

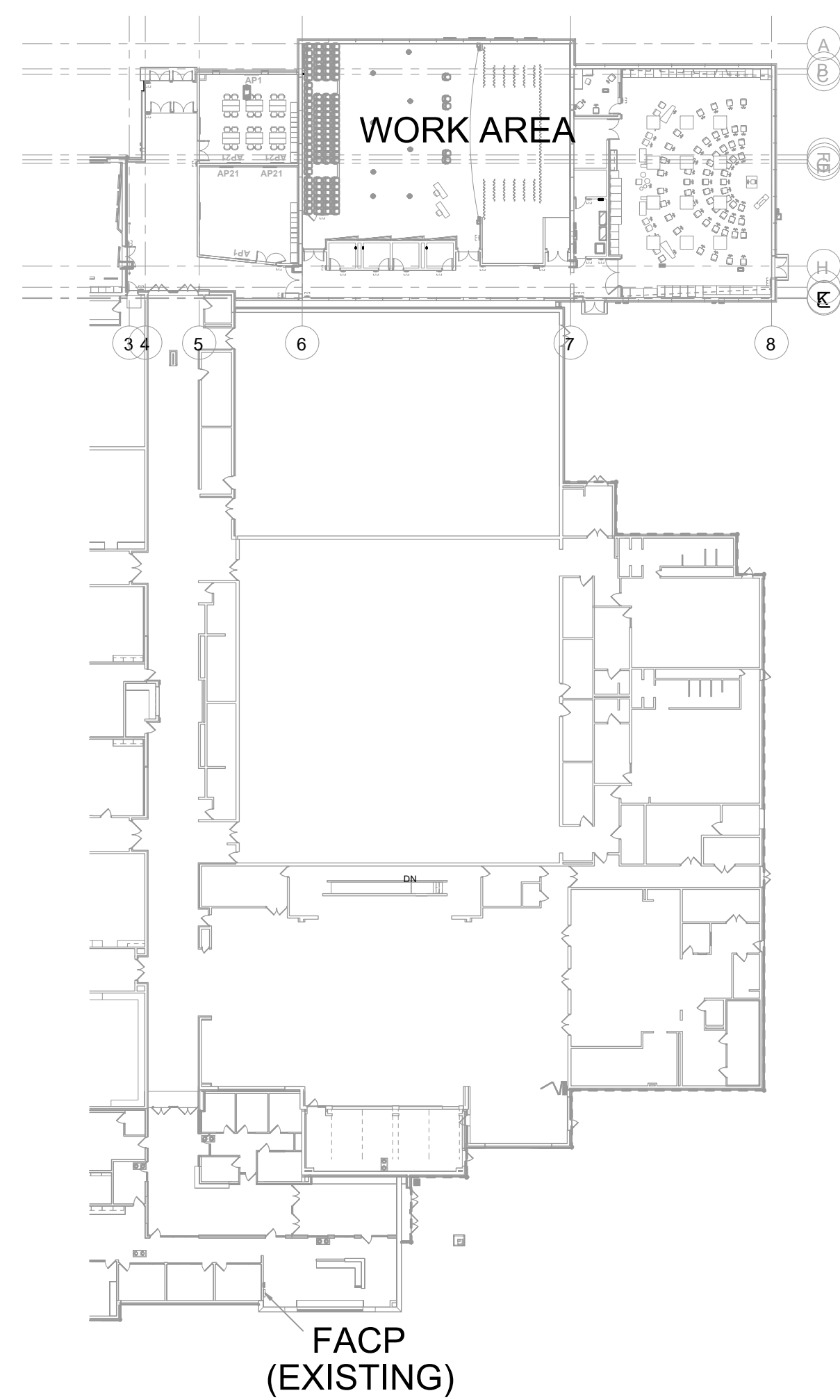
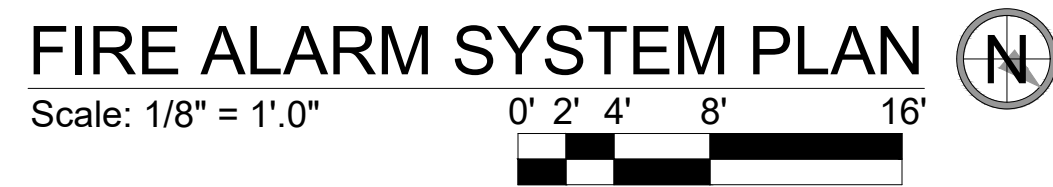
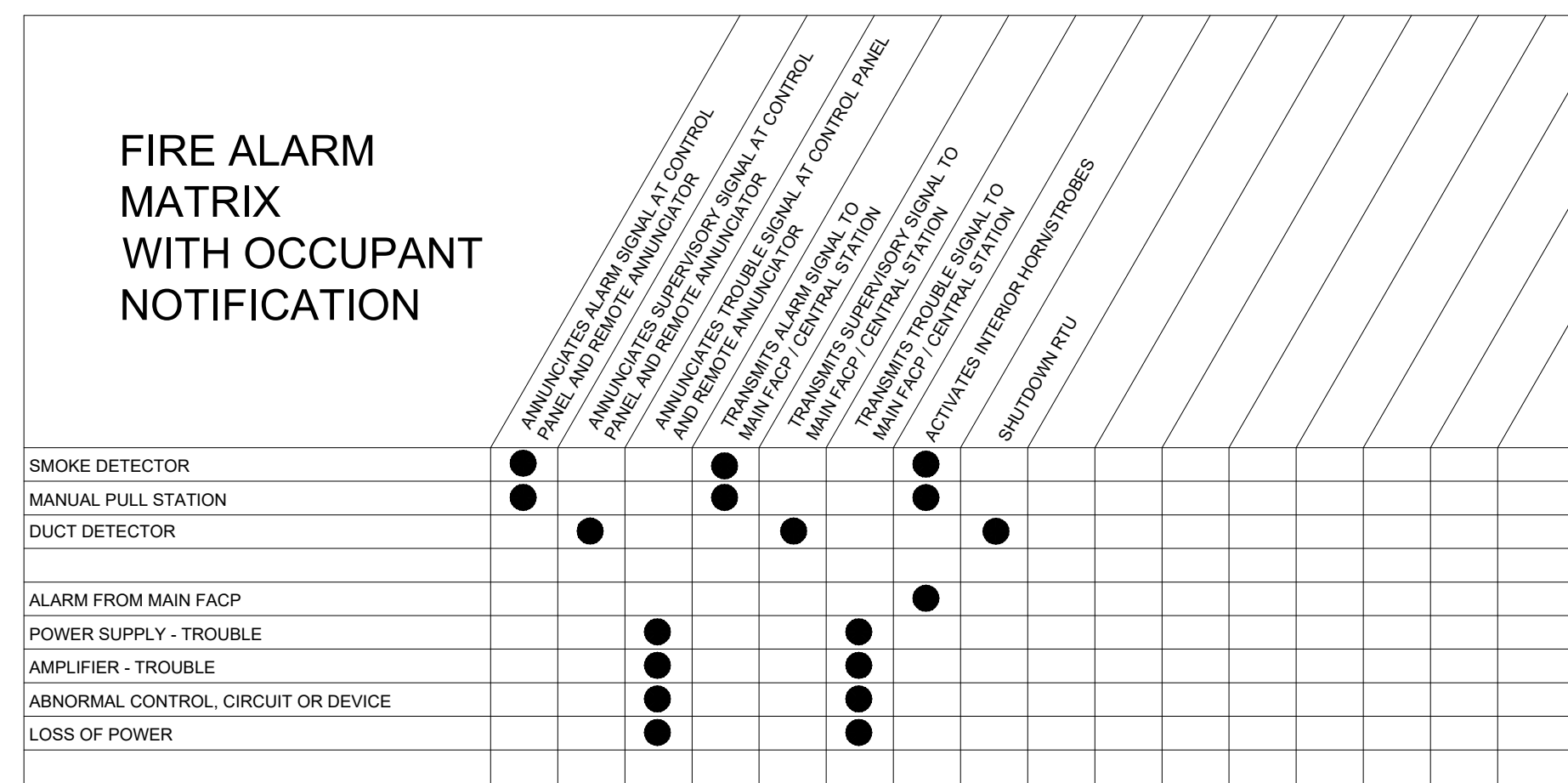
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Figure 1: Typical Alarm and Fault Signal Connections

