



SHOP DRAWING REVIEW

Job Title: Keith Corporation MOB for Cape Fear: Upfit

LS3P Project #: 8403-207880

M&C Project #: 05607-0028

Shop Drawing Number: 28 31 11

Description of Items Received: Fire Alarm SD

SHOP DRAWING REVIEW

THIS REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND INFORMATION GIVEN IN THE CONSTRUCTION DOCUMENTS. CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWING DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. REVIEW OF A SPECIFIC ITEM SHALL NOT INCLUDE REVIEW OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOBSITE; INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESSES OR TO THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; COORDINATION OF THE WORK WITH THAT OF ALL TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.

NO EXCEPTION NOTED	<input type="checkbox"/>
MAKE CORRECTIONS NOTED	<input type="checkbox"/>
AMEND AND RESUBMIT	<input checked="" type="checkbox"/>
REJECTED – SEE REMARKS	<input type="checkbox"/>

3/24/2024

BY: Jesse Alonzo Jr

McKim & Creed

Review Comments:

1. Coordinate entry of conduit for LINAC room 1194 with pre-determined location during design to adhere to shielding requirements.
2. Provide shut down relay for roof top unit RTU-4 and EF-4.
3. Provide additional pull station on North end of corridor 1139
4. Show connections for BDA system.

SUBMITTAL



Job Number: 8105-23

Job Name: Cape Fear MOB

Spec Section No: 283111

Submittal No: 283111-05

Revision No:

Sent Date: 3/4/2024

Due Date: 3/18/2024

Spec Section Title: 283111 - Digital, Addressable Fire Alarm System

Submittal Title: Fire Alarm Shop Drawings (FITUP)

Contractor Notes:

No comments.

	5440 Wade Park Blvd Suite 220 Raleigh, North Carolina 27607 (919) 508-1989
<input checked="" type="checkbox"/> Reviewed	<input type="checkbox"/> Not Approved
<input type="checkbox"/> Reviewed As Noted	<input type="checkbox"/> Revise and Resubmit
Review of shop drawings and other submittals by General Contractor, Architect or Engineer will not relieve supplier of responsibility for dimensional accuracy, quantity or conformance to the Contract/Subcontract Documents. Requests for variance must be made in writing at the time the submittal is furnished to the General Contractor.	
By: <u>Sam Crummer</u> Date <u>3/4/2024</u>	
Notes:	

Architect Notes:

Empty box for Architect Notes.

Architect's Stamp

Empty box for Architect's Stamp.

Engineer Notes:

Empty box for Engineer Notes.

Engineer's Stamp

Empty box for Engineer's Stamp.



