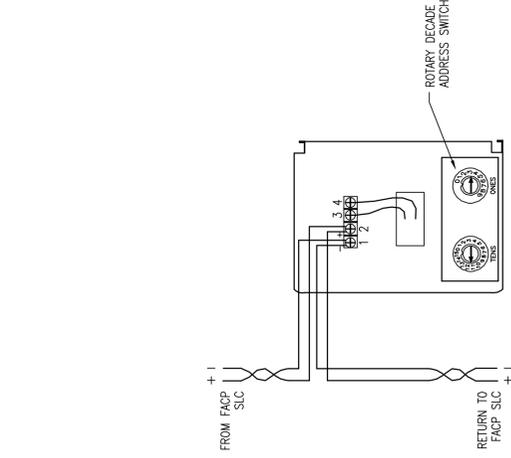


Existing FACP Battery Calculation		10/14/2016	
PROJECT NAME:	SPOTME T1	24 Hours	
Required Standby Time:	5 Minutes		
Required Alarm Time:			
Regulated Load in Standby			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
NOT-BG12LX PULL STATION	3	X 0.00038	= 0.00114
TOTAL STANDBY LOAD			
			0.00114
Regulated Load in ALARM			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
NOT-BG12LX PULL STATION	3	X 0.00500	= 0.01500
TOTAL ALARM LOAD			
			0.01500
Battery Requirements			
Standby Load (Amps)	0.00114	X	Required Standby Time in Hours = 0.02736
Alarm Load (Amps)	0.01500	X	Required Alarm Time in Hours = 0.0125
Total Ampere Hours (before derating factor)			0.02861
Derating Factor			X = 0.34353
<b>BATTERIES TO BE PROVIDED (2 - 12v)</b>			<b>FIELD VERIFY</b>

Existing FPS Battery Calculation		10/14/2016	
PROJECT NAME:	SPOTME T1	24 Hours	
Required Standby Time:	5 Minutes		
Required Alarm Time:			
AC Branch Current			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
FPS ALTRONIX AL802ULADA MAINBOARD	1	X 0.09000	= 0.09000
TOTAL STANDBY LOAD			
			0.09000
Regulated Load in ALARM			
Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
FPS ALTRONIX AL802ULADA MAINBOARD	1	X 0.7500	= 0.7500
FPS CH-2 (Existing)	1	X 0.1700	= 0.1700
FPS CH-3 (Existing)	1	X 0.70200	= 0.70200
FPS CH-3 (See Voltage Drop Calculations)	1	X 1.93500	= 1.93500
FPS-4 (Spares)	1	X 0.00000	= 0.00000
TOTAL ALARM LOAD			
			3.78600
Battery Requirements			
Standby Load (Amps)	0.09000	X	Required Standby Time in Hours = 2.16000
Alarm Load (Amps)	3.78600	X	Required Alarm Time in Hours = 0.31550
Total Ampere Hours (before derating factor)			2.47500
Derating Factor			X = 1.2
<b>BATTERIES TO BE PROVIDED (2 - 12v)</b>			<b>2.97060</b>
			<b>7 AH</b>



TI OPERATIONS MATRIX	
FIRE ALARM INPUT	ACTIVATE ALARM INDICATOR
PULL STATIONS	ACTIVATE AUDIBLE ALARM
FIRE ALARM AC POWER FAIL	ACTIVATE TROUBLE INDICATOR
FIRE ALARM LOW BATTERY	ACTIVATE TROUBLE INDICATOR
OPEN CIRCUIT	ACTIVATE TROUBLE INDICATOR
GROUND FAULT	ACTIVATE TROUBLE INDICATOR
NAC SHORT CIRCUIT	ACTIVATE TROUBLE INDICATOR
LOSS OF AC TO BUILDING	ACTIVATE TROUBLE INDICATOR
	TRANSMIT ALARM SIGNAL
	TRANSMIT TROUBLE SIGNAL

- 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	
SYMBOL	DESCRIPTION
[FCP]	FIRE ALARM CONTROL PANEL
[FES]	FIRE ALARM POWER SUPPLY
[FSA]	FIRE SYSTEM ANNUNCIATOR
[FSD]	FIRE/SMOKE DAMPER
[S]	SMOKE DETECTOR
[S-]	DUCT SMOKE DETECTOR
[S+]	HEAT DETECTOR
[M]	ADDRESSABLE CONTROL MODULE
[MM]	ADDRESSABLE MONITOR MODULE
[P]	MANUAL PULL STATION
[PL]	CONTROL RELAY (MULTI-VOLTAGE)
[RM]	ADDRESSABLE RELAY MODULE
[KB]	KNOCK BOX
[WFS]	WATER FLOW SWITCH
[VTS]	VALVE TAMPER SWITCH
[B]	BELL
[C]	CEILING MOUNT STROBE
[CH]	CEILING MOUNT HORN / STROBE
[CS]	CEILING MOUNT SPEAKER / STROBE
[MH]	MINI HORN
[HS]	HORN / STROBE
[SS]	SPEAKER / STROBE
[SP]	SPEAKER
[S]	STROBE
ABBREVIATION	DESCRIPTION
E	EXISTING
G	WITH GUARD
P	PENDENT MOUNT
R	RESIDENTIAL (110V)
S	SOUNDER BASE
WP	WEATHER PROOF
EOL	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

