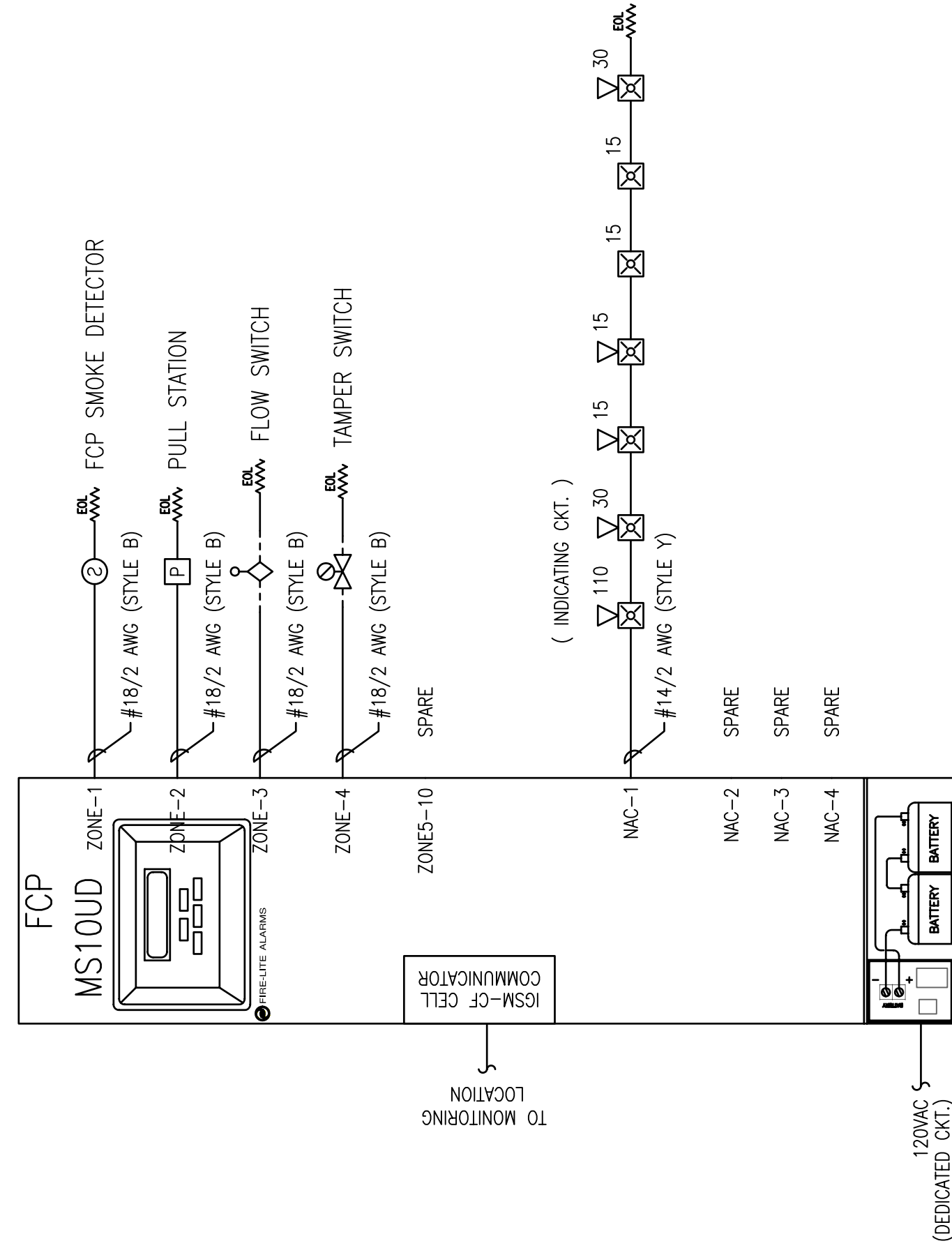


FIRE ALARM PLAN  
SCALE: 1/8"=1'-0"



FIRE ALARM RISER DIAGRAM  
SCHEMATIC: NO SCALE

GENERAL NOTES:

- THESE DRAWINGS ARE DIAGRAMMATIC. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.
- INSTALLATION SHALL COMPLY WITH NEC, NFPA 72 AND ALL OTHER APPLICABLE CODES AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- WIRING DEPICTED ON THESE PLANS IS SCHEMATIC - ACTUAL WIRE LOCATIONS MAY DIFFER FROM THESE PLANS. WIRING SHALL BE PERFORMED AS ACTUAL BUILDING CONSTRUCTION CONDITIONS ALLOW AND TO MINIMIZE PENETRATIONS THROUGH AREA SEPARATION WALLS AND FIRE WALLS. THE USE OF RACEWAY IS PERMITTED AS LONG AS NO 110V OR HIGHER VOLTAGE CABLES ARE IN THE SAME RACEWAY.
- FIRE RATINGS SHALL BE MAINTAINED FOR ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION.
- POWER FOR ALL FIRE ALARM PANELS AND FIRE ALARM POWER SUPPLIES MUST BE PROVIDED BY A DEDICATED AC BRANCH CIRCUIT.
- POWER-LIMITED AND NONPOWER-LIMITED CIRCUIT WIRING MUST REMAIN SEPARATED IN CABINET. ALL POWER-LIMITED CIRCUIT WIRING MUST BE AT LEAST 3/25" AWAY FROM ANY NONPOWER-LIMITED CIRCUIT WIRING. FURTHERMORE, ALL POWER-LIMITED AND NONPOWER-LIMITED CIRCUIT WIRING MUST ENTER AND EXIT THE CABINET THROUGH DIFFERENT KNOCK OUTS AND/OR SEPARATE CONDUITS.
- WHEN UTILIZING CLASS "A" CIRCUITS, SEPARATE OUTGOING AND RETURN CONDUCTORS OF CLASS "A" CIRCUITS BY A MINIMUM OF 12" WHERE RUN VERTICALLY AND 48" WHERE RUN HORIZONTALLY.
- WHEN UTILIZING SHIELDED CABLE TIE SHIELDS THROUGH AND INSULATE AT EACH JUNCTION BOX. INSULATE AND TAPE BACK AT END.
- ALL FIRE ALARM CABLING SHALL BE ACCEPTABLE TO THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE.
- SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER CONSTRUCTION CLEAN-UP IS COMPLETED AND FINAL.
- LOCATE SMOKE DETECTORS A MINIMUM OF THREE (3) FEET FROM MECHANICAL DIFFUSERS, WALL-MOUNTED SMOKE DETECTORS SHALL BE LOCATED A MINIMUM OF 4" AND A MAXIMUM OF 12" FROM CEILING. CEILING-MOUNTED SMOKE DETECTORS SHALL BE MOUNTED ON CEILINGS AND NOT ON THE BOTTOMS OF BEAMS OR JOISTS.
- PROVIDE SYNCHRONIZATION OF ALL VISUAL NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ALL REQUIRED SYNC MODULES. PROVIDE A MULTI-SYNC MODE SLAVE CONNECTION BETWEEN ALL SYNC MODULES.
- VERIFY ALL FIELD SELECTABLE AUDIBILITY SETTINGS OF NOTIFICATION APPLIANCES WITH FIRE ALARM CONTRACTOR.
- UPON COMPLETION OF THE FIRE ALARM SYSTEM INSTALLATION AND PROGRAMMING, THE INSTALLING CONTRACTOR SHALL PERFORM FINAL TESTING OF THE ENTIRE SYSTEM, PER ALL APPLICABLE CODES, AND SHALL COORDINATE AND PERFORM A FINAL FIRE ALARM SYSTEM INSPECTION.
- PROVIDE OFF-SITE MONITORING AS REQUIRED BY THE INTERNATIONAL FIRE CODE, SECTION 907.15 AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- INSTALLING CONTRACTOR SHALL PHYSICALLY LABEL ALL INITIATING DEVICES AND NOTIFICATION APPLIANCE CIRCUIT END OF LINE (WHEN WIRING CLASS "B"). THESE LABELS SHALL BE IN PLACE PRIOR TO START-UP AND TESTING.

