



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

RESERVED FOR CITY STAMP

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	4/29/2015

**CUNNINGHAM**  
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**276 CANCO ROAD**  
**PORTLAND, MAINE 04103**  
**CALCS & SECOND FLOOR FIRE ALARM PLAN**

**FPS1 Battery Calculation** 4/28/2015

PROJECT NAME: 276 CANCO ROAD  
Required Standby Time: 2 Hours  
Required Alarm Time: 5 Minutes

AC Branch Current: 3.2 Amps @ 120V

Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
FPS-24FS8 Main Circuit Board	1	0.06500	0.06500
TOTAL STANDBY LOAD			
Regulated Load in Alarm			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
FPS-24FS8 Main Circuit Board	1	0.14500	0.14500
FPS1-1 (See voltage drop codes for device quantity)	1	0.72600	0.72600
FPS1-2	1	0.44800	0.44800
FPS1-3	1	0.00000	0.00000
FPS1-4	1	0.00000	0.00000
TOTAL ALARM LOAD			
1.31900			

Battery Requirements

Current (Amps)	Required Standby Time in Hours
0.06500	X 24.00000 = 1.56000
1.31900	X 0.08333 = 0.10992
Total Standby Hours (before derating factor)	
1.2	
Derating Factor	
X	
TOTAL AMPERE HOURS REQUIRED	
= 2.00390	

BATTERIES TO BE PROVIDED (2 - 12V) 7 AH

**NAC Circuit Voltage Drop Calculation** 4/28/2015

Project Name: 276 CANCO ROAD  
Circuit Number: FPS1-1

Nominal System Voltage: 20.41 volts  
Minimum Device Voltage: 16 volts  
Distance from source to 1st device: 30  
Wire Gauge for balance of circuit: 14

Max Output Current: 1.33 amps  
Total Circuit Current: 0.726 amps

Device	Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.065	23	20.19	0.21	1%
Device 2	0.079	2	20.19	0.21	1%
Device 3	0.066	25	20.13	0.27	1%
Device 4	0.079	10	20.11	0.29	1%
Device 5	0.066	19	20.09	0.31	2%
Device 6	0.079	31	20.08	0.34	2%
Device 7	0.079	20	20.05	0.35	2%
Totals		160			

**NAC Circuit Voltage Drop Calculation** 4/28/2015

Project Name: 276 CANCO ROAD  
Circuit Number: FPS1-2

Nominal System Voltage: 20.41 volts  
Minimum Device Voltage: 16 volts  
Distance from source to 1st device: 15  
Wire Gauge for balance of circuit: 14

Max Output Current: 1.33 amps  
Total Circuit Current: 0.448 amps

Device	Current	Distance previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.079	12	20.33	0.07	0%
Device 2	0.079	35	20.27	0.13	1%
Device 3	0.079	18	20.24	0.16	1%
Device 4	0.066	2	20.24	0.16	1%
Device 5	0.079	35	20.22	0.18	1%
Totals		117			

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**UNIGAD**  
Fire Alarm Design & Drafting Services

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REVISION	DATE	CHECKED	DRAWN
0	4/29/2015	WYNNE B. HAWES NICET IV 90496	JFB UNIGAD JOB #15144

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