

BATTERY STANDBY CALCULATIONS

| QTY | Model # | Description | Quiescent Current | Alarm Current | Total Quiescent Alarm |
|--------------|-----------|--|-------------------|---------------|-----------------------|
| 1 | PS-9 | Power Supply | 0.000000 | 0.050000 | 0.050000 |
| 1 | LI-LNB-E3 | Main Board - Intelligent Loop Controller | 0.081000 | 0.150000 | 0.231000 |
| 1 | LCD-E3 | LCD Keypad Display | 0.024000 | 0.028000 | 0.052000 |
| 1 | ASM-16 | Switch / LED Module | 0.011000 | 0.011000 | 0.022000 |
| 1 | AM-50 | 50 Watt Amplifier | 0.089000 | 2.209000 | 2.298000 |
| 1 | INI-VGX | Voice Gateway | 0.150000 | 0.150000 | 0.300000 |
| 1 | DACT-E3 | Digital Dialer | 0.018000 | 0.018000 | 0.036000 |
| 12 | MSTAF | Addressable Manual Station | 0.000900 | 0.011900 | 0.012800 |
| 21 | ASD-PL2F | Addressable Smoke Detector | 0.000340 | 0.043000 | 0.043340 |
| 1 | DNR | Addressable Duct Smoke Detector | 0.000250 | 0.004000 | 0.004250 |
| 4 | AMM-4F | Addressable Relay Control Module | 0.001500 | 0.000000 | 0.001500 |
| 4 | ACM-2RF | Addressable Monitor Module | 0.000900 | 0.001500 | 0.002400 |
| Total | | | 0.393390 | 3.55 | 3.943390 |

Total Quiescent x Time Required (60 Hours): **23.6034** Ah
 Total Alarm x Time Required (15 Minutes): **0.8875** Ah
Total Battery Required: 24.4909 Ah
 Total Battery Required (+) 15% Spare Capacity: **28.164535 Ah**
 Battery Supplied: **35 Ah**