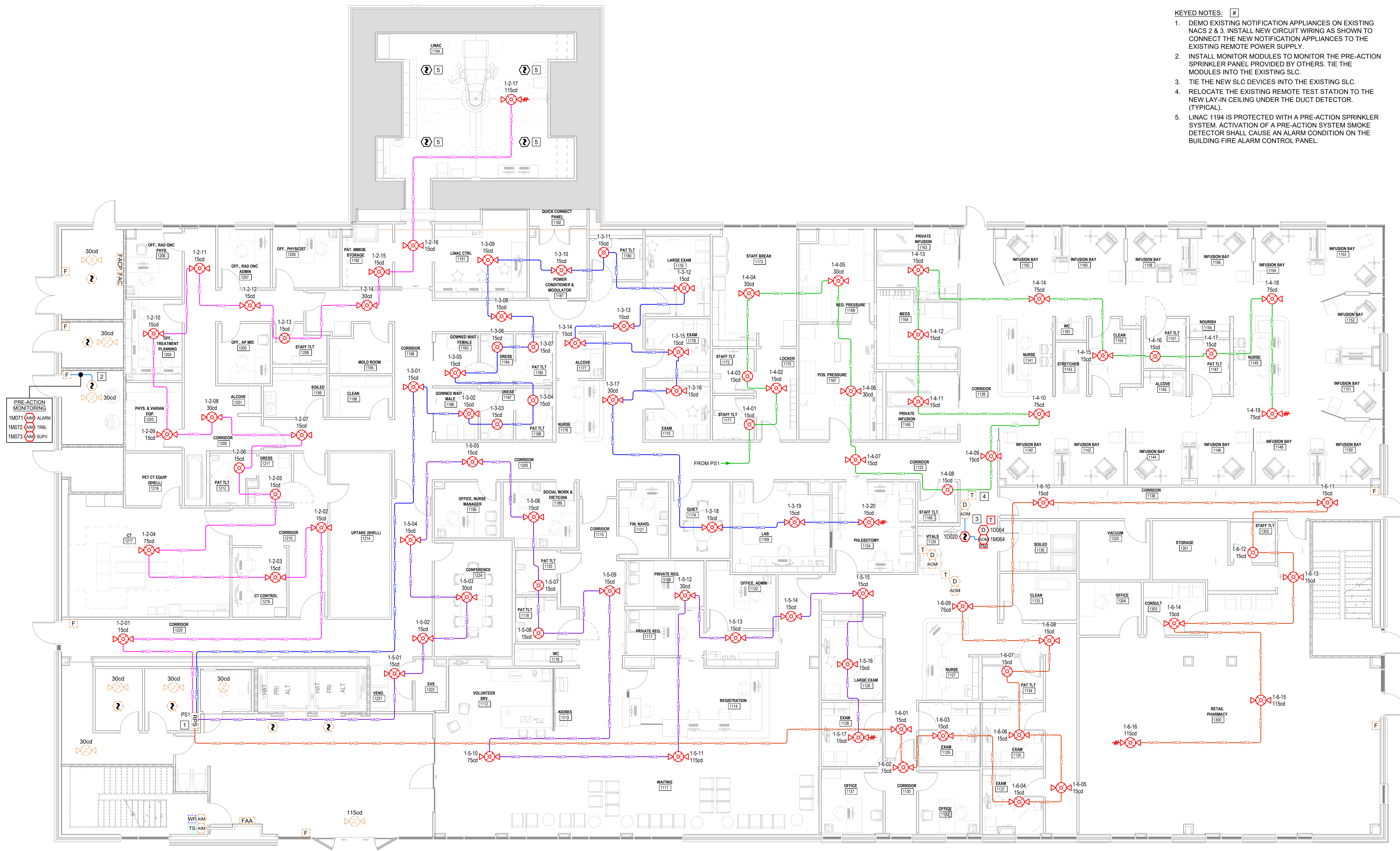
SHOP DRAWING / SUBMITTAL REVIEW

REVIEWED REVIEWED WITH CHANGES NOTED
 REVISE AND RESUBMIT REJECTED _____

SUBMITTAL WAS REVIEWED FOR DESIGN CONFORMITY AND GENERAL CONFORMANCE TO CONTRACT DOCUMENTS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING DIMENSIONS AT JOBSITE FOR TOLERANCE, CLEARANCE, QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH OTHER TRADES AND FULL COMPLIANCE WITH CONTRACT DOCUMENTS

By: Kasey Pate - Assistant Project Manager Date: 3/1/2024

Cape Fear MOB
Tenant Fitup
Fire Alarm
Shop Drawings



- KEYED NOTES:**
1. DEMO EXISTING NOTIFICATION APPLIANCES ON EXISTING NACS 2 & 3. INSTALL NEW CIRCUIT WIRING AS SHOWN TO CONNECT THE NEW NOTIFICATION APPLIANCES TO THE EXISTING REMOTE POWER SUPPLY.
 2. INSTALL MONITOR MODULES TO MONITOR THE PRE-ACTION SPRINKLER PANEL PROVIDED BY OTHERS. TIE THE MODULES INTO THE EXISTING SLC.
 3. TIE THE NEW SLC DEVICES INTO THE EXISTING SLC.
 4. RELOCATE THE EXISTING REMOTE TEST STATION TO THE NEW LAY-IN CEILING UNDER THE DUCT DETECTOR (TYPICAL).
 5. LINAC 1194 IS PROTECTED WITH A PRE-ACTION SPRINKLER SYSTEM. ACTIVATION OF A PRE-ACTION SYSTEM SMOKE DETECTOR SHALL CAUSE AN ALARM CONDITION ON THE BUILDING FIRE ALARM CONTROL PANEL.

