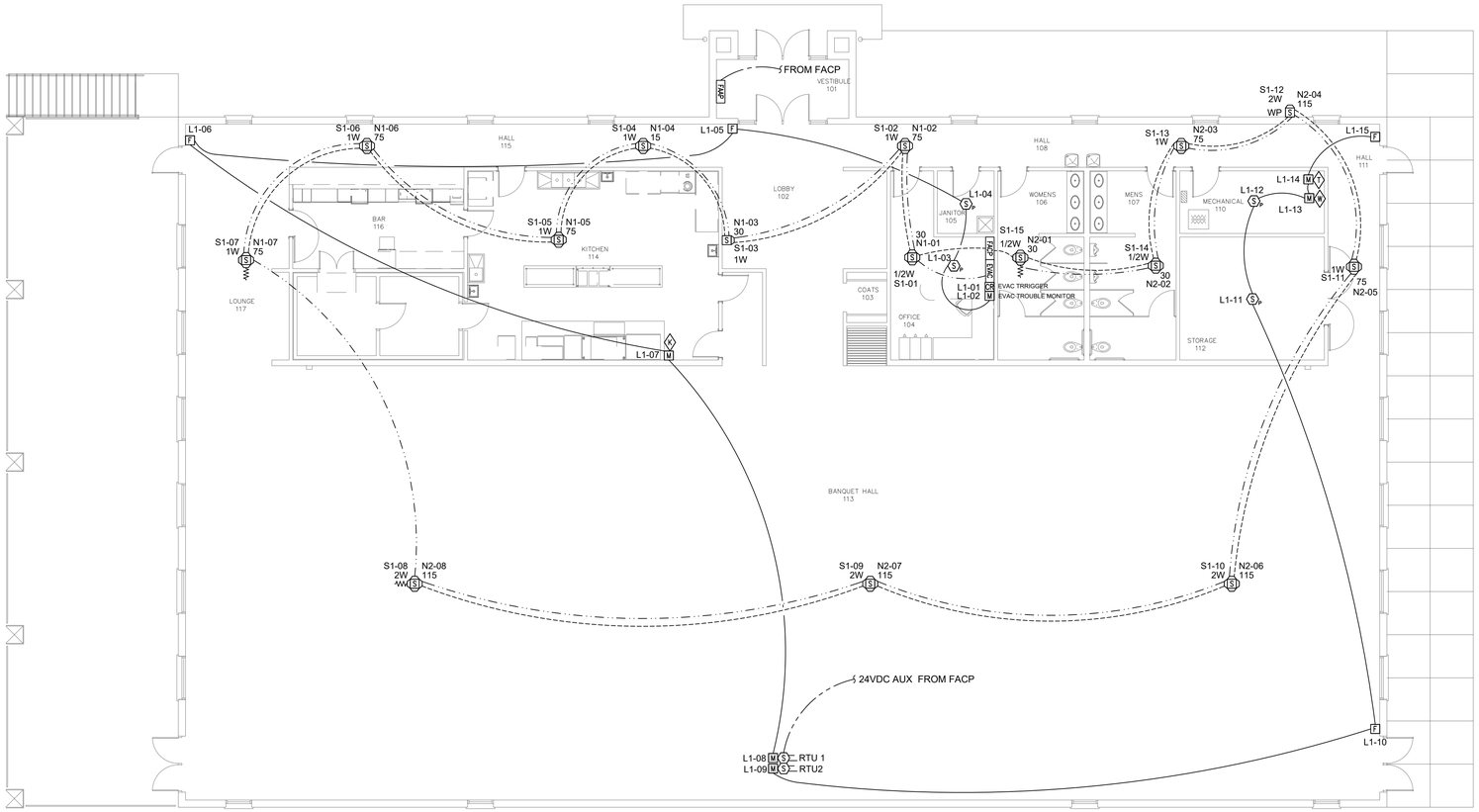



## FIRE ALARM FLOOR PLAN

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

## PROJECT INFORMATION

1. THIS SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS APPROVED BY THE AUTHORITY HAVING JURISDICTION.

2. ALL DEVICES AND APPLIANCES SHALL BE LOCATED AND MOUNTED SO THAT ACCIDENTAL OPERATION OR FAILURE IS NOT CAUSED BY VIBRATION OR JARRING.

