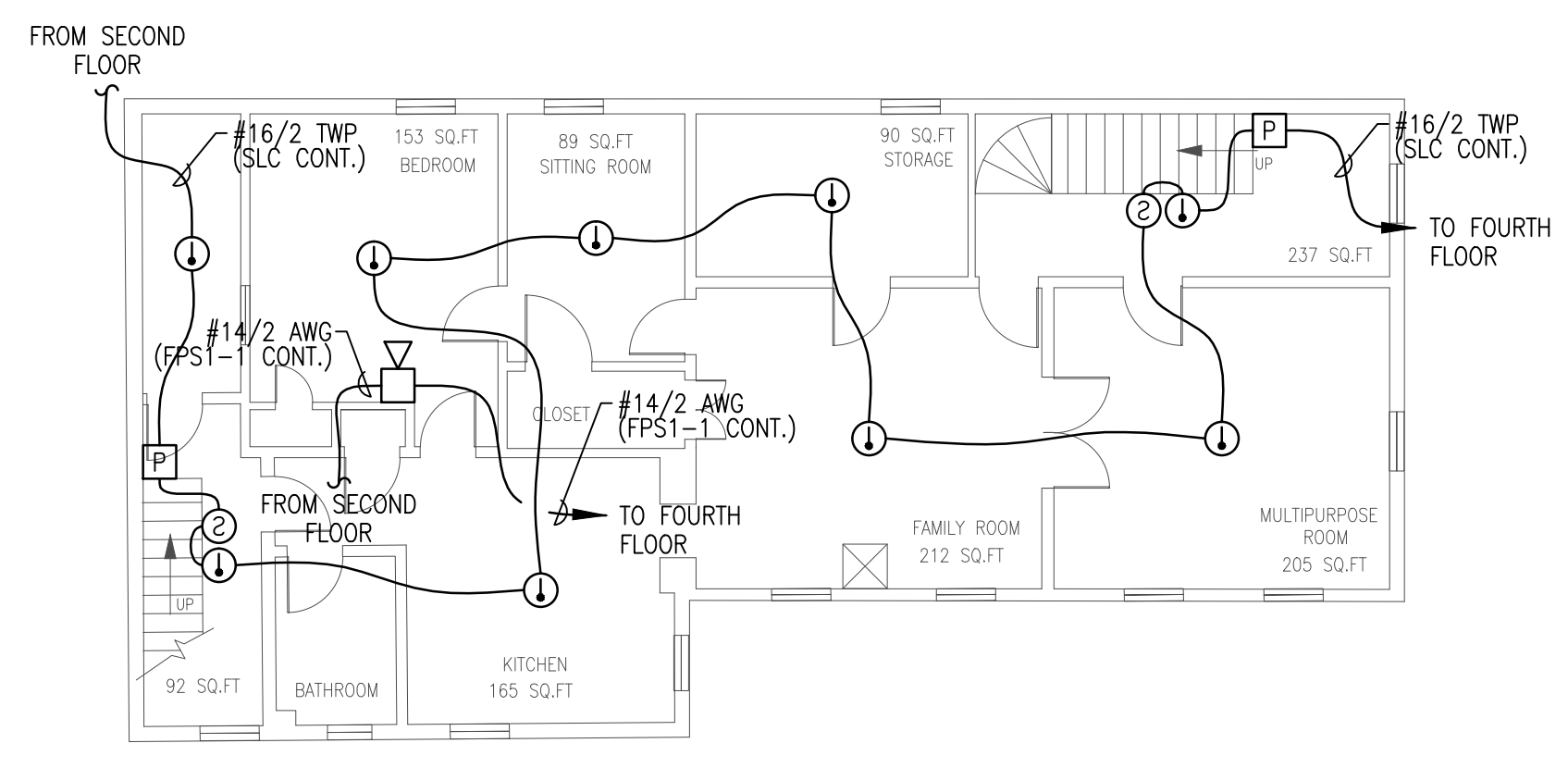


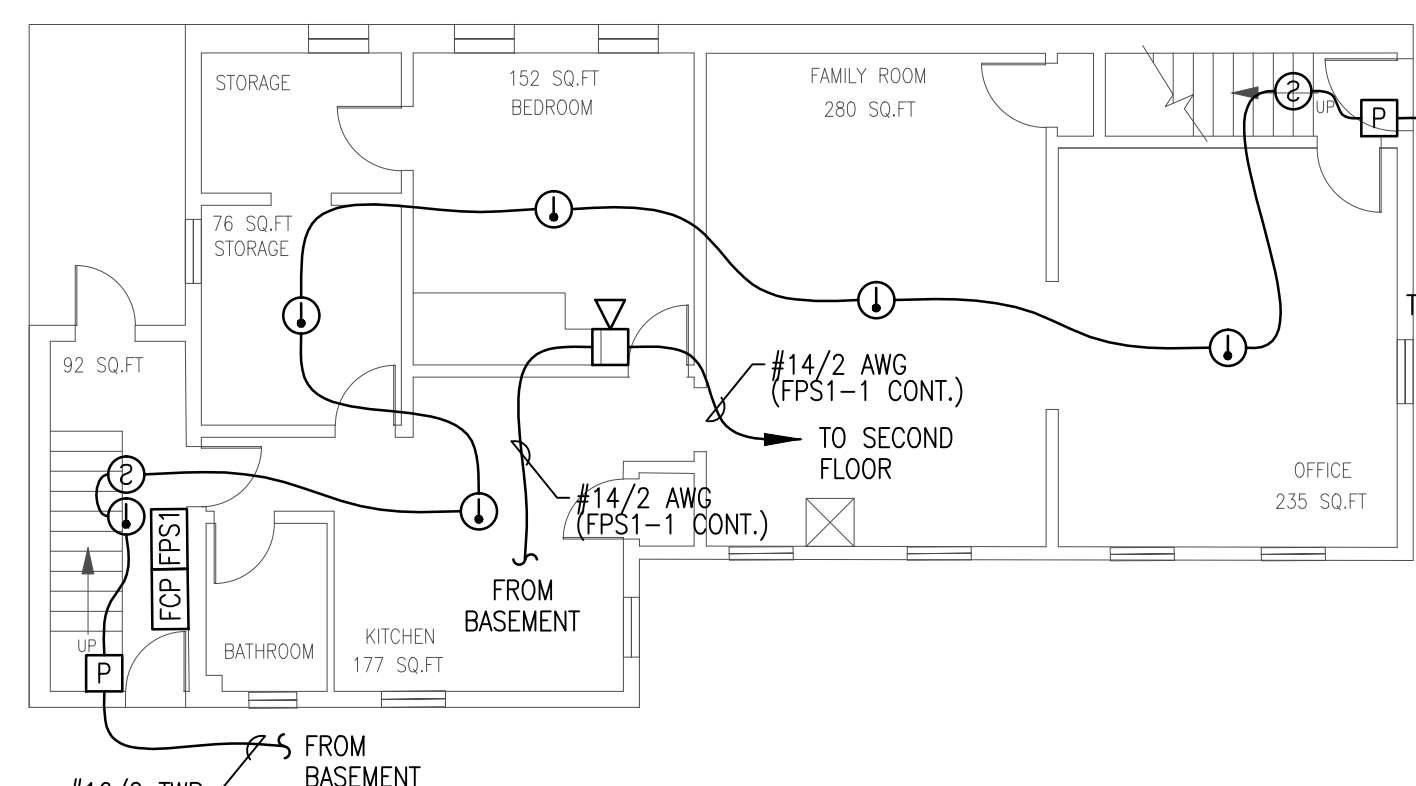
**BASEMENT FIRE ALARM PLAN**

SCALE: 1/8"=1'-0" 0 4 8 16



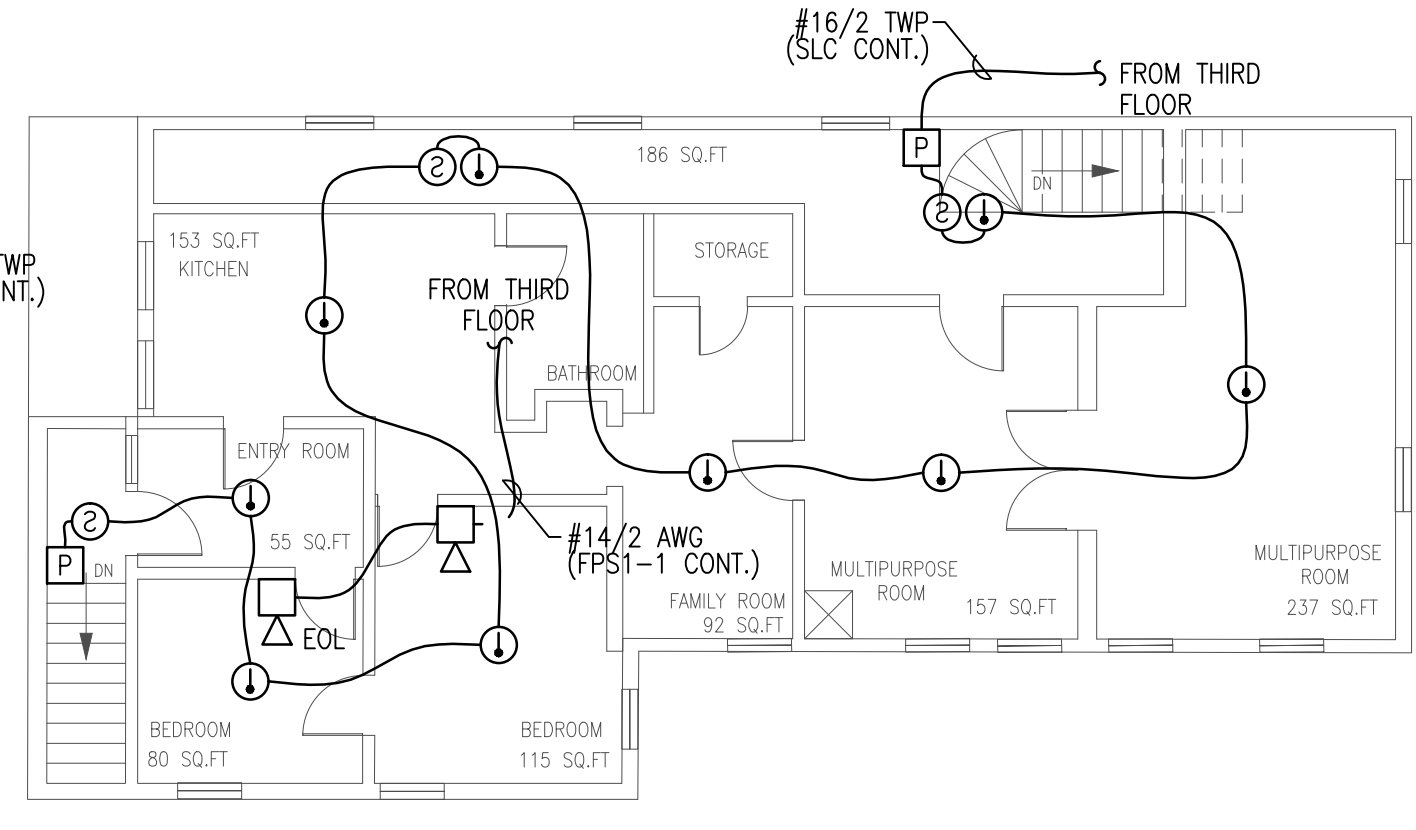
**THIRD FLOOR FIRE ALARM PLAN**

SCALE: 1/8"=1'-0" 0 4 8 16



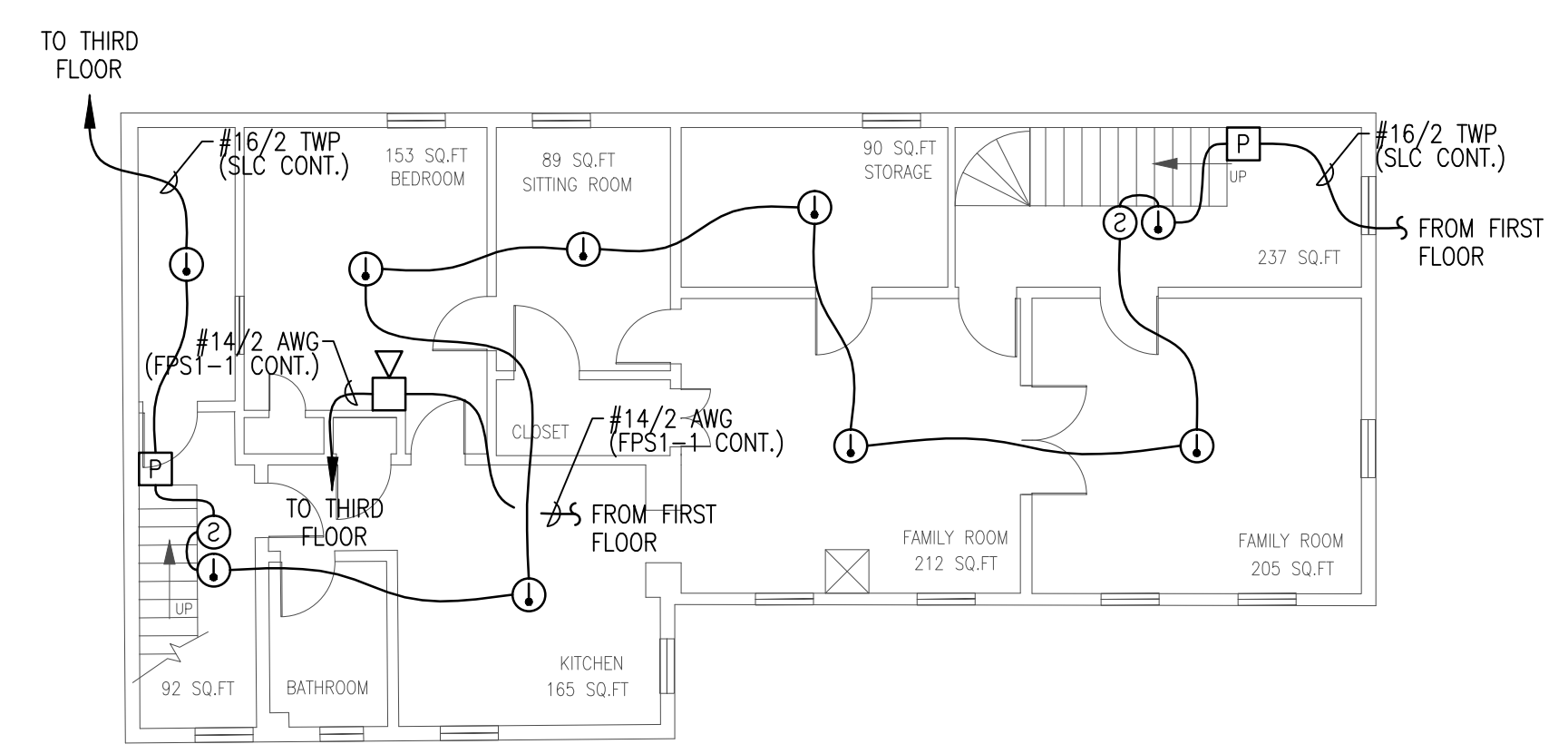
**FIRST FLOOR FIRE ALARM PLAN**

SCALE: 1/8"=1'-0" 0 4 8 16



**FOURTH FLOOR FIRE ALARM PLAN**

SCALE: 1/8"=1'-0" 0 4 8 16



**SECOND FLOOR FIRE ALARM PLAN**

SCALE: 1/8"=1'-0" 0 4 8 16

**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 A 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 REMAIN AT LEAST 0.25" 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**

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT

| 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        |
| SIM    | SERIAL INTERFACE MODULE        | FIELD VERIFY   |
| CM     | ADDRESSABLE CONTROL MODULE     | FIELD VERIFY   |
| MM     | 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   |
| ⊙      | MINI 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            | PENDENT 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  |

SPEAKER WATTAGE (W) 75 STROBE CANDELA 30  
 ⊙ DEVICE ADDRESS ⊙  
 L1D001 OR D01  
 (L - DENOTES LOOP #)  
 (D or M - DENOTES DETECTOR OR MODULE #)  
 ⊙ #16/2 TWP WIRE TYPE ABBREVIATED CONDUCTOR COUNT WIRE SIZE # OF CABLES (IF OMITTED ONLY 1 CABLE NEEDED)

