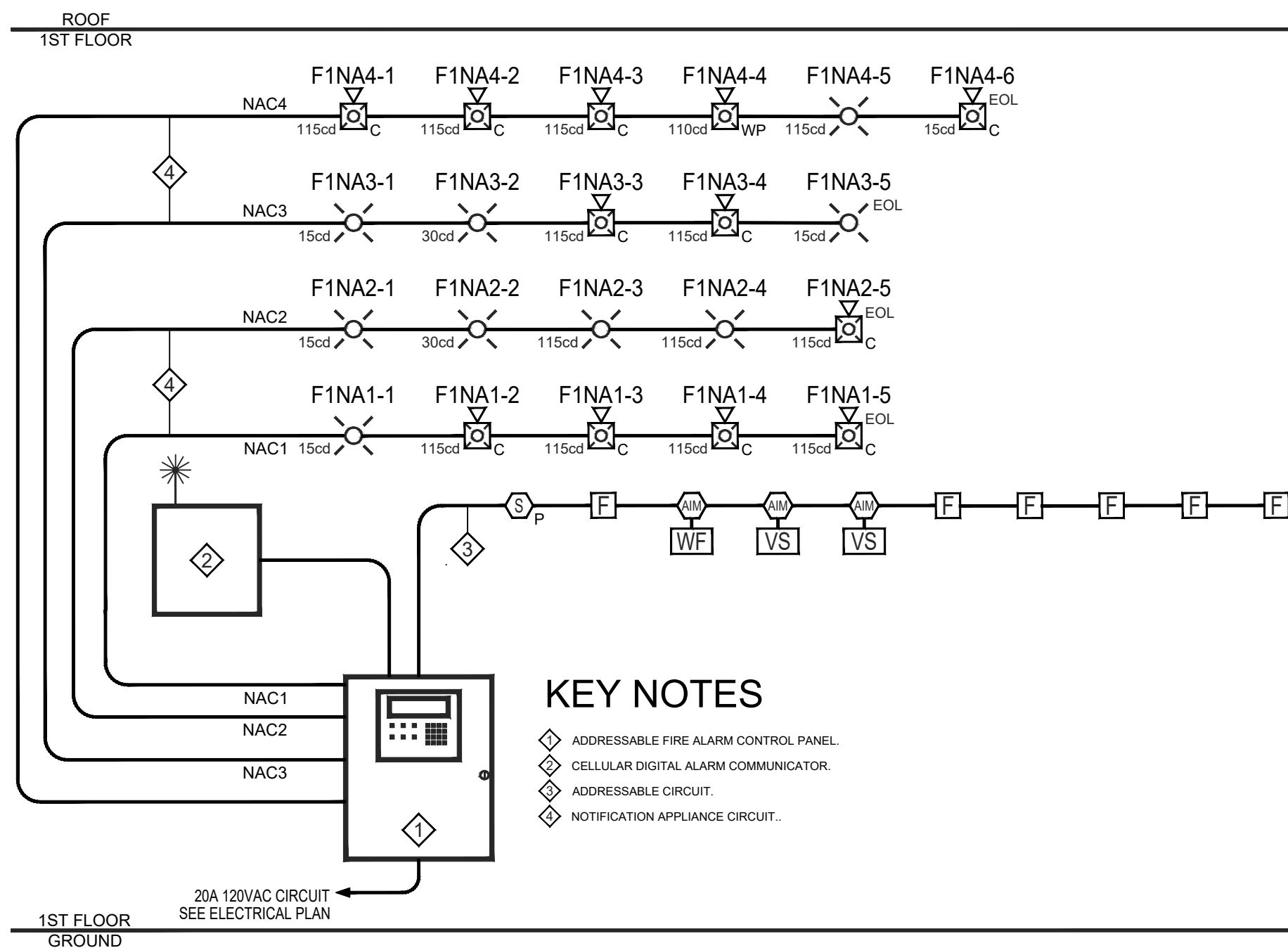
1. A FIRE ALARM SYSTEM IS PROVIDED TO COMPLY WITH THE CURRENT NFPA 72, NCSBC, ADA AND LOCAL AUTHORITY HAVING JURISDICTION'S REQUIREMENT.
2. AUDIBLE SIGNAL SOUND LEVEL SHALL BE AT LEAST 15dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF 60 SECONDS MINIMUM, WHICHEVER IS LOUDER, MEASURED FIVE FEET ABOVE THE FLOOR IN THE OCCUPIED AREA.
3. THE TOTAL SOUND LEVEL PRODUCED BY COMBINING AMBIENT SOUND WITH ALL ALARM SIGNALS SHALL NOT EXCEED 110 dBA.
4. "cd" RATING IS CALCULATED PER NFPA AND IT IS MINIMUM. PROVIDE MINIMUM OR HIGHER.
5. PROVIDE BATTERY CALCULATIONS AND SHOP DRAWINGS FOR FIRE MARSHALL'S FINAL APPROVAL.
6. PROVIDE BUILDING FIRE ALARM ZONE MAP IN A FRAME PER LOCAL FIRE MARSHALL'S REQUIREMENT.
7. REFER TO PLAN SPECIFICATIONS FOR EQUIPMENT/ DEVICE MODEL NUMBERS.
8. REFER PLANS FOR EXACT QUANTITY OF FIRE ALARM DEVICES.
9. HORN/ STROBES SHALL BE RED IN COLOR.
10. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT. MINIMUM CONDUIT SIZE 3/4". ALTERNATIVELY, PLENUM RATED FPLP CABLES ALLOWED IF LOCAL CODE IS PERMITTED.
11. LOCATE CEILING MOUNTED FIRE ALARM HORN STROBE TO THE CENTER OF THE ROOM AS PRACTICAL AS CAN BE. COORDINATE OTHER CEILING MOUNTED DEVICES SUCH AS LIGHT, SPEAKER, DIFFUSER, ETC. PRIOR TO INSTALLATION. (TYPICAL)
12. LOCATE FIRE ALARM HORN STROBE WITHIN 15' OF THE END OF CORRIDOR OR EXIT. (TYPICAL)

