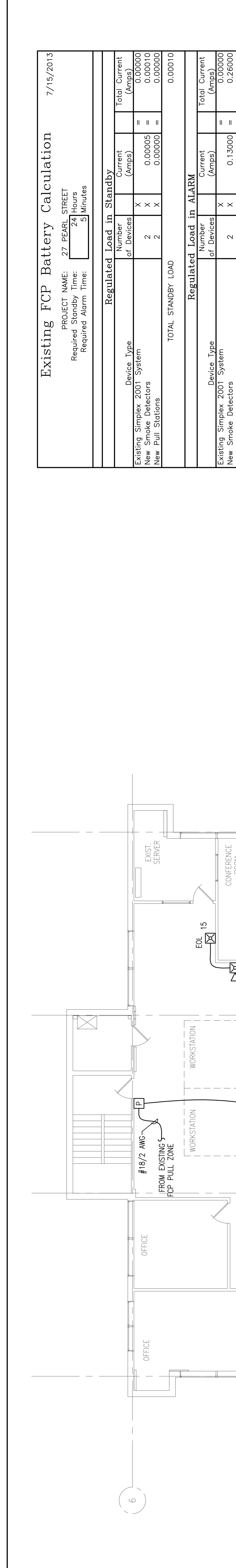


REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	7/17/2013

RESERVED FOR CITY STAMP



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

**Existing FCP Battery Calculation** 7/15/2013

PROJECT NAME: 27 PEARL STREET  
Required Standby Time: 24 Hours  
Required Alarm Time: 5 Minutes

Regulated Load in Standby			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Existing Simplex 2001 System	X	X	= 0.00000
New Smoke Detectors	2	X	0.00005 = 0.00010
New Pull Stations	2	X	0.00000 = 0.00000
TOTAL STANDBY LOAD = 0.00010			

Regulated Load in ALARM			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Existing Simplex 2001 System	X	X	= 0.00000
New Smoke Detectors	2	X	0.13000 = 0.26000
New Pull Stations	2	X	0.00000 = 0.00000
TOTAL ALARM LOAD = 0.26000			

Battery Requirements			
Standby Load Current (Amps)	Required Standby Time in Hours	Alarm Load Current (Amps)	Required Alarm Time in Hours
0.00010	X	24.00000	X
0.26000	X	0.02167	X
Total Ampere Hours (before derating factor)			
		0.08535	0.02407
			X
			1.2
TOTAL AMPERE HOURS REQUIRED = 0.02888			

**BATTERIES TO BE PROVIDED (2 - 12V) FIELD VERIFY**

NOTE: THE ABOVE BATTERY CALCULATION IS A COMBINED TOTAL OF THE ADDITIONAL LOADS THAT WILL BE ADDED FROM THE SCOPE OF THIS PROJECT. FIELD VERIFY THE SIZE OF THE EXISTING BATTERIES AND UPSIZE ACCORDINGLY.

**FPS1 Battery Calculation** 7/16/2013

PROJECT NAME: 27 PEARL STREET  
Required Standby Time: 24 Hours  
Required Alarm Time: 5 Minutes

Regulated Load in Standby			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Aitronix AL802U0ADA	1	X	0.09000 = 0.09000
TOTAL STANDBY LOAD = 0.09000			

Regulated Load in ALARM			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Aitronix AL802U0ADA	1	X	0.17500 = 0.17500
FPS1-1	1	X	0.82700 = 0.82700
FPS1-2	1	X	0.97100 = 0.97100
TOTAL ALARM LOAD = 1.97300			

Battery Requirements			
Standby Load Current (Amps)	Required Standby Time in Hours	Alarm Load Current (Amps)	Required Alarm Time in Hours
0.09000	X	24.00000	X
1.97300	X	0.16442	X
Total Ampere Hours (before derating factor)			
		0.08333	2.32442
			X
			1.2
TOTAL AMPERE HOURS REQUIRED = 2.78930			

**BATTERIES TO BE PROVIDED (2 - 12V)**

**NAC Circuit Voltage Drop Calculation** 7/16/2013

Project Name: 27 PEARL STREET  
Circuit Number: FPS1-1

Nominal System Voltage	20.4 volts
Minimum Device Voltage	16 volts
Distance from source to 1st device	14
Wire Gauge for balance of circuit	14
Max Output Current	2.0 amps
Total Circuit Current	0.827 amps

Device	Current	Distance previous device	Voltage at device	Drop from source	Percent Drop
Device 1	0.066	11	20.35	0.05	0%
Device 2	0.066	11	20.30	0.10	1%
Device 3	0.178	16	20.23	0.17	1%
Device 4	0.066	40	20.10	0.30	1%
Device 5	0.066	53	20.09	0.41	2%
Device 6	0.066	53	20.09	0.41	2%
Device 7	0.066	22	19.97	0.43	2%
Device 8	0.079	8	19.97	0.43	2%
Device 9	0.066	7	19.96	0.44	2%
Totals	0.827	171			

**NAC Circuit Voltage Drop Calculation** 7/16/2013

Project Name: 27 PEARL STREET  
Circuit Number: FPS1-2

Nominal System Voltage	20.4 volts
Minimum Device Voltage	16 volts
Distance from source to 1st device	45
Wire Gauge for balance of circuit	14
Max Output Current	2.0 amps
Total Circuit Current	0.971 amps

Device	Current	Distance previous device	Voltage at device	Drop from source	Percent Drop
Device 1	0.178	21	20.13	0.27	1%
Device 2	0.066	21	20.03	0.37	2%
Device 3	0.066	27	19.91	0.49	2%
Device 4	0.079	20	19.63	0.57	3%
Device 5	0.066	23	19.76	0.96	3%
Device 6	0.066	13	19.67	0.73	4%
Device 7	0.066	7	19.67	0.73	4%
Totals	0.971	174			