The diagram illustrates the wiring for a fire alarm system, showing the connections between the NAC 1, AMP, SLC, and FACP modules.

NAC 1 (142 FFLP) is connected to a 120V/60Hz DEDICATED LOCKED BREAKER and TO GROUND. It has four channels (Chnl #1 to #4) connected to the FACP.

AMP (142 Shunted FFLP) is connected to a 120V/60Hz DEDICATED LOCKED BREAKER and TO GROUND. It has four channels (Chnl #1 to #4) connected to the FACP.

FACP is connected to a BATTERY and the SLC. It has four channels (Chnl #1 to #4) connected to the SLC.

SLC (142 FFLP) is connected to the FACP and provides the following signals:

- AN L1M01 ALARM FROM MAIN FACP
- AN L1M02 ALARM TO MAIN FACP
- AN L1M03 SUPERVISORY TO MAIN FACP
- AN L1M04 TROUBLE TO MAIN FACP
- F L1M05
- AN L1M06 NACP TRIGGER
- AN L1M07 AMP TRIGGER
- S L1D08
- L1D09
- AN L1M10 HVAC Shutdown
- L1D11
- AN L1M12 HVAC Shutdown
- L1D13
- AN L1M14 HVAC Shutdown
- AN L1M15 AUDIO Shutdown
- AN L1M16 AUDIO Shutdown

Standby Battery Calculations															
Notifier															
NFW-100X															
Data Woods Middle School 4401 NE Laurel court Wiley Lewis County, MO 64674															
Part Number	Description	Quantity	Standby Per Device	Current At Discharge	Alarm Per Device	Current At Discharge									
NFW-100X	Intelligent Addressable FACP-W/ Communicator	1	0.141000	0.141000	0.257000	0.257000									
FMM-1	Monitor Module	1	0.000775	0.000775	0.005000	0.005000									
FMS-1	Relay Module	9	0.000220	0.001980	0.006500	0.005850									
NFS-12-3	Addressable Manual Pull Station	1	0.000775	0.000775	0.004500	0.004500									
FPS-01	Low Profile Intelligent Photoelectric Sensor, Flashless	1	0.000199	0.000199	0.004500	0.004500									
FPS-06-01	White Low Profile Intelligent Photoelectric Sensor, Flm	3	0.000200	0.000600	0.004500	0.013500									
FCM-1	Intelligent Addressable Control Module	2	0.000350	0.000700	0.005000	0.010000									
			0.000000	0.000000	0.000000	0.000000									
			0.000000	0.000000	0.000000	0.000000									
Total Area current			Maximum Amps	2.8800	Standby	0.145	Alarm	0.474							
Signal Circuits															
Circuit	Device	Quantity				Alarm Per Device	Current At Discharge								
Circuit 1						0.000	0.000								
						0.000	0.000								
						0.000	0.000								
Total 1		Maximum Amps	2.5000			0.000	0.000								
Circuit 2						0.000	0.000								
						0.000	0.000								
						0.000	0.000								
Total 2		Maximum Amps	2.5000			0.000	0.000								
Circuit 3						0.000	0.000								
						0.000	0.000								
						0.000	0.000								
Total 3		Maximum Amps	2.5000			0.000	0.000								
Circuit 4						0.000	0.000								
						0.000	0.000								
						0.000	0.000								
Total 4		Maximum Amps	2.5000			0.000	0.000								
Totals			Maximum Amps	6		Notification Circuits Alarm	0.000	0.474							
	Circuit 1	Circuit 2	Circuit 3	Circuit 4											
Max Wire Run Distance for AWG = 14 Actual Wire run Distance Voltage Drop for 14 AWG is 0															
Voltage Drop = 2 * Wire Run Distance * 3.07 Ohms Per 1000 ft 14 AWG = Total Current for Circuit / 1000															
				<table><tr><td>Standby Hours</td><td>24</td></tr><tr><td>Standby Battery Days</td><td>0.145</td></tr><tr><td>Standby Amps Per Hour</td><td>3.465</td></tr></table>		Standby Hours	24	Standby Battery Days	0.145	Standby Amps Per Hour	3.465				
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				<table><tr><td>Alarm Minutes</td><td>5</td></tr><tr><td>Alarm Current</td><td>0.647</td></tr><tr><td>Alarm Amps Per Minutes</td><td>0.070</td></tr></table>		Alarm Minutes	5	Alarm Current	0.647	Alarm Amps Per Minutes	0.070				
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Alarm Current	0.647														
Alarm Amps Per Minutes	0.070														
				<table><tr><td>Battery Size Required with Alarm Time Minutes and 6% Reserve</td><td>4.405</td></tr></table>		Battery Size Required with Alarm Time Minutes and 6% Reserve	4.405								
Battery Size Required with Alarm Time Minutes and 6% Reserve	4.405														
Batteries Size Supplied				7	Amp Hours										