ES-200X INTELLIGENT ADDRESSABLE FACP W/DACT BATTERY CALCULATION											
SECONDARY POWER SOURCE REQUIREMENTS											
SECONDARY NON-ALARM CURRENT (AMPS)					SECONDARY ALARM CURRENT (AMPS)						
DEVICE TYPE	Qty	CURRENT DRAW	TOTAL		Qty	CURRENT DRAW	TOTAL				
SYSTEM											
MAIN CIRCUIT BOARD	1	X	0.1410	=	0.1410	1	X	0.2570	=	0.2570	
PVPRMOD24	1	X	0.008	=	0.008	1	X	0.007	=	0.007	
ANN-BUS Devices											
ANN-80 (W)	1	X	0.0150	=	0.0150	1	X	0.0400	=	0.0400	
ADDRESSABLE DEVICES											
SD365 PHOTO SMK DET	1	X	0.0003	=	0.0003						
BG-121X MANUAL PULL STATION	5	X	0.0003	=	0.0015						
MMF-300 MONITOR MOD	3	X	0.0004	=	0.0012						
MAXIMUM ALARM DRAW FOR ALL ADDRESSABLE DEVICES										0.4	
NOTIFICATION APPLIANCES											
NAC 1					1	X	0.4980	=	0.4980		
NAC 2					1	X	0.3400	=	0.3400		
NAC 3					1	X	0.2940	=	0.2940		
NAC 4					1	X	0.5790	=	0.5790		
TOTAL STANDBY LOAD					0.1670	TOTAL ALARM LOAD					2.4150
CALCULATION IN TOTALS											
					REQUIRED STANDBY TIME IN HOURS						
					24						
STANDBY LOAD CURRENT					0.1670	X	24	=	4.008		
					REQUIRED ALARM TIME IN MINUTES						
					5						
ALARM LOAD CURRENT					2.4150	X	0.084	=	0.2030		
					TOTAL CURRENT LOAD						4.2110
					MULTIPLY BY THE DERATING FACTOR						1.2
					TOTAL AMPERE HOURS REQUIRED						5.0530
					RECOMMENDED BATTERIES:						7AH BATT NEEDED

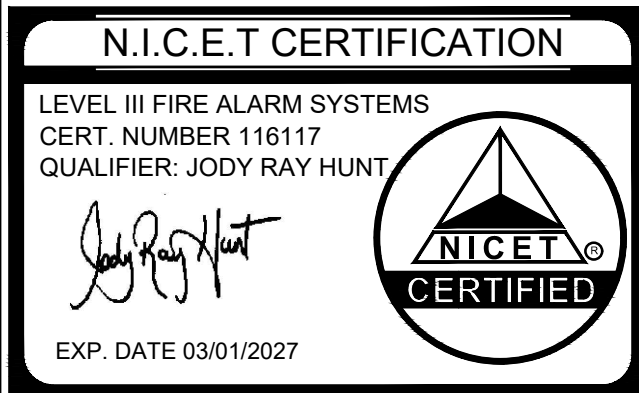
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FA-02 FACP BATTERY CALCULATIONS
NOT TO SCALE