3. EQUIPMENT SHALL BE INSTALLED IN LOCATIONS WHERE CONDITIONS DO NOT EXCEED THE VOLTAGE, TEMPERATURE, AND HUMIDITY LIMITS SPECIFIED IN THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.

4. THE SECONDARY POWER SUPPLY SHALL AUTOMATICALLY PROVIDE POWER TO THE PROTECTED PREMISES SYSTEM WITHIN 10 SECONDS WHENEVER THE PRIMARY POWER SUPPLY FAILS TO PROVIDE THE MINIMUM VOLTAGE REQUIRED FOR PROPER OPERATION.

5. INITIATING DEVICES OF THE MANUAL OR AUTOMATIC TYPE SHALL BE SELECTED AND INSTALLED SO AS TO MINIMIZE NUISANCE AND UNINTENTIONAL ALARMS.

6. ALL FIRE ALARM DEVICES SHALL COMPLY FULLY WITH ALL A.D.A. REQUIREMENTS.

7. REQUIRED SIGNALS SHALL NOT BE LOST, INTERRUPTED, OR DELAYED BY MORE THAN 10 SECONDS AS A RESULT OF THE PRIMARY POWER FAILURE.

| A.H.J. | OWNER |
|---|---|
| CITY OF JANESVILLE | |

## DEVICE LEGEND

| QTY | SYMBOL | DESCRIPTION | PART NUMBER |
|---|---|---|---|
| 1 | FACP | FIRE ALARM CONTROL PANEL | ES-50X |
| 1 | EVAC | VOICE EVAC CONTROL PANEL | ECC50 |
| 1 | FAAP | FIRE ALARM ANNUNCIATOR PANEL | ANN-80 |
| 4 | S | PHOTOELECTRIC SMOKE DETECTOR | SD365 |
| 2 | S | DUCT SMOKE DETECTOR | D4120 |
| 4 | F | MANUAL PULL STATION | BG-12LX |
| 6 | M | MONITOR MODULE | MMF-300 |
| 1 | CR | CONTROL RELAY | CRF-300 |
| 1 | W | WATERFLOW SWITCH | BY OTHERS |
| 1 | T | TAMPER VALVE | BY OTHERS |
| 1 | K | KITCHEN HOOD | BY OTHERS |
| 1 | WP S | WALL MOUNTED SPEAKER/STROBE WEATHER RESISTANT | SPSWK |
| 1 | S | WALL MOUNTED SPEAKER/STROBE | SPSWL |
| 13 | S | CEILING MOUNTED SPEAKER/STROBE | SPSCWL |

## WIRE LEGEND

| | |
|---|---|
| A | NAC 2c #14ga.FPL |
| B | SLC LOOP 2c #18ga.FPL |
| D | 24VDC AUX 2c #14ga.FPL |
| E | SPEAKER 2c #14ga.FPL SHLD |
| G | ANNUNCIATOR 4c #18ga.FPL |