**OPERATIONS MATRIX**

|                          | FIRE ALARM OUTPUT | ACTIVATE ALARM INDICATOR | ACTIVATE AUDIBLE ALARM | ACTIVATE TROUBLE INDICATOR | ACTIVATE AUDIBLE TROUBLE INDICATOR | TRANSMIT ALARM SIGNAL | TRANSMIT TROUBLE SIGNAL |
|--------------------------|-------------------|--------------------------|------------------------|----------------------------|------------------------------------|-----------------------|-------------------------|
| FIRE ALARM INPUT         |                   |                          |                        |                            |                                    |                       |                         |
| SMOKE DETECTORS          | ●                 | ●                        | ●                      |                            |                                    |                       |                         |
| HEAT DETECTORS           | ●                 | ●                        | ●                      |                            |                                    |                       |                         |
| PULL STATIONS            | ●                 | ●                        | ●                      |                            |                                    |                       |                         |
| FIRE ALARM AC POWER FAIL |                   |                          |                        | ●                          | ●                                  |                       | ●                       |
| FIRE ALARM LOW BATTERY   |                   |                          |                        | ●                          | ●                                  |                       | ●                       |
| OPEN CIRCUIT             |                   |                          |                        | ●                          | ●                                  |                       | ●                       |
| GROUND FAULT             |                   |                          |                        | ●                          | ●                                  |                       | ●                       |
| NAC SHORT CIRCUIT        |                   |                          |                        | ●                          | ●                                  |                       | ●                       |
| LOSS OF AC TO BUILDING   |                   |                          |                        | ●                          | ●                                  |                       | ●                       |

| REVISION | DESCRIPTION                  | DATE     |
|----------|------------------------------|----------|
| 0        | ISSUED FOR REVIEW & APPROVAL | 2/7/2013 |

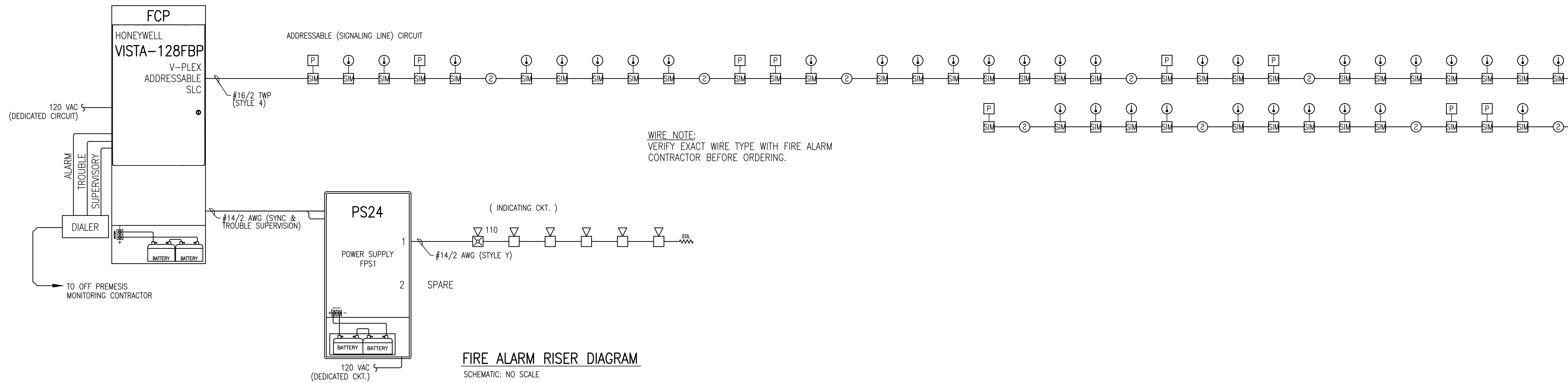
**CUNNINGHAM**  
**Security Systems**  
 10 Princes Point Road, Yarmouth, Maine 04096  
 Office: 207.846.3350 • Fax: 207.846.6080