[illegible]

SPEAKER CALCULATION														
NOTIFIER														
NFC-50/100														
Speaker Circuit Load Calculation										Maximum 3 db Drop per Circuit				
SPEAKER CIRCUIT DESCRIPTION	Panel Circuit Number	Speaker Tap 25Watts	Speaker Tap 50Watts	Speaker Tap 70Watts	Speaker Tap 2x70Watts	Speaker Tap 4x70Watts	Speaker Tap 8x70Watts	Speaker Tap 15Watts	Total Circuit Watt Load (Watts)	Circuit Length (feet)	Actual V/Watt (db)	Maximum Circuit Resistance (Ohms)	Total Circuit Resistance (Ohms)	
CIRCUIT DESCRIPTION	1	1		4							-0.01	74875	1.348	
CIRCUIT DESCRIPTION	2	7							425	390	0.00	181698	1.276	
CIRCUIT DESCRIPTION	3			8					8	310	-0.03	39745	1.978	
CIRCUIT DESCRIPTION	4								5	290	-0.02	63592	1.850	
CIRCUIT DESCRIPTION	5								0		0.00	0	0.000	
CIRCUIT DESCRIPTION	6								0		0.00	0	0.000	
CIRCUIT DESCRIPTION	7								0		0.00	0	0.000	
CIRCUIT DESCRIPTION	8								0		0.00	0	0.000	
Appliance Summary									Total Load(Watts)					
Wire Size	14	8	0	17	0	0	0	0	0	19	Alarm Mins.			
Circuit Voltage	70	0.136	0	1.156	0	0	0	0	0		Max Watts.			
									1,292					
Aux Power Part Numbers	Quantity	Description				Standby	Standby Total	Alarm	Alarm Total	Max Run Time (Feet)				
NFC-50/100	1	Emergency Voice Evacuation Panel				0.272	0.272	0.446	0.446	Nac Wire Gauge				
										Nac Wire Time (feet)				
										Voltage Drop				
NAC Part Numbers	Quantity	Description				Alarm	Alarm Total	Standby Hours						
						0.446		24						
										Min. Alarm Current (Amp)				0.433
										Standby Current (Amp)				6.528
										Battery Size Required (Ah)				8.701
										Batteries Size Supplied (Ah)				18
Note: LUMP SUM METHOD WAS USED TO CALCULATE MAXIMUM ALLOWABLE CIRCUIT LENGTH. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT														

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