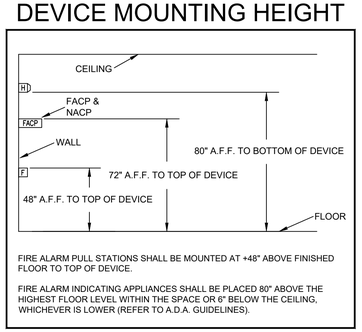
## OUTPUTS

## INPUTS

| SHUTDOWN AIR HANDLER | ILLUMINATE DUCT DETECTOR REMOTE LED | ILLUMINATE LED ON DETECTOR | SEND WATERFLOW SIGNAL TO CENTRAL STATION MONITORING | SEND SUPERVISORY SIGNAL TO CENTRAL STATION MONITORING | SEND TROUBLE SIGNAL TO CENTRAL STATION MONITORING | SEND ALARM SIGNAL TO CENTRAL STATION MONITORING | INDICATE DEVICE AND LOCATION AT FACP/FAAP | SOUND LOCAL PIEZO AT FACP | OPERATE ALL AREA AUDIOVISUAL SIGNALS | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ● | | | | ● | ● | ● | ● | SMOKE DETECTOR IN ALARM |
| ● | ● | | | ● | | | ● | ● | | DUCT SMOKE DETECTOR IN ALARM |
| | | | | | | ● | ● | ● | ● | MANUAL PULL STATION |
| | | | ● | | | ● | ● | ● | ● | SPRINKLER WATERFLOW |
| | | | | ● | | | ● | ● | | SPRINKLER TAMPER SWITCH |
| | | | | | ● | | | ● | | TROUBLE |
| | | | | | ● | | | ● | | BATTERY FAULT |
| | | | | | ● | | | ● | | GROUND FAULT |
| | | | | | ● | | | ● | | OPEN CIRCUIT |
| | | | | | ● | | | ● | | LOSS OF PRIMARY POWER |
| | | | | | ● | | | ● | | LOSS OF COMMUNICATION |
| | | | | | | ● | ● | ● | ● | KITCHEN HOOD |

## SEQUENCE OF OPERATION

## DEVICE MOUNTING HEIGHT




FIRE ALARM PULL STATIONS SHALL BE MOUNTED AT +48" ABOVE FINISHED FLOOR TO TOP OF DEVICE.

FIRE ALARM INDICATING APPLIANCES SHALL BE PLACED 80" ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE OR 6" BELOW THE CEILING, WHICHEVER IS LOWER (REFER TO A.D.A. GUIDELINES).

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

JOHN MOCKER, SET
John Mocker
NICET LEVEL IV - FIRE ALARM
TECHNICIAN ID: 1372119
EXPIRES: 11/1/2019

# FIRE ALARM SYSTEM PLAN

NEW BANQUET FACILITY
GLEN ERIN GOLF CLUB
1417 WEST AIRPORT ROAD
JANESVILLE, WI

NOTES:

| | |
|---|---|
| SQUARE FT: | 11,338 SF |
| OCCUPANCY: | A2 |
| SPRINKLERED: | YES |

SCOPE OF WORK:
INSTALL A NEW VOICE EVACUATION SYSTEM AND MONITOR SPRINKLER SYSTEM.