NAC CIRCUIT VOLTAGE DROP CALCULATIONS																		
FACP N1					System Voltage	Percentage Over	Wire Gauge	Ohm's per 1000										
					20.4	12%	16 AWG	4.89										
					Distance from	NAC1 Voltage				Distance from	NAC2 Voltage							
Device Num.	Device Number	Device Current	previous device	At Device	Drop from source	Percent Drop	Device Number	Device Current	previous device	At Device	Drop from source	Percent Drop						
1	SCRLED-15 L-Series LED Strobe Only Ceiling - Red	0.018	10.60	20.35	0.052	0.25%	SCRLED-15 L-Series LED Strobe Only Ceiling - Red	0.018	16.80	20.34	0.096	0.27%						
2	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	35.40	20.18	0.224	1.10%	SCRLED-30 L-Series LED Strobe Only Ceiling - Red	0.022	21.40	20.27	0.127	0.62%						
3	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	54.20	19.92	0.478	2.35%	SCRLED-115 L-Series LED Strobe Only Ceiling - Red	0.090	98.00	19.96	0.436	2.14%						
4	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	57.50	19.72	0.681	3.34%	SCRLED-115 L-Series LED Strobe Only Ceiling - Red	0.090	53.10	19.81	0.591	2.90%						
5	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	53.10	19.59	0.806	3.95%	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	83.60	19.64	0.763	3.74%						
Totals					0.498	210.80	End of Line Voltage	Totals					0.340	272.90	End of Line Voltage			
					Distance from	NAC3 Voltage				Distance from	NAC4 Voltage							
Device Num.	Device Number	Device Current	previous device	At Device	Drop from source	Percent Drop	Device Number	Device Current	previous device	At Device	Drop from source	Percent Drop						
1	SCRLED-15 L-Series LED Strobe Only Ceiling - Red	0.018	24.80	20.33	0.071	0.35%	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	91.40	19.88	0.518	2.54%						
2	SCRLED-15 L-Series LED Strobe Only Ceiling - Red	0.018	7.80	20.31	0.094	0.46%	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	53.10	19.58	0.818	4.01%						
3	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	8.60	20.28	0.117	0.57%	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	38.10	19.41	0.869	4.85%						
4	PC2RLED-115 L-Series LED Horn/Strobe Ceiling - Red	0.120	29.80	20.21	0.192	0.94%	PC2RLED-110 L-Series LED Horn/Strobe Wall Outdoor - Red	0.094	38.00	19.28	1.115	5.47%						
5	SCRLED-15 L-Series LED Strobe Only Ceiling - Red	0.018	9.10	20.20	0.205	1.00%	SCRLED-115 L-Series LED Strobe Only Ceiling - Red	0.090	24.30	19.23	1.167	5.72%						
6		0.000	20.20	20.20	0.205	1.00%	PC2RLED-15 L-Series LED Horn/Strobe Ceiling - Red	0.035	13.70	19.22	1.184	5.80%						
Totals					0.294	80.20	End of Line Voltage	Totals					0.579	258.60	End of Line Voltage			
METHOD Point to Point					Current	Distance	Voltage Drop	End of Line Voltage	Percentage of Drop	METHOD End of Line								
NAC1					0.498	210.80	0.81	19.59	3.95%	NAC1				0.498	210.80	0.81	19.59	5.03%
NAC2					0.340	272.90	0.76	19.64	3.74%	NAC2				0.340	272.90	0.91	19.64	4.45%
NAC3					0.294	80.20	0.20	20.20	1.00%	NAC3				0.294	80.20	0.23	20.20	1.13%
NAC4					0.579	258.60	1.18	19.22	5.80%	NAC4				0.579	258.60	1.46	19.22	7.18%
METHOD Load Centering					Current	Distance	Voltage Drop	End of Line Voltage	Percentage of Drop	NAC4								
NAC1					0.498	210.80	0.51	19.59	2.52%	NAC4								
NAC2					0.340	272.90	0.45	19.64	2.22%	NAC4								
NAC3					0.294	80.20	0.12	20.20	0.57%	NAC4								
NAC4					0.579	258.60	0.73	19.22	3.50%	NAC4								