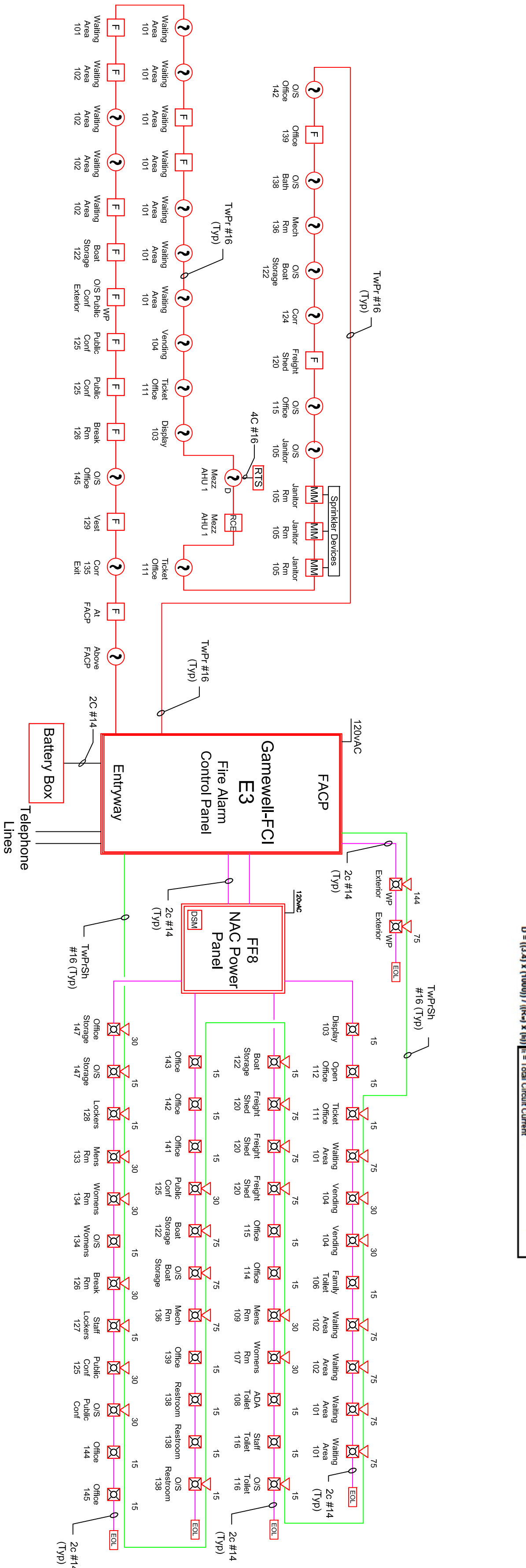
FF8 HORNBLOWER BOOSTER PANEL, STANDBY BATTERY CALCULATION

| ESD Spans/Stroke | STR Stroke Only | Quiescent Current | Alarm Current | Remaining % of Ckt Capacity | Remaining % of Ckt Capacity |
|--|-----------------|-------------------|---------------|-----------------------------|-----------------------------|
| Candle 1 | 1 | 1 | 3 | 77.50 % | 77.50 % |
| Candle 2 | 1 | 1 | 3 | 74.23 % | 74.23 % |
| Candle 3 | 1 | 1 | 3 | 70.97 % | 70.97 % |
| Candle 4 | 1 | 1 | 3 | 67.70 % | 67.70 % |
| Total Alarm Amp x Time Required (15 Minutes): | | | 0.773 | 84.6 | 3.4VDC |
| Total Quiescent Amp x Time Required (60 Hours): | | | 2.373 | 85.7 | 3.4VDC |
| Total Standby Battery Supplied: | | | 7.2 | 74.0 | 3.4VDC |

| ESD Spans/Stroke | STR Stroke Only | Total Circuit Resistance | Length | Voltage Drop |
|------------------|-----------------|--------------------------|--------|--------------|
| 1 | 1 | 0.0720 | 1446 | 3.4VDC |
| 2 | 1 | 0.7730 | 1257 | 3.4VDC |
| 3 | 2 | 0.7630 | 1273 | 3.4VDC |
| 4 | 1 | 0.8830 | 1100 | 7.40 |

Formulas used:

$R_t = (R) \times (R_n) / 1000'$
 $V_o = (R_t) \times (I_t)$
 Substitute for (R) and solve
 $R_n = \text{Total Circuit Resistance}$
 $D = \text{Total Circuit Length (Feet)}$
 $V_o = \text{Wire Resistance per 1000' Pair}$
 $I_t = \text{Total Circuit Current}$
 $D = (I_t \times A) \times (1000') / (R_n \times I_t)$



LEGEND:

| RISER SYM | DWG SYM | DESCRIPTION | CATALOG # |
|-----------|---------|--|----------------------|
| FAACP | FAACP | Fire Alarm Control Panel | Gamewell-FCI E3 |
| F WP | F | Manual Pull Station | MSTAF RMS-1TWP-KL |
| ? | S | Smoke Detector w/Base | ASD-PL2F ADB-FL |
| ? | SD | Duct Smoke Detector w/Base | DNR |
| RTS | | Remote Test Switch for Duct Smoke Detector | RTS-451KEY |
| MM | | Addressable Input Module | ADM-2RF |
| WF | WF | Waterflow Switch | FBO |
| TS | TS | Tamper Switch (Valve Supervisory) | FBO |
| PS | PS | Pressure Switch (Dry Sprinkler Alarm) | FBO |
| # | △ | Strobe Unit | STR |
| # | ▽ | Speaker/Strobe Unit | E50-24MCW-FR |
| # | □ | # Indicates Candela Setting | ET70MP-2475WR |

GENERAL NOTES:

- ALL WIRING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, STATE OF MAINE BUILDING CODE, AND MANUFACTURER'S REQUIREMENTS & RECOMMENDATIONS
- ALL ADDRESSABLE DEVICES MUST BE INSTALLED IN A HEATED LOCATION.

WIRING NOTES:

- Addressable Loop consists of: (1) 2c #16 Twisted Non-shielded from FAACP to 1st device; (1) 2c #16 Twisted Non-shielded through remaining devices on circuit and return to FAACP. Maintain proper separation between feeds and returns.
- Strobe circuits consist of a minimum: 2c #14 from Booster Panel to 1st device; 2c #14 through remaining devices on circuit. Maintain proper separation between feeds and returns.
- Speaker circuits consist of a minimum: TwP-Sh #16 from Fire Alarm Panel to 1st device; TwP-Sh #16 through remaining devices on circuit. Maintain proper separation between feeds and returns.

| | | | |
|------------|-----------------------------|-----------|----------|
| SCALE: NTS | DATE: 9/13 | DRWN: KMB | TRD: TRD |
| REV: 0 | DESCRIPTION: Original Issue | | |

JOB NAME: **Casco Bay Ferry Terminal**
 56 Industrial Way
 Portland, ME
 Fire Alarm Riser Diagram
 CONTRACTOR: **E.S. Boulos Company**

R.B. Allen Co., Inc.
 P.O. BOX 770
 131 LITTLEFIELD RD
 NO. HAMPTON, NH 03862
 1-800-258-7264

DWG NAME: **Casco Bay Ferry Terminal**
 56 Industrial Way
 Portland, ME
 Fire Alarm Riser Diagram
 DWG NAME: FA01_Casco_RSR