1 1ST FLOOR FIRE ALARM PLAN
 FA-2 Scale: 1/8"=1'-0"

NO.	DATE	REVISION	BY

PATTERSON
GROUP SERVICES
 POWERED BY **API GROUP**
 1824 DOUGLAS DRIVE
 SANFORD, NC 27330
 (919) 776-2403
 NC LICENSE # 30023-SP-FALY

FIRE ALARM SYSTEM ALTERATIONS FOR:
CFVH HARNETT MOB -
1ST & 2ND FLOOR FIT-UP
 225 BRIGHTWATER DRIVE
 LILLINGTON, NC 27546

1ST FLOOR
 FIRE ALARM PLAN

DATE:	02/26/2024
DRAWN BY:	JRC
CHECKED BY:	CP
SCALE:	1/8"=1'-0"

SHEET:
FA-1
 SHEET 2 OF 4

- KEYED NOTES: #
1. DEMO EXISTING NOTIFICATION APPLIANCES ON EXISTING NACS 2 & 3. INSTALL NEW CIRCUIT WIRING AS SHOWN TO CONNECT THE NEW NOTIFICATION APPLIANCES TO THE EXISTING REMOTE POWER SUPPLY.
 2. RELOCATE THE EXISTING REMOTE TEST STATION TO THE NEW LAY-IN CEILING UNDER THE DUCT DETECTOR (TYPICAL).



1 2ND FLOOR FIRE ALARM PLAN
FA-2 Scale: 1/8"=1'-0"

NO.	DATE	REVISION	BY

PATTERSON
GROUP SERVICES
POWERED BY API GROUP
1824 DOUGLAS DRIVE
SANFORD, NC 27330
(919) 776-2403
NC LICENSE # 30023-SP-FALLY

FIRE ALARM SYSTEM ALTERATIONS FOR:
CFVH HARNETT MOB -
1ST & 2ND FLOOR FIT-UP
225 BRIGHTWATER DRIVE
LILLINGTON, NC 27546

2ND FLOOR
FIRE ALARM PLAN

DATE:	02/26/2024
DRAWN BY:	JRC
CHECKED BY:	CP
SCALE:	1/8"=1'-0"

SHEET:
FA-3
SHEET 3 OF 4

NOTIFIER Standby Battery Calculation
NFS-320 Fire Alarm Control Panel
by Honeywell

Protected Premises: CFVH - Harnett MOB 1st & 2nd Floor Fit-Up Date: 2/26/2024
Address: 225 Brightwater Drive
City: Lillington State: NC Zip: 27546

Panel ID: FACP Location: Main Elec. 107

System Device	Qty	Standby Current Draw	Alarm Current Draw	Draw	Alarm
CRUI 120 Main Board	1	0.25000	0.25000	0.25000	0.25000
#NACS In Use	1	0.03000	0.03000	0.03000	0.03000
KZM-R2 Display (Backlight on)	1	0.10000	0.10000	0.10000	0.10000
LCD3-80 LCD Remote Annunciator	1	0.04500	0.04500	0.04500	0.04500
HW-AV-LTE Communicator	1	0.06000	0.06000	0.06000	0.06000
FSP-951 Photoelectric Detector	17	0.00200	0.00340	0.00400	0.00700
FST-851R Thermal Detector-15W w/RO	2	0.00250	0.00400	0.00400	0.00600
NEIG-123 Manual Pull Station	14	0.00075	0.00250	0.00200	0.00700
DNB Duct Detector w/FSP-951R	10	0.00200	0.00200	0.00400	0.00400
RTS155KEY	10	0.00000	0.00000	0.01200	0.02000
FMM-1 Monitor Module	15	0.00075	0.00525	0.00500	0.07500
FMM-1 Relay Module	19	0.00025	0.00485	0.00500	0.12500
FS-15M Ten Input Monitor Module	1	0.00500	0.00500	0.00500	0.00500
HFF-PS10B Tagger	3	0.00000	0.00000	0.02000	0.06000
*FSP-951 Photoelectric Detector	1	0.00200	0.00300	0.00400	0.00700
*FST-851R Thermal Detector-15W w/RO	1	0.00250	0.00400	0.00400	0.00600
*FMM-1 Monitor Module	3	0.00075	0.00525	0.00500	0.07500
*FMM-1 Relay Module	1	0.00025	0.00485	0.00500	0.12500
*RTS155KEY	1	0.00000	0.00000	0.01200	0.02000
Total Standby:		0.817	0.817	0.817	1.369

