

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	11/1/2013

RESERVED FOR CITY STAMP

FCP Battery Calculation		11/1/2013
PROJECT NAME:	CENTRAL PROVISIONS	
Required Standby Time:	24 Hours	
Required Alarm Time:	5 Minutes	

Regulated Load in Standby			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
MS-9050UD Main Circuit Board	1	0.12000	0.12000
ANN-80 Remote Annunciator	1	0.01500	0.01500
SD355 Smoke Detector	2	0.00030	0.00060
D355PPL Duct Detector	3	0.00040	0.00120
MMF-300 Monitor Module	5	0.00075	0.00375
MDF-12LX Pull Station	2	0.00023	0.00046
CRF-300 Relay Module	2	0.00027	0.00054
RTS-151 Remote Test Station	2	0.00000	0.00000
TOTAL STANDBY LOAD			0.14185

Regulated Load in Alarm			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
MS-9050UD Main Circuit Board	1	0.20000	0.20000
ANN-80 Remote Annunciator	1	0.04000	0.04000
All Addressable Devices - Maximum Draw	2	0.01200	0.02400
RTS-151 Remote Test Station	1	1.12600	1.12600
NAC-1	1	0.42800	0.42800
NAC-2	1	0.42800	0.42800
TOTAL ALARM LOAD			2.21800

Battery Requirements			
Standby Load Current (amps)	0.14185	X	Required Standby Time in Hours
Standby Load Current (amps)	2.21800	X	Required Alarm Time in Hours
Total Amperes Hours (before derating factor)	0.08533	=	0.18483
Derating Factor		X	
TOTAL AMPERE HOURS REQUIRED			4.30708
BATTERIES TO BE PROVIDED (2 - 12V)			7 AH

NAC Circuit Voltage Drop Calculation			
Project Name	CENTRAL PROVISIONS	10/31/2013	
Circuit Number	NAC-1		
Nominal System Voltage	20.4 volts	Wire Gauge	14
Minimum Device Voltage	16 volts	Resistance Per 1000	6.14
Distance from source to 1st device	25		
Wire Gauge for balance of circuit			
Max Output Current	1.5 amps		
Total Circuit Current	1.126 amps		

Circuit is within limits			
Device	Distance previous device	Voltage at Device	Drop from source
Device 1	0.107	20.23	0.17
Device 2	0.107	19.97	0.43
Device 3	0.176	19.86	0.54
Device 4	0.107	19.81	0.59
Device 5	0.079	19.69	0.71
Device 6	0.066	19.67	0.73
Device 7	0.066	19.64	0.76
Device 8	0.176	19.60	0.80
Device 9	0.066	19.59	0.81
Device 10	0.176	19.55	0.85
Totals	1.126	198	

MAC Circuit Voltage Drop Calculation			
Project Name	CENTRAL PROVISIONS	10/31/2013	
Circuit Number	NAC-2		
Nominal System Voltage	20.4 volts	Wire Gauge	14
Minimum Device Voltage	16 volts	Resistance Per 1000	6.14
Distance from source to 1st device	55		
Wire Gauge for balance of circuit			
Max Output Current	1.0 amps		
Total Circuit Current	0.428 amps		

Circuit is within limits			
Device	Distance previous device	Voltage at Device	Drop from source
Device 1	0.107	20.26	0.14
Device 2	0.107	20.20	0.20
Device 3	0.107	20.19	0.21
Device 4	0.107	20.17	0.23
Totals	0.428	116	



BASEMENT FIRE ALARM PLAN
SCALE: 1/4"=1'-0"

CUNNINGHAM

Security Systems

10 Prices Point Road, Yarmouth, Maine 04096
Office: 207.846.3350 • Fax: 207.846.6080

CALCS & BASEMENT FIRE ALARM PLAN

PORTLAND, MAINE 04101

414 FORE STREET

CENTRAL PROVISIONS

DRAWN	JPB	UNICAD JOB #13638
CHECKED	WAYNE B HANS	NCET W 90496
DATE	10/31/2013	
REVISION	0	
SCALE	1/4"=1'-0"	

FA-2

INCORPORATING
578 W. 40TH ST.
PORTLAND, ME 04106
OFFICE: 851.865.0410
www.unicad.net
Fire Alarm Design & Drafting Services

- SHEET NOTES:**
- ADDRESSABLE MONITOR MODULE AND DUAL MONITOR MODULE(S) PROVIDED TO MONITOR ALL WATER FLOW, PRESSURE SWITCHES, TAMPER SWITCHES AND POST INDICATING VALVES ASSOCIATED WITH THE FIRE SPRINKLER SYSTEM. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY EXACT QUANTITY AND LOCATION(S).
 - ADDRESSABLE RELAY MODULE(S) PROVIDED FOR FAN SHUT DOWN. TIE TO INDICATED UNIT FAN CONTROLLER. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. FIELD VERIFY POWER SOURCE. USE MULTI-VOLTAGE CONTROL RELAY(S) IF REQUIRED. FIELD VERIFY EXACT QUANTITY AND LOCATION(S) WITH MECHANICAL DIVISION.
 - DUCT SMOKE DETECTORS PROVIDED FOR THE RETURN AIR PATH AT ALL AIR HANDLING UNITS HAVING A CAPACITY GREATER THAN 2,000 CFM AND FOR THE SUPPLY AIR PATH AT ALL AIR HANDLING UNITS HAVING A CAPACITY GREATER THAN 15,000 CFM. INSTALLING CONTRACTOR SHALL FIELD VERIFY EXACT MOUNTING, CIRCUITING AND PROGRAMMING REQUIREMENTS. PROVIDE FOR SHUT DOWN OF ASSOCIATED UNIT FAN(S). FIELD VERIFY UNIT POWER SOURCE. USE MULTI-VOLTAGE CONTROL RELAY(S) IF REQUIRED. FIELD VERIFY EXACT QUANTITY AND LOCATION(S) WITH MECHANICAL DIVISION. PROVIDE REMOTE TEST STATION IN A LOCATION ACCEPTABLE TO THE LOCAL AHJ WHEN IN-DUCT SMOKE DETECTOR INDICATOR IS NOT VISIBLE TO RESPONDING PERSONNEL.