| | |
|---|---|
| SCALE: | AS NOTED |
| DATE: | 3/28/2019 |
| DRAWN: | JM |
| SHEET: | FA-1 OF 2 |

## FIRE-LITE ALARMS by Honeywell — ES-50X Battery Calculation

**Secondary Power Source Requirements**

| Device | Standby Current (amps) Qty | x | Current Draw | = | Total | Secondary Alarm Current (amps) Qty | x | Current Draw | = | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Main Circuit Board | 1 | x | 0.141000 | = | 0.141000 | 1 | x | 0.257000 | = | 0.257000 |
| IPOTS-COM Communicator | 1 | x | 0.040000 | = | 0.040000 | 1 | x | 0.041000 | = | 0.04100 |
| 4XTMF | 0 | x | 0.005000 | = | | 0 | x | 0.011000 | = | |
| EOLR-1 | 0 | x | 0.020000 | = | | 0 | x | 0.020000 | = | |
| CELL-MOD-FL / CELL-CAB | 0 | x | 0.055000 | = | | 0 | x | 0.100000 | = | |
| **ANN-BUS Devices** | | | | | | | | | | |
| ANN-SEC Card | 0 | x | 0.003000 | = | | 0 | x | 0.003000 | = | |
| ANN-80(-W) | 1 | x | 0.015000 | = | 0.015000 | 1 | x | 0.040000 | = | 0.040000 |
| ANN-100 | 0 | x | 0.020000 | = | | 0 | x | 0.025000 | = | |
| ANN-(R)LED | 0 | x | 0.028000 | = | | 0 | x | 0.068000 | = | |
| ANN-RLY | 0 | x | 0.015000 | = | | 0 | x | 0.075000 | = | |
| ANN-I/O | 0 | x | 0.035000 | = | | 0 | x | 0.200000 | = | |
| ANN-I/O LED | 0 | x | 0.000000 | = | | 0 | x | 0.010000 | = | |
| ANN-S/PG | 0 | x | 0.045000 | = | | 0 | x | 0.045000 | = | |
| **Addressable Devices** | | | | | | | | | | |
| BEAM355 | 0 | x | 0.002000 | = | | | | | | |
| BEAM355S | 0 | x | 0.002000 | = | | | | | | |
| CP355 | 0 | x | 0.000300 | = | | | | | | |
| SD355CO | 0 | x | 0.000300 | = | | | | | | |
| SD355 | 0 | x | 0.000300 | = | | | | | | |
| SD365 | 4 | x | 0.000300 | = | 0.001200 | | | | | |
| SD355T | 0 | x | 0.000300 | = | | | | | | |
| SD365T | 0 | x | 0.000300 | = | | | | | | |
| H355 | 0 | x | 0.000300 | = | | | | | | |
| H365 | 0 | x | 0.000300 | = | | | | | | |
| H355HT | 0 | x | 0.000300 | = | | | | | | |
| H365HT | 0 | x | 0.000300 | = | | | | | | |
| H350R | 0 | x | 0.000300 | = | | | | | | |
| H355R | 0 | x | 0.000300 | = | | | | | | |
| H365R | 0 | x | 0.000300 | = | | | | | | |
| D350RPL | 0 | x | 0.000300 | = | | | | | | |
| D355PL | 0 | x | 0.000300 | = | | | | | | |
| MMF-300 | 6 | x | 0.000400 | = | 0.002400 | | | | | |
| MMF-300-10 | 0 | x | 0.003500 | = | | | | | | |
| MDF-300 | 0 | x | 0.000750 | = | | | | | | |
| MMF-301 | 0 | x | 0.000375 | = | | | | | | |
| MMF-302 | 0 | x | 0.000270 | = | | | | | | |
| MMF-302-6 | 0 | x | 0.002000 | = | | | | | | |
| BG-12LX | 4 | x | 0.000230 | = | 0.000920 | | | | | |
| CMF-300 | 0 | x | 0.000390 | = | | | | | | |
| CMF-300-6 | 0 | x | 0.002250 | = | | | | | | |
| CRF-300 | 1 | x | 0.000270 | = | 0.000270 | | | | | |
| CRF-300-6 | 0 | x | 0.001450 | = | | | | | | |
| CDRM-300 | 0 | x | 0.001300 | = | | | | | | |
| I300 | 0 | x | 0.000400 | = | | | | | | |
| ISO-6 | 0 | x | 0.002700 | = | | | | | | |
| B501BH-2 | 0 | x | 0.001000 | = | | | | | | |
| B501BHT-2 | 0 | x | 0.001000 | = | | | | | | |
| B224RB | 0 | x | 0.000500 | = | | | | | | |
| B224BI | 0 | x | 0.000450 | = | | | | | | |
| W-GATE | 0 | x | 0.024000 | = | | | | | | |
| Maximum alarm draw for all Addressable devices ----------> | | | | | | | | | | 0.20000 |
| **Resettable Power** | | | | | | | | | | |
| 4-Wire Smoke Detectors | 0 | x | 0.000000 | = | | 0 | x | 0.000000 | = | |
| **SWIFT Wireless** | | | | | | | | | | |
| W-GATE | 0 | x | 0.040000 | = | | 0 | x | 0.040000 | = | |
| **Auxiliary Power** | | | | | | | | | | |
| CMF-300 (Aux. Power) | 0 | x | 0.001700 | = | | 0 | x | 0.007000 | = | |
| CMF-300-6 (Aux. Power) | 0 | x | 0.008000 | = | | 0 | x | 0.020000 | = | |
| MMF-302 (Aux. Power) | 0 | x | 0.012000 | = | | 0 | x | 0.090000 | = | |
| MMF-302-6 (Aux. Power) | 0 | x | 0.050000 | = | | 0 | x | 0.270000 | = | |
| B200SR (Aux. Power) | 0 | x | 0.000500 | = | | 0 | x | 0.035000 | = | |
| B200SR-LF (Aux. Power) | 0 | x | 0.001000 | = | | 0 | x | 0.125000 | = | |
| **Miscellaneous Devices** | | | | | | | | | | |
| D4120 | 2 | x | 0.021000 | = | 0.042000 | 2 | x | 0.065000 | = | 0.130000 |
| | 0 | x | 0.000000 | = | | 0 | x | 0.000000 | = | |
| | 0 | x | 0.000000 | = | | 0 | x | 0.000000 | = | |
| | 0 | x | 0.000000 | = | | 0 | x | 0.000000 | = | |
| | 0 | x | 0.000000 | = | | 0 | x | 0.000000 | = | |
| **Output Circuits** | | | | | | | | | | |
| NAC/Output #1 | | | 0.000000 | = | | | | 0.611000 | = | 0.611000 |
| NAC/Output #2 | | | 0.000000 | = | | | | 1.032000 | = | 1.032000 |
| FCPS (remote Sync) | 0 | x | 0.000000 | = | | 0 | x | 0.021700 | = | |
| | **Total Standby Load** | | | | **0.242790** | | | **Total Alarm Load** | | **2.311000** |