Secondary Load Requirements **15.02** Amp Hours

Current Draw (Amps)	Time (Hours)	Total (A/H)
0.817	24	19.61
Secondary Alarm Load	0.084	2.02
Secondary Standby Load	1.900	45.65
Total Secondary Load		67.28
Derating Factor	1.2	
Secondary Load Requirement		80.74

Battery Selection **18** Amp Hours

FACP STANDBY BATTERY CALCULATION

NOTIFIER Standby Battery Calculation
HFF-PS10B Remote Power Supply
by Honeywell

Protected Premises: CFVH Harnett MOB 1st & 2nd Floor Fit-Up Date: 2/26/2024
Address: 225 Brightwater Drive
City: Lillington State: NC Zip: 27546

Panel ID: PS1 Location: 1st Floor, Electrical 103

System Device	Qty	Standby Current Draw	Alarm Current Draw	Draw	Alarm
HFF-PS1010 Main Board	1	0.15000	0.15000	0.15000	0.15000
*PCZWLED30	6	0.00000	0.00000	0.03000	0.23000
*PCZWLED15	12	0.00000	0.00000	0.20000	1.40000
*SCWLED30	1	0.00000	0.00000	0.02200	0.02200
*PCZWLED15	53	0.00000	0.00000	0.03500	1.85000
*PCZWLED30	8	0.00000	0.00000	0.03800	0.30400
*PCZWLED75	7	0.00000	0.00000	0.08700	0.60900
*PCZWLED15	4	0.00000	0.00000	0.12000	0.48000
*SCWLED15	17	0.00000	0.00000	0.01600	0.27000
Total Standby:		0.156	0.156	0.156	4.420

Secondary Load Requirements **5.04** Amp Hours

Current Draw (Amps)	Time (Hours)	Total (A/H)
0.156	24	3.74
Secondary Alarm Load	0.084	2.02
Secondary Standby Load	5.420	130.08
Total Secondary Load		135.84
Derating Factor	1.2	
Secondary Load Requirement		163.01

Battery Selection **7** Amp Hours

PS1 STANDBY BATTERY CALCULATION

NOTIFIER Standby Battery Calculation
HFF-PS10B Remote Power Supply
by Honeywell

Protected Premises: CFVH Harnett MOB 1st & 2nd Floor Fit-Up Date: 2/26/2024
Address: 225 Brightwater Drive
City: Lillington State: NC Zip: 27546

