

Type Mark	Space Number	Space Name	Description	Manufacturer	Model	URL	Output Rating @ 90 Minutes	In / Out Voltage	Weight	Remark	Specific Remark	Specifications
EL-2.2KVA	002B	Storage	Emergency Lighting Inverter	Myers	EM-3-S-B-10-04-T-M(BBM)-J-R	www.myerscorp.com	2200 VA	120 V	484 lb			26 50 00 - Lighting

### Lighting Fixture Schedule

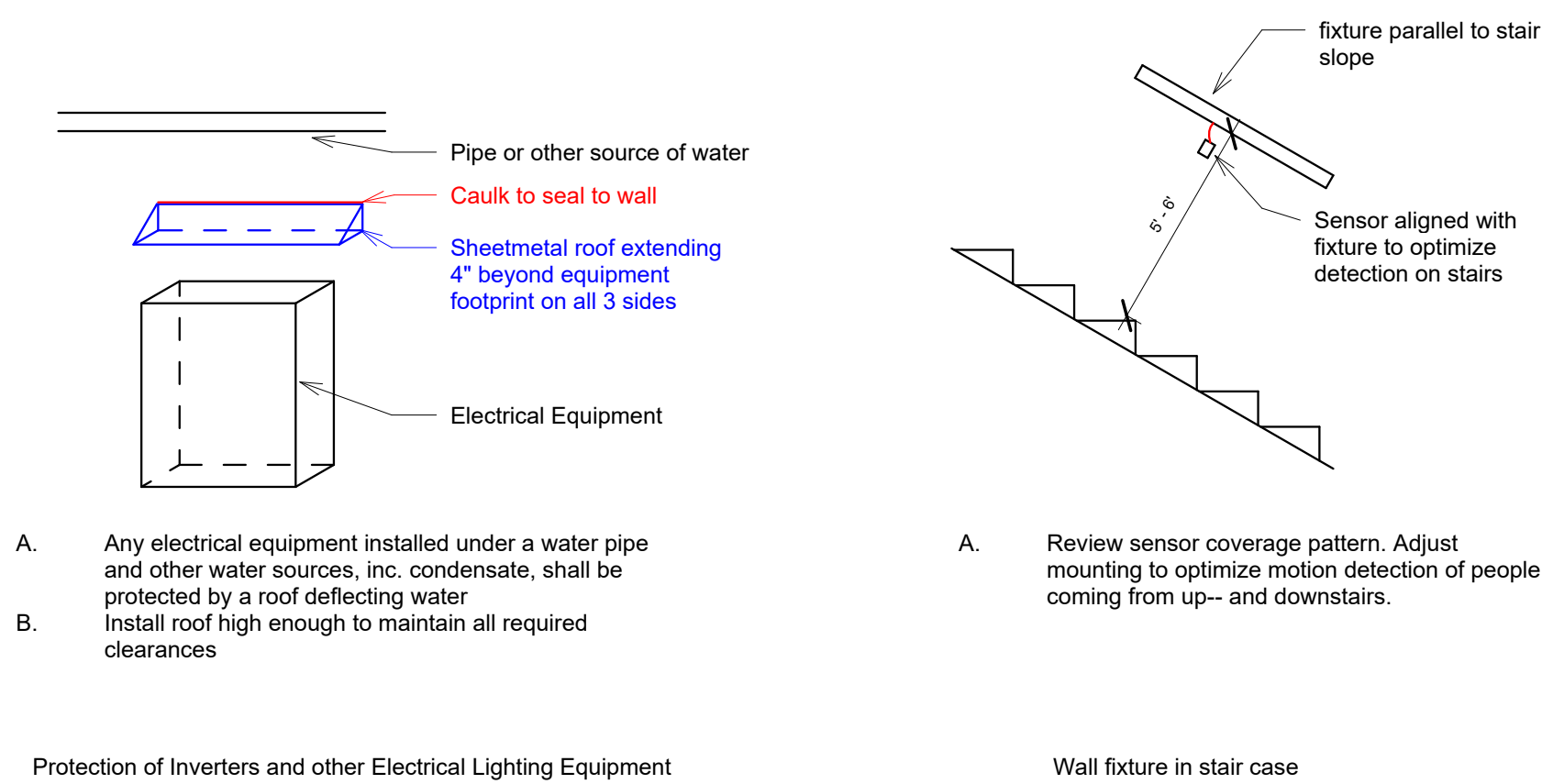