## FIRE-LITE ALARMS by Honeywell — ES-50X Battery Calculation

**Calculation in Total Sheet**

| | | | Required Standby Time in Hours | | |
|---|---|---|---|---|---|
| | | | 24 Hours | | |
| **Total Standby Current** | **0.2428 Amps** | x | 24 | = | 5.827 AH |
| | | | **Required Alarm Time in Minutes** | | |
| | | | 15 Minutes | | |
| **Total Alarm Load** | **2.3110 Amps** | x | 0.25 | = | 0.578 AH |
| | | | | **Total Current Load** | **6.405 AH** |
| | | Multiply by the Derating Factor | 1.2 | = | x 1.20 |
| | | | | **Total Ampere Hours Required** | **7.69 AH** |

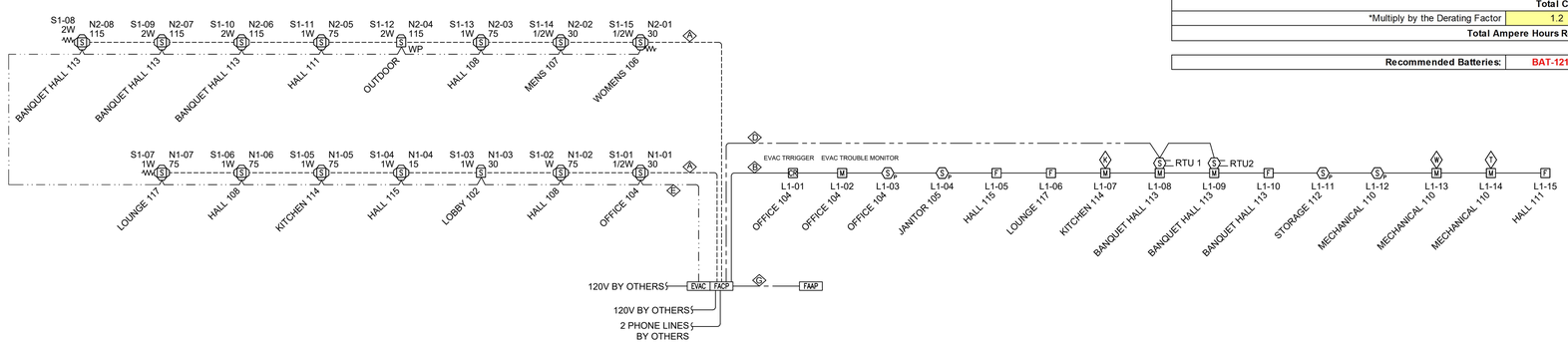
**Recommended Batteries:** BAT-12120 - 12AH Batteries