Panel ID: PS2 Location: 2nd Floor, Electrical 203

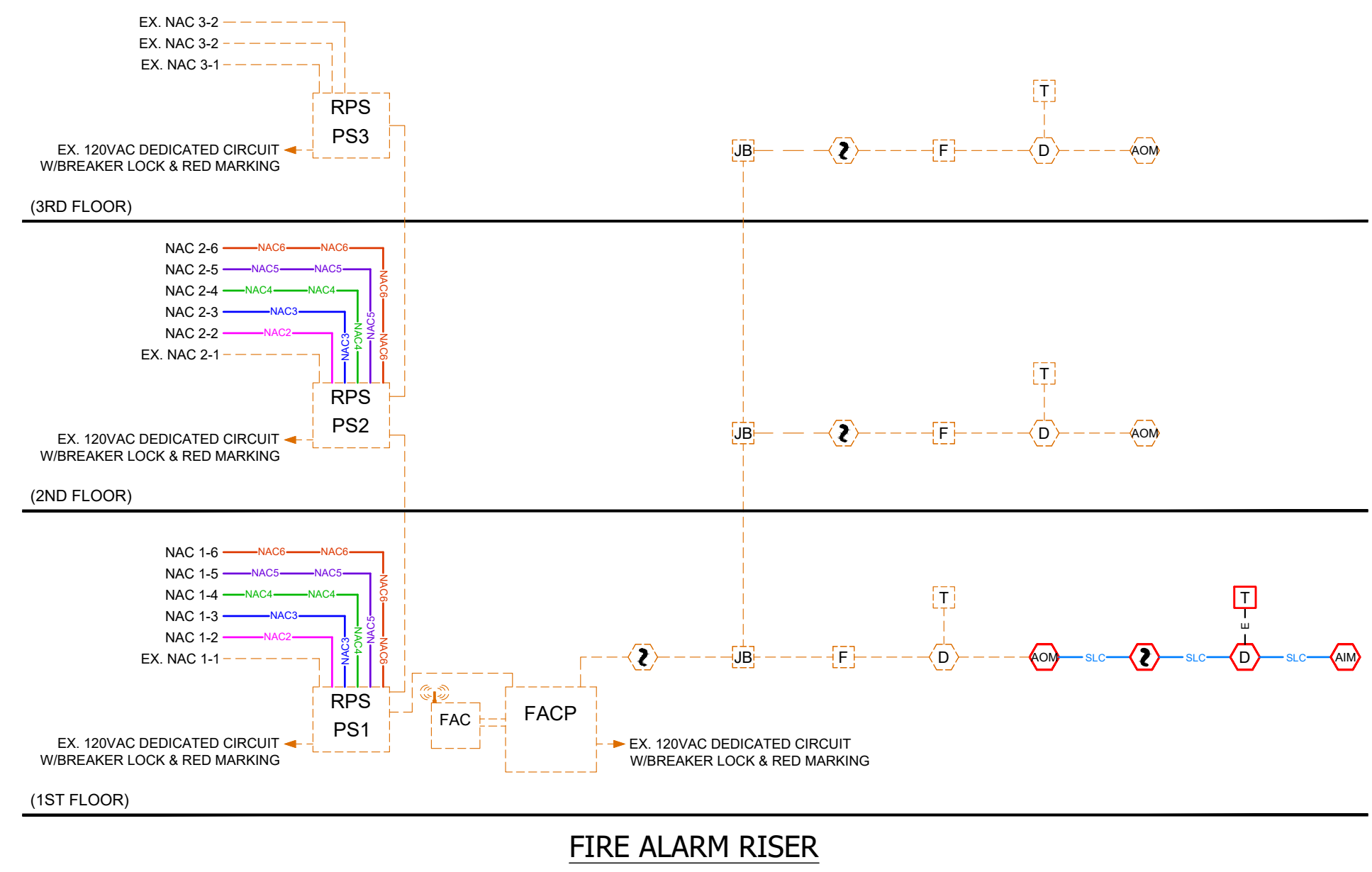
System Device	Qty	Standby Current Draw	Alarm Current Draw	Draw	Alarm
HFF-PS1010 Main Board	1	0.15000	0.15000	0.15000	0.15000
*PCZWLED30	3	0.00000	0.00000	0.03000	0.19000
*SCWLED30	1	0.00000	0.00000	0.02200	0.02200
*PCZWLED15	84	0.00000	0.00000	0.03500	2.94000
*PCZWLED30	14	0.00000	0.00000	0.03800	0.53200
*PCZWLED75	4	0.00000	0.00000	0.08700	0.34800
*PCZWLED15	1	0.00000	0.00000	0.12000	0.12000
*SCWLED15	12	0.00000	0.00000	0.01600	0.21600
Total Standby:		0.156	0.156	0.156	4.420

Secondary Load Requirements **4.94** Amp Hours

Current Draw (Amps)	Time (Hours)	Total (A/H)
0.156	24	3.74
Secondary Alarm Load	0.084	2.02
Secondary Standby Load	4.468	107.23
Total Secondary Load		112.99
Derating Factor	1.2	
Secondary Load Requirement		135.59

Battery Selection **7** Amp Hours

PS2 STANDBY BATTERY CALCULATION



FIRE ALARM RISER

Point to Point Voltage Drop Analysis
HFF-PS10B Remote Power Supply
Source Voltage: 20.4 Nominal System Voltage

Project Name: CFVH Harnett MOB Fit-Up Date: 2/26/2024
Circuit No: 2-2 Minimum Voltage: 16
Wire Gauge: 14
Area Covered: 2nd Floor
Ohm's per 1,000 Ft.: 3.14