**33 HAMPSHIRE STREET  
 PORTLAND, MAINE  
 FIRE ALARM PLAN**

|          |                             |
|----------|-----------------------------|
| DRAWN    | JPB UNICAD JOB #13041       |
| CHECKED  | WAYNE B. HAWS NICET N 90496 |
| DATE     | 2/4/2013                    |
| REVISION | 0                           |
| SCALE    | 1/8"=1'-0"                  |

shop drawings created by  
 5784 W. 4900 St.  
 Haverhill, UT 84315  
 Office: 801.985.0410  
**UNICAD** Inc.  
 Fire Alarm Design & Drafting Services  
 www.unicad.net

**FA-1**



| Facility Information |                     | Standby and Alarm Times                             |      | Battery Contingency |     |
|----------------------|---------------------|---|------|---------------------|-----|
| Location:            | 33 HAMPSHIRE STREET | Battery Standby (hours):                            | 24   | Factor:             | 10% |
| Account #:           |                     | Alarm Duration (minutes):                           | 5    |                     |     |
| Model:               | Vista-128FBP        | Recommended Battery (AH):                           | 13.2 |                     |     |
| Engineer:            |                     | Recommended Battery Capacity OK for 48-Hr Recharge: |      |                     |     |
| Date:                | 2/7/2013            |   |      |                     |     |

| SELECTED PANEL MAXIMUM OUTPUT RATINGS |                      |                              |                            |                          |                  |                     |                     |                              |                            |                                 |
|---------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|------------------|---------------------|---------------------|------------------------------|----------------------------|---------------------------------|
| PANEL:                                | Polling (VLoop (mA)) | Standby Auxiliary Power (mA) | Alarm Auxiliary Power (mA) | Panel Standby Alarm (mA) | Panel Alarm (mA) | Bell #1 Output (mA) | Bell #2 Output (mA) | Maximum Panel Standby Output | Maximum Panel Alarm Output | Max. Battery Supported by Panel |
| Vista-128FBP                          | 128                  | 1000                         | 1700                       | 300                      | 470              | 1700                | 1700                | 1300                         | 2800                       | 34.4                            |
| Calculated Current Draw               | 76.8                 | 95                           | 250                        |                          |                  | 0                   | 0                   | 172                          | 327                        |                                 |
| Power Budget                          | 51.2                 | 905.0                        | 1450.0                     |                          |                  | 1700.0              | 1700.0              | 1128.2                       | 2473.2                     |                                 |
|                                       | Current OK           | Current OK                   | Current OK                 |                          |                  | Current OK          | Current OK          | Current OK                   | Current OK                 | Ext. UL Power Req'd (mA): 0.0   |

| AUXILIARY POWERED DEVICES        | Enter Quantity | How many powered by 48V? | Standby (aux per) | Alarm Current (aux) | Polling Loop | Total Polling Loop | Total Standby Current | Total Alarm Current | Total External Current Required |
|----------------------------------|----------------|--------------------------|-------------------|---------------------|--------------|--------------------|-----------------------|---------------------|---------------------------------|
| PS24 24 VOLT POWER SUPPLY MODULE | 1              | 0                        | 50                | 100                 |              |                    | 50                    | 110                 |                                 |

| POLLING LOOP DEVICES  | Enter Quantity | How many powered by 48V? | Standby (aux per) | Alarm Current (aux) | Polling Loop | Total Polling Loop | Total Standby Current | Total Alarm Current | Total External Current Required |
|-----------------------|----------------|--------------------------|-------------------|---------------------|--------------|--------------------|-----------------------|---------------------|---------------------------------|
| 4193SN TWO ZONE SIM   | 44             | 0                        |                   |                     | 1.5          | 66                 |                       |                     |                                 |
| 5192SD SMOKE DETECTOR | 9              | 0                        |                   |                     | 1.2          | 10.8               |                       |                     |                                 |

| Standby/Alarm Durations   |       | Battery Contingency                                 |     |
|---------------------------|-------|---|-----|
| Battery Standby (hours):  | 24    | Factor:   | 10% |
| Alarm Duration (minutes): | 5     |   |     |
| Required Capacity (AH):   | 1.108 | Recommended Battery (AH):                           | 7.0 |
|                           |       | Recommended Battery Capacity OK for 48-Hr Recharge: |     |