| Circuit Number | N1 | | | |
|---|---|---|---|---|
| Nominal System Voltage | | 20.4 | | |
| Minimum Device Voltage | | 16 | | |
| Total Circuit Current | 0.611 | | Wire Gauge | Ohm's Per 1000 |
| Wire Gauge for balance of circuit | | | 14 | 3.07 |
| Enter current in amps .150 = 150 ma | | | | |
| Device Number | Device Current | Distance from previous device | At Device | Voltage Drop from source | Percent Drop |
| START | | | 20.40 | 0.000 | 0.00% |
| N1-01 | 0.063 | 23 | 20.31 | 0.086 | 0.42% |
| N1-02 | 0.111 | 28 | 20.21 | 0.189 | 0.93% |
| N1-03 | 0.063 | 40 | 20.06 | 0.340 | 1.67% |
| N1-04 | 0.041 | 30 | 19.95 | 0.450 | 2.21% |
| N1-05 | 0.111 | 30 | 19.84 | 0.561 | 2.75% |
| N1-06 | 0.111 | 42 | 19.68 | 0.718 | 3.52% |
| N1-07 | 0.111 | 35 | 19.55 | 0.849 | 4.16% |
| END | | | 19.55 | 0.849 | 4.16% |
| Totals | 0.611 | 226 | End of Line Voltage | | **19.55** |

| Circuit Number | N2 | | | |
|---|---|---|---|---|
| Nominal System Voltage | | 20.4 | | |
| Minimum Device Voltage | | 16 | | |
| Total Circuit Current | 1.032 | | Wire Gauge | Ohm's Per 1000 |
| Wire Gauge for balance of circuit | | | 14 | 3.07 |
| Enter current in amps .150 = 150 ma | | | | |
| Device Number | Device Current | Distance from previous device | At Device | Voltage Drop from source | Percent Drop |
| START | | | 20.40 | 0.000 | 0.00% |
| N2-01 | 0.063 | 17 | 20.29 | 0.106 | 0.52% |
| N2-02 | 0.063 | 31 | 20.10 | 0.303 | 1.48% |
| N2-03 | 0.111 | 29 | 19.91 | 0.487 | 2.39% |
| N2-04 | 0.210 | 28 | 19.74 | 0.663 | 3.25% |
| N2-05 | 0.111 | 35 | 19.51 | 0.886 | 4.34% |
| N2-06 | 0.158 | 59 | 19.14 | 1.261 | 6.18% |
| N2-07 | 0.158 | 62 | 18.74 | 1.656 | 8.12% |
| N2-08 | 0.158 | 75 | 18.27 | 2.133 | 10.46% |
| END | | | 18.27 | 2.133 | 10.46% |
| Totals | 1.032 | 337 | End of Line Voltage | | **18.27** |

**dB Loss Calculations**

| SPEAKER | SPK CIRCUIT NUMBER | WIRE GAUGE | APPLIANCES QUANTITIES / SPEAKER WATTAGE: CIRCUIT VOLTAGE | 0.25W | 0.5W | 1W | 2W | TOTAL CIRCUIT LOAD (Watts) | ESTIMATED CIRCUIT LENGTH (FEET) | ACTUAL LOSS (dB) | TOTAL CIRCUIT RESISTANCE (OHMS) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | S1 | 16 AWG | 70 V | | 3 | 8 | 4 | 17.50 W | 339 ft | -0.10 dB | 3.3 Ω |
| | | | Appliance Summary | 0 | 3 | 8 | 4 | Total Load 17.50 W | | | |