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING
FCP	FIRE ALARM CONTROL PANEL	WALL-TOP @ 66"
FPS	FIRE ALARM POWER SUPPLY	FIELD VERIFY
FSA	FIRE SYSTEM ANNUNCIATOR	WALL-TOP @ 66"
FSD	FIRE/SMOKE DAMPER	BY OTHERS
⊙	SMOKE DETECTOR	CEILING
⊖	DUCT SMOKE DETECTOR	BY OTHERS
⊕	HEAT DETECTOR	CEILING
Ⓜ	ADDRESSABLE CONTROL MODULE	FIELD VERIFY
Ⓜ	ADDRESSABLE MONITOR MODULE	FIELD VERIFY
P	MANUAL PULL STATION	WALL @ 48"
R	CONTROL RELAY (MULTI-VOLTAGE)	FIELD VERIFY
RM	ADDRESSABLE RELAY MODULE	FIELD VERIFY
⊖	MAGNETIC DOOR HOLDER	FIELD VERIFY
⊖	WATER FLOW SWITCH	BY OTHERS
⊖	VALVE TAMPER SWITCH	BY OTHERS
Ⓜ	BELL	BY OTHERS
Ⓜ	CEILING MOUNT STROBE	FIELD VERIFY
Ⓜ	CEILING MOUNT HORN / STROBE	FIELD VERIFY
Ⓜ	CEILING MOUNT SPEAKER / STROBE	FIELD VERIFY
Ⓜ	HORN	WALL @ 10'-0"
Ⓜ	HORN / STROBE	WALL 80"-96"
Ⓜ	SPEAKER / STROBE	WALL 80"-96"
Ⓜ	SPEAKER	WALL @ 90"
Ⓜ	STROBE	WALL 80"-96"

ABBREVIATION	DESCRIPTION
E	EXISTING
G	WITH GUARD
P	PENDANT MOUNT
R	RESIDENTIAL (110V)
S	SOUNDER BASE
WP	WEATHER PROOF
EOL	END OF LINE RESISTOR
EOLR	END OF LINE RELAY
AWG	AMERICAN WIRE GAUGE
TWP	TWISTED PAIR
TWSP	TWISTED SHIELDED PAIR
FPLP	FIRE POWER LIMITED PLENUM
FPLR	FIRE POWER LIMITED RISER

FCP Battery Calculation

PROJECT NAME: 250 REED STREET  
Required Standby Time: 24 Hours  
Required Alarm Time: 5 Minutes

Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Main Circuit Board (MS-100D)	1	0.08500	0.08500
ICSM-CF Cell Communicator	1	0.04000	0.04000
Smoke Detectors, 2W-B	1	0.00005	0.00005
Pull Stations, BG12	1	0.00000	0.00000
TOTAL STANDBY LOAD 0.12505			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Main Circuit Board (MS-100D)	1	0.17500	0.17500
ICSM-CF Cell Communicator	1	0.20000	0.20000
Smoke Detectors, 2W-B	1	0.13000	0.13000
Pull Stations, BG12	1	0.00000	0.00000
NAC-1	1	0.71600	0.71600
TOTAL ALARM LOAD 1.22100			

Standby Load Current (Amps)	Required Standby Time in Hours
0.12505	24.00000
= 3.00120	
Alarm Load Current (Amps)	Required Alarm Time in Hours
1.22100	0.08333
= 0.10175	
Total Ampere Hours (before derating factor) 3.10295	
Derating Factor X 1.2	
TOTAL AMPERE HOURS REQUIRED = 3.72354	
BATTERIES TO BE PROVIDED (2 - 12V) 7 AH	

NAC Circuit Voltage Drop Calculation

PROJECT NAME: 250 REED STREET  
Circuit Number: NAC-1

Nominal System Voltage	Wire	Resistance Per 1000
20.4 volts	14	6.14
18 volts	6	6.14
Max. Output Current	3.0 amps	
Total Circuit Current	0.716 amps	

Device	Distance Previous device	Voltage at Device	Drop from source	Percent Drop
Device 1	0.212	20.37	0.03	0%
Device 2	0.107	20.26	0.14	1%
Device 3	0.079	20.20	0.20	1%
Device 4	0.079	20.19	0.21	1%
Device 5	0.066	20.17	0.23	1%
Device 6	0.066	20.14	0.26	1%
Device 7	0.107	20.13	0.27	1%
Totals	0.716	1.35		

**CUNNINGHAM**  
Security Systems  
10 Prices Point Road, Yarmouth, Maine 04096  
Office: 207.846.3350 • Fax: 207.846.6080

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	3/26/2012

250 REED STREET  
FIRE ALARM PLAN

UNICAD Inc.  
Fire Alarm Design & Drafting Services  
www.unicad.net  
1800 Cambridge Street, Suite 200  
Providence, RI 02903  
Phone: 401.883.9010  
Fax: 401.883.9011

JPB UNICAD JOB #12120  
WAYNE B. HAWES  
NICET # 90496  
DATE 3/23/2012  
REVISION 0  
SCALE 1/8" = 1'-0"

**FA-1**