Device Number	Part Number	Current (amp)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	PCZWLED30	0.038	45	45	20.18
2	PCZWLED15	0.035	30	75	20.04
3	PCZWLED15	0.035	30	105	19.91
4	PCZWLED15	0.035	25	130	19.80
5	PCZWLED15	0.035	30	160	19.68
6	PCZWLED15	0.035	30	190	19.57
7	PCZWLED15	0.035	25	215	19.48
8	PCZWLED15	0.038	35	250	19.36
9	PCZWLED15	0.035	40	290	19.23
10	PCZWLED15	0.035	25	315	19.15
11	PCZWLED15	0.035	25	340	19.08
12	PCZWLED15	0.035	25	365	19.02
13	PCZWLED15	0.035	25	390	18.96
14	PCZWLED15	0.038	25	415	18.91
15	PCZWLED15	0.035	40	455	18.83
16	PCZWLED15	0.035	25	480	18.79
17	PCZWLED15	0.035	25	505	18.76
18	PCZWLED15	0.038	30	535	18.72
19	PCZWLED15	0.035	25	560	18.70
20	SCWLED15	0.018	25	585	18.68
21	PCZWLED15	0.035	25	610	18.66
22	PCZWLED15	0.035	30	640	18.65
23	PCZWLED15	0.035	25	665	18.64
Total Power:		0.777	%Voltage Drop: -8.62%		Go

Point to Point Voltage Drop Analysis
HFF-PS10B Remote Power Supply
Source Voltage: 20.4 Nominal System Voltage

Project Name: CFVH Harnett MOB Fit-Up Date: 2/26/2024
Circuit No: 2-3 Minimum Voltage: 16
Wire Gauge: 14
Area Covered: 2nd Floor
Ohm's per 1,000 Ft.: 3.14

Device Number	Part Number	Current (amp)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	PCZWLED30	0.038	50	50	20.15
2	PCZWLED15	0.035	35	85	19.98
3	PCZWLED15	0.035	25	110	19.87
4	PCZWLED15	0.035	35	145	19.72
5	PCZWLED15	0.038	30	175	19.59
6	PCZWLED15	0.035	40	215	19.44
7	PCZWLED15	0.035	20	235	19.36
8	PCZWLED15	0.035	25	260	19.28
9	PCZWLED15	0.035	25	285	19.20
10	PCZWLED15	0.038	20	305	19.14
11	PCZWLED15	0.035	30	335	19.05
12	PCZWLED15	0.035	25	360	18.99
13	SCWLED15	0.018	30	390	18.92
14	PCZWLED15	0.035	30	420	18.85
15	PCZWLED15	0.035	20	440	18.81
16	PCZWLED15	0.035	25	465	18.77
17	PCZWLED15	0.035	25	490	18.73
18	PCZWLED15	0.035	25	515	18.70
19	PCZWLED15	0.035	20	535	18.67
20	PCZWLED15	0.038	35	570	18.64
21	PCZWLED15	0.035	25	595	18.62
22	PCZWLED15	0.035	20	615	18.62
23	PCZWLED15	0.035	20	635	18.61
Total Power:		0.820	%Voltage Drop: -8.78%		Go

Point to Point Voltage Drop Analysis
HFF-PS10B Remote Power Supply
Source Voltage: 20.4 Nominal System Voltage

Project Name: CFVH Harnett MOB Fit-Up Date: 2/26/2024
Circuit No: 2-4 Minimum Voltage: 16
Wire Gauge: 14
Area Covered: 2nd Floor
Ohm's per 1,000 Ft.: 3.14