| PS24 POWER SUPPLY MODULE, MAXIMUM CAPACITIES |                      |                       |                     |                       |                     |                    |                              |                            |                       |
|--|----------------------|-----------------------|---------------------|-----------------------|---------------------|--------------------|------------------------------|----------------------------|-----------------------|
| Panel 12V Standby (mA)                       | Panel 12V Alarm (mA) | Output A Standby (mA) | Output A Alarm (mA) | Output B Standby (mA) | Output B Alarm (mA) | PS24 PC Board (mA) | Maximum Panel Standby Output | Maximum Panel Alarm Output | Max. Battery Capacity |
| 472  | 797                  | 570                   | 1700                | 570                   | 1700                | 40                 | 610                          | 4180                       | 34.4                  |
| Calculated Current Draw                      | 0.0                  | 0.0                   | 0                   | 557                   | 0                   | 0                  | 40                           | 597                        |                       |
| Power Budget                                 | 471.8                | 796.8                 | 570.0               | 1143.0                | 570.0               | 1700.0             | 570.0                        | 3583.0                     |                       |

| 24V NOTIFICATION APPLIANCES | Enter Quantity | Which PS24 Output | Device Standby Load (mA) | Device Alarm Load (mA) | Subtotal A Standby | Subtotal A Alarm | Subtotal B Standby | Subtotal B Alarm |
|-----------------------------|----------------|-------------------|--------------------------|------------------------|--------------------|------------------|--------------------|------------------|
| MINI HORNS                  | 5              | A                 | 0                        | 69                     | 0                  | 345              | 0                  | 0                |
| HORN STROBES (110CD)        | 1              | A                 | 0                        | 212                    | 0                  | 212              | 0                  | 0                |

| NAC Circuit Voltage Drop Calculation |                     |            |    | 2/7/2013            |      |
|--------------------------------------|---------------------|------------|----|---------------------|------|
| Project Name                         | 33 HAMPSHIRE STREET |            |    |                     |      |
| Circuit Number                       | FPS1-1              |            |    |                     |      |
| Nominal System Voltage               | 20.4 volts          | Wire Gauge | 14 | Resistance Per 1000 | 6.14 |
| Minimum Device Voltage               | 16 volts            | Wire Gauge | 14 | Resistance Per 1000 | 6.14 |
| Distance from source to 1st device   | 20                  |            |    |                     |      |
| Wire Gauge for balance of circuit    |                     |            |    |                     |      |
| Max Output Current                   | 2.0 amps            |            |    |                     |      |
| Total Circuit Current                | 0.557 amps          |            |    |                     |      |

| Circuit is within limits |                |                          |                   |                  |              |
|--------------------------|----------------|--------------------------|-------------------|------------------|--------------|
| Device                   | Device Current | Distance previous device | Voltage at Device | Drop from source | Percent Drop |
| Device 1                 | 0.212          |                          | 20.33             | 0.07             | 0%           |
| Device 2                 | 0.069          | 30                       | 20.27             | 0.13             | 1%           |
| Device 3                 | 0.069          | 25                       | 20.23             | 0.17             | 1%           |
| Device 4                 | 0.069          | 10                       | 20.21             | 0.19             | 1%           |
| Device 5                 | 0.069          | 20                       | 20.20             | 0.20             | 1%           |
| Device 6                 | 0.069          | 12                       | 20.19             | 0.21             | 1%           |
| Totals                   | 0.557          | 117                      |                   |                  |              |

| REVISION | DESCRIPTION                  | DATE     |
|----------|------------------------------|----------|
| 0        | ISSUED FOR REVIEW & APPROVAL | 2/7/2013 |

**CUNNINGHAM**  
**Security Systems**

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

33 HAMPSHIRE STREET  
PORTLAND, MAINE

CALCULATIONS AND RISER DIAGRAM

|          |                             |
|----------|-----------------------------|
| DRAWN    | JPB UNICAD JOB #13041       |
| CHECKED  | WAYNE B. HAWS NICET N 90496 |
| DATE     | 2/4/2013                    |
| REVISION | 0                           |
| SCALE    | NONE                        |

Shop drawings created by  
5784 W. 4600 St.  
Hesper, UT 84313  
Office: 801.985.0410

**UNICAD** Inc.  
Fire Alarm Design & Drafting Services

FA-2