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	10/14/2016

**CUNNINGHAM**  
Security Systems

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

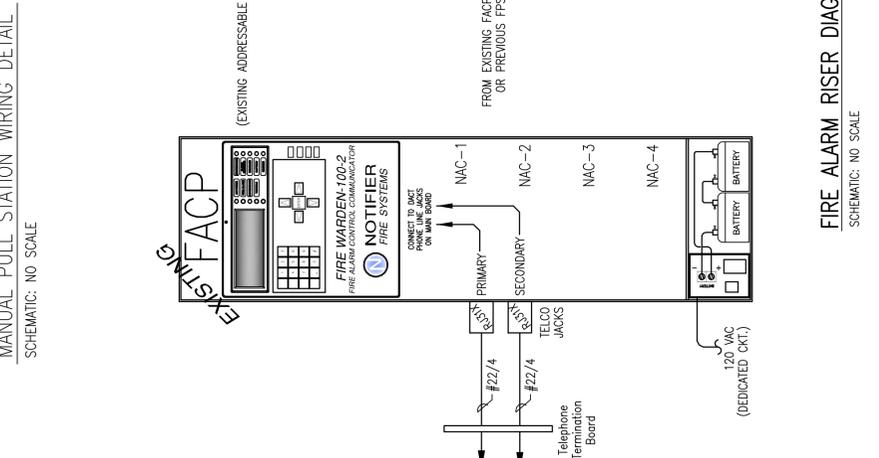
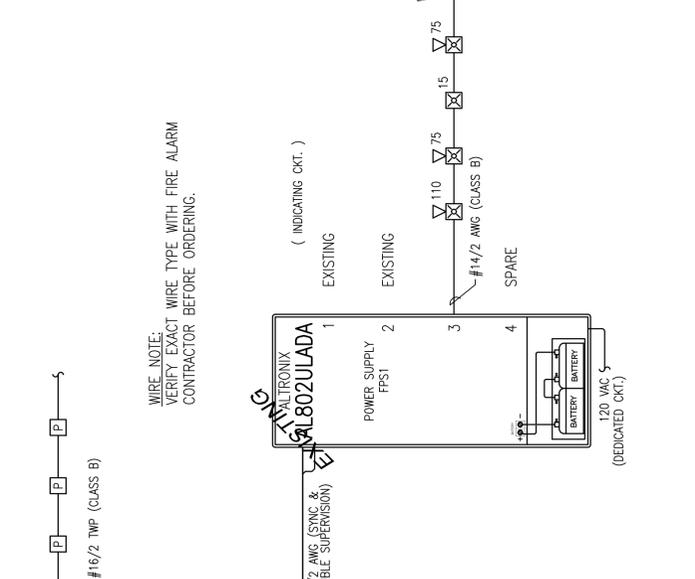
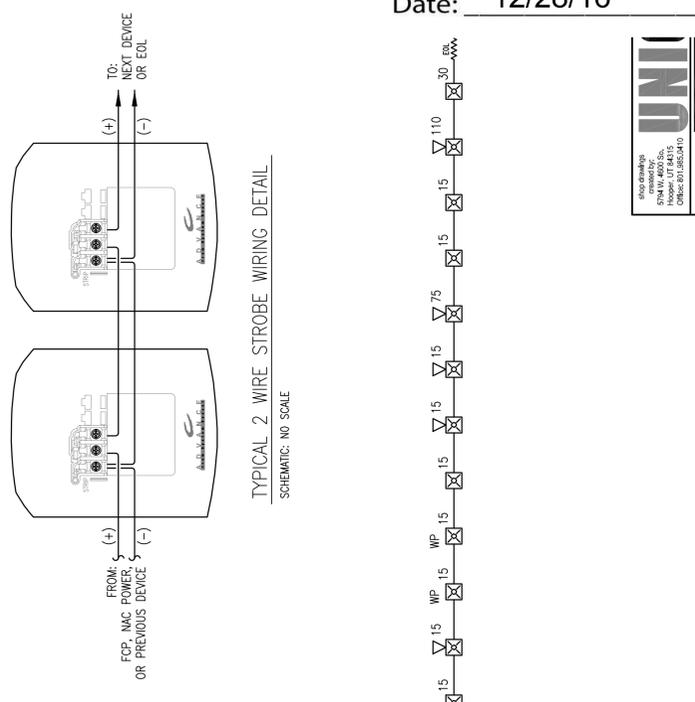
**SPOTME T1**  
75 WASHINGTON AVENUE  
PORTLAND, MAINE 04101  
ALCS, DETAILS, LEGEND, MATRIX, NOTES



Reviewed for Code Compliance  
Inspections Division  
Approved with Conditions  
Date: 12/28/16

**APPLICABLE CODES:**

MAINE UNIFORM ENERGY & BUILDING CODE  
PORTLAND CITY CODE, CHAPTER 10, FIRE PREVENTION & PROTECTION  
NFPA 1, FIRE CODE, & NFPA 101, LIFE SAFETY CODE



Notes:  
Wire resistance is doubled in the calculations for two wires (Positive and Negative).  
The voltage calculated to the last device must not be lower than the manufacturers listed minimum operating voltage (i.e. rated operating voltage 16-33 VDC (24 VDC nominal)).