Device Number	Part Number	Current (amp)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	SCWLED15	0.018	165	165	19.87
2	PCZWLED15	0.035	25	190	19.75
3	PCZWLED15	0.035	25	225	19.63
4	PCZWLED15	0.035	25	260	19.52
5	PCZWLED15	0.035	20	280	19.44
6	PCZWLED15	0.035	25	305	19.34
7	PCZWLED15	0.035	25	330	19.24
8	PCZWLED15	0.035	20	350	19.17
9	PCZWLED15	0.035	25	375	19.09
10	PCZWLED30	0.038	30	395	18.99
11	PCZWLED15	0.035	25	395	18.92
12	PCZWLED30	0.038	20	370	18.87
13	PCZWLED15	0.035	25	395	18.81
14	PCZWLED15	0.035	30	425	18.74
15	PCZWLED15	0.035	20	445	18.70
16	SCWLED15	0.018	35	480	18.64
17	PCZWLED15	0.035	25	505	18.59
18	PCZWLED15	0.035	45	550	18.53
19	PCZWLED15	0.035	25	575	18.50
20	SCWLED15	0.018	25	600	18.47
21	PCZWLED15	0.035	30	630	18.45
22	PCZWLED30	0.038	35	665	18.42
23	PCZWLED15	0.035	30	695	18.41
24	PCZWLED15	0.035	25	720	18.40
Total Power:		0.798	%Voltage Drop: -8.78%		Go

2ND FLOOR VOLTAGE DROP CALCULATIONS

Point to Point Voltage Drop Analysis
HFF-PS10B Remote Power Supply
Source Voltage: 20.4 Nominal System Voltage

Project Name: CFVH Harnett MOB Fit-Up Date: 2/26/2024
Circuit No: 2-5 Minimum Voltage: 16
Wire Gauge: 14
Area Covered: 2nd Floor
Ohm's per 1,000 Ft.: 3.14

Device Number	Part Number	Current (amp)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	PCZWLED15	0.035	120	120	19.82
2	PCZWLED15	0.035	35	155	19.66
3	SCWLED15	0.018	25	180	19.55
4	PCZWLED15	0.035	20	200	19.47
5	PCZWLED15	0.035	30	230	19.35
6	PCZWLED15	0.035	25	255	19.25
7	PCZWLED30	0.038	30	285	19.14
8	PCZWLED15	0.035	35	320	19.03
9	PCZWLED30	0.038	35	355	18.92
10	PCZWLED30	0.038	30	385	18.83
11	PCZWLED15	0.035	30	415	18.75
12	PCZWLED15	0.035	25	440	18.69
13	PCZWLED15	0.035	25	465	18.63
14	PCZWLED15	0.035	20	485	18.59
15	PCZWLED15	0.035	30	515	18.54
16	PCZWLED30	0.038	25	540	18.50
17	PCZWLED15	0.035	35	575	18.45
18	PCZWLED15	0.035	25	600	18.41
19	PCZWLED15	0.035	45	640	18.30
20	PCZWLED15	0.035	30	670	18.27
21	SCWLED15	0.018	30	700	18.25
22	SCWLED15	0.018	30	730	18.24
23	PCZWLED30	0.038	25	755	18.23
Total Power:		0.798	%Voltage Drop: -8.85%		Go

Point to Point Voltage Drop Analysis
HFF-PS10B Remote Power Supply
Source Voltage: 20.4 Nominal System Voltage

Project Name: CFVH Harnett MOB Fit-Up Date: 2/26/2024
Circuit No: 2-6 Minimum Voltage: 16
Wire Gauge: 14
Area Covered: 2nd Floor
Ohm's per 1,000 Ft.: 3.14

Device Number	Part Number	Current (amp)	Distance (Feet) Between	Distance (Feet) Total	Voltage at Device
1	PCZWLED15	0.035	50	50	20.08
2	PCZWLED15	0.087	55	105	19.77
3	SCWLED15	0.018	55	160	19.49
4	PCZWLED15	0.087	25	185	19.37
5	PCZWLED15	0.035	40	225	19.19
6	PCZWLED15	0.087	50	275	19.00
7	SCWLED15	0.018	25	300	18.92
8	PCZWLED30	0.038	25	325	18.84
9	PCZWLED15	0.035	25	350	18.76
10	PCZWLED15	0.035	45	395	18.64
11	PCZWLED15	0.035	30	425	18.58
12	PCZWLED15	0.035	25	450	18.52
13	PCZWLED15	0.035	25	475	18.46
14	PCZWLED15	0.035	30	505	18.41
15	PCZWLED15	0.035	25	530	18.37
16	SCWLED15	0.018	30	560	18.32
17	PCZWLED15	0.035	25	585	18.28
18					