FIRE ALARM RISER DIAGRAM

SCALE: NOT TO SCALE

## FIRE-LITE ALARMS by Honeywell — ECC-50/100 Battery Calculation

**Secondary Power Source Requirements**

| Device Type | Standby Current (amps) Qty | x | Current Draw | = | Total | Secondary Alarm Current (amps) Qty | x | Current Draw | = | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. System** | | | | | | | | | | |
| ECC-50/100 Primary Console | 1 | X | 0.2720 | = | 0.2720 | 1 | X | 0.4460 | = | 0.4460 |
| ECC-50W-25V/70V*1 | 0 | X | 0.1000 | = | | 0 | X | 0.2350 | = | |
| ECC-50W-25V/70V (As Backup)*1 | 0 | X | 0.1000 | = | | 0 | X | 0.0000 | = | |
| ECC-CE6 Circuit Expander | 0 | X | 0.0200 | = | | 0 | X | 0.1890 | = | |
| ECC-RTZM | 0 | X | 0.0550 | = | | 0 | X | 0.0600 | = | |
| ECC-FFT Firefighter Telephone | 0 | X | 0.1200 | = | | 0 | X | 0.2300 | = | |
| **2. Operator Interface Devices** (Maximum of 8 total) | | | | | | | | | | |
| ECC-LOC Local Operator Console | 0 | X | 0.0850 | = | | 0 | X | 0.1000 | = | |
| ECC-RM Remote Microphone | 0 | X | 0.0500 | = | | 0 | X | 0.0640 | = | |
| ECC-RPU Remote Page Unit | 0 | X | 0.0500 | = | | 0 | X | 0.0680 | = | |
| Total Devices: | 0 | | | | | | | | | |
| **3. Additional Amplifiers** (Maximum of 8 total) | | | | | | | | | | |
| ECC-50DA | 0 | X | 0.0120 | = | | 0 | X | 0.0120 | = | |
| ECC-125DA | 0 | X | 0.0120 | = | | 0 | X | 0.0120 | = | |
| ECC-50BDA | 0 | X | 0.0120 | = | | 0 | X | 0.0120 | = | |
| Total Amplifiers: | 0 | | | | | | | | | |
| **4. Speakers (Maximum 50 Watts)** | | | | | | | | | | |
| 1/4 Watt | 0 | X | 0.0000 | = | | 0 | X | 0.0170 | = | |
| 1/2 Watt | 3 | X | 0.0000 | = | 0.0000 | 3 | X | 0.0330 | = | 0.0990 |
| 3/4 Watt | 0 | X | 0.0000 | = | | 0 | X | 0.0500 | = | |
| 1 Watt | 8 | X | 0.0000 | = | 0.0000 | 8 | X | 0.0680 | = | 0.5440 |
| 2 Watt | 4 | X | 0.0000 | = | 0.0000 | 4 | X | 0.1320 | = | 0.5280 |
| Custom Watt Tap Description | 0 | X | 0.0000 | = | | 0 | X | 0.0000 | = | |
| Total Watts: | 17.5 | | | | | | | | | |
| **5. Output Circuits** | | | | | | | | | | |
| NAC Output (2 amps maximum) | | | 0.00000 | = | | | | 0.00000 | = | |
| Non-Resettable Output (0.5 amps max) | | | 0.00000 | = | | | | 0.00000 | = | |
| **6. Additional Devices** | | | | | | | | | | |
| Power Supervision Relays | 0 | X | 0.0250 | = | | 0 | X | 0.0250 | = | |
| SP-SVC Volume Control | 0 | X | 0.0100 | = | | 0 | X | 0.0100 | = | |
| | | | **Total Standby Load** | | **0.2720** | | | **Total Alarm Load** | | **1.6170** |

*1 Select only one Additional Amplifier based on whether or not it will be used for backup purposes.

## FIRE-LITE ALARMS by Honeywell — ECC-50/100 Battery Calculation

**Calculation in Total Sheet**

| | | | Required Standby Time in Hours | | |
|---|---|---|---|---|---|
| | | | 24 Hours | | |
| **Standby Load Current (Amps)** | **0.2720 Amps** | X | 24 | = | 6.528 AH |
| | | | **Required Alarm Time in Hours** | | |
| | | | 15 Minutes | | |
| **Alarm Load Current (Amps)** | **1.6170 Amps** | X | 0.25 | = | 0.404 AH |
| | | | | **Total Current Load** | **6.93 AH** |
| | | *Multiply by the Derating Factor | 1.2 | = | x 1.20 |
| | | | | **Total Ampere Hours Required** | **8.32 AH** |

**Recommended Batteries:** BAT-12120 - 12AH Batteries

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |

JOHN MOCKER, SET
John Mocker
NICET LEVEL IV - FIRE ALARM
TECHNICAN ID: 1372.19
EXPIRES: 11/1/2019

# FIRE ALARM SYSTEM PLAN

NEW BANQUET FACILITY
GLEN ERIN GOLF CLUB
1417 WEST AIRPORT ROAD
JANESVILLE, WI

NOTES:

SQUARE FT: 11,338 SF

OCCUPANCY: A2

SPRINKLERED: YES

SCOPE OF WORK:
INSTALL A NEW VOICE EVACUATION SYSTEM AND MONITOR SPRINKLER SYSTEM.

SCALE: AS NOTED

DATE: 3/28/2019

DRAWN: JM

SHEET: FA-2 OF 2