B
FA-02 FACP NAC VOLTAGE DROP CALCULATIONS
NOT TO SCALE



C
FA-02 FIRE ALARM RISER DETAIL
NOT TO SCALE



TRACTOR SUPPLY COMPANY
LILLINGTON
695 NC-210
LILLINGTON, NORTH CAROLINA 27546
FIRE ALARM SYSTEM

AFA PROTECTIVE SYSTEMS, INC.
A PAVION COMPANY
CARD ACCESS - CCTV - ALARMS - ADVANCED COMMUNICATIONS
894-D ELM STREET
FAYETTEVILLE, NORTH CAROLINA 28303
866-518-1493

JRH
FIRE DESIGN & CONSULTING
JRH FIRE DESIGN & CONSULTING, LLC.
1120 LILLY LIDEN WAY
DURHAM, NORTH CAROLINA 27703
www.jrhfiredesigns.com

SHOP DRAWINGS
PREPARED BY:
BY JRH FIRE DESIGN & CONSULTING
FROM DESIGN BY AFA SALES ENGINEER

INSTALLATION BY:
AFA PROTECTIVE SYSTEM, INC.
A PAVION COMPANY



JRH JOB NUM. 25-1488	
REVISION: 0	DATE: 05/23/2025
INITIAL RELEASE	
REVISION:	DATE:
REVISION:	DATE:
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DRAWING TITLE:
GENERAL FIRE ALARM NOTES, FIRE ALARM
CALCULATION, AND FIRE ALARM RISER
DETAIL

DRAWN BY:	JRH
SALESMAN:	
PROJECT MGR:	HTF
DATE:	05/23/2025
SCALE:	AS SHOWN ON DRAWINGS
SHEET NO. 2	OF 3

DRAWING NO.
FA - 0.2

J:\AFA FOLDER\Design Folder\202505-1488 Tractor Supply Co., Lillington, NC\ENGINEERING\IN-HOUSE (SHOP DRAWINGS)\SHOP DRAWINGS\DWG 25-1488-00-FA-01.dwg

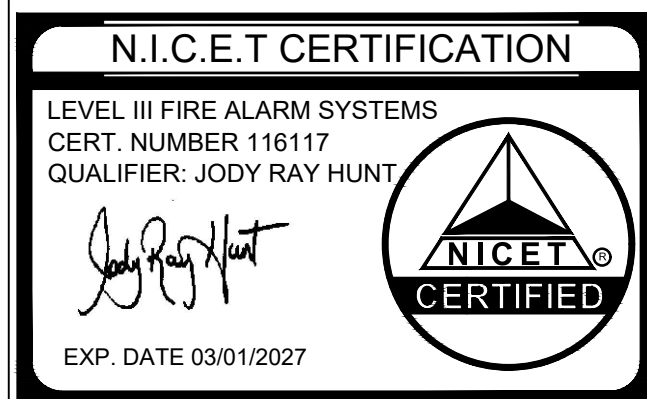
FIRE ALARM SHEET NOTES:

1. ALL FIRE ALARM DEVICES IN COMMON SIGHT LINES MUST BE VISUALLY SYNCHRONIZED AND ALL AUDIBLE FIRE ALARM DEVICES MUST BE AUDIBLY SYNCHRONIZED FOR A CONSISTENT SOUND THROUGHOUT.

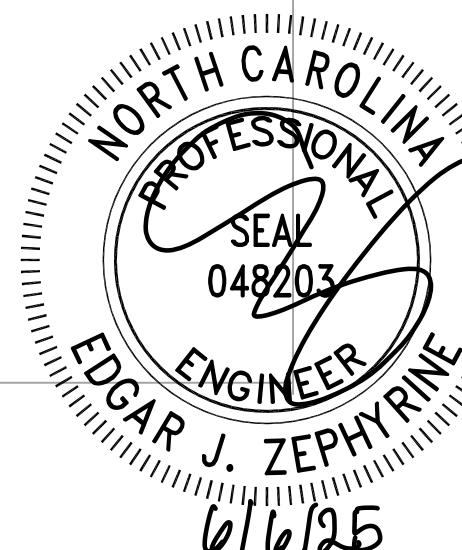
FENCED OUTDOOR DISPLAY AREA

LIVE GOODS CENTER

PULL ANN CABLE
BACK TO FAC



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



TRACTOR SUPPLY COMPANY
LILLINGTON
695 NC-210
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REVISION:	DATE:
REVISION:	DATE:

DRAWING TITLE:
BUILDING FLOOR PLAN - FIRE ALARM

DRAWN BY: JRH
SALESMAN:
PROJECT MGR: HTF
DATE: 05/23/2025
SCALE: AS SHOWN ON DRAWINGS
SHEET NO. 3 OF 3

DRAWING NO.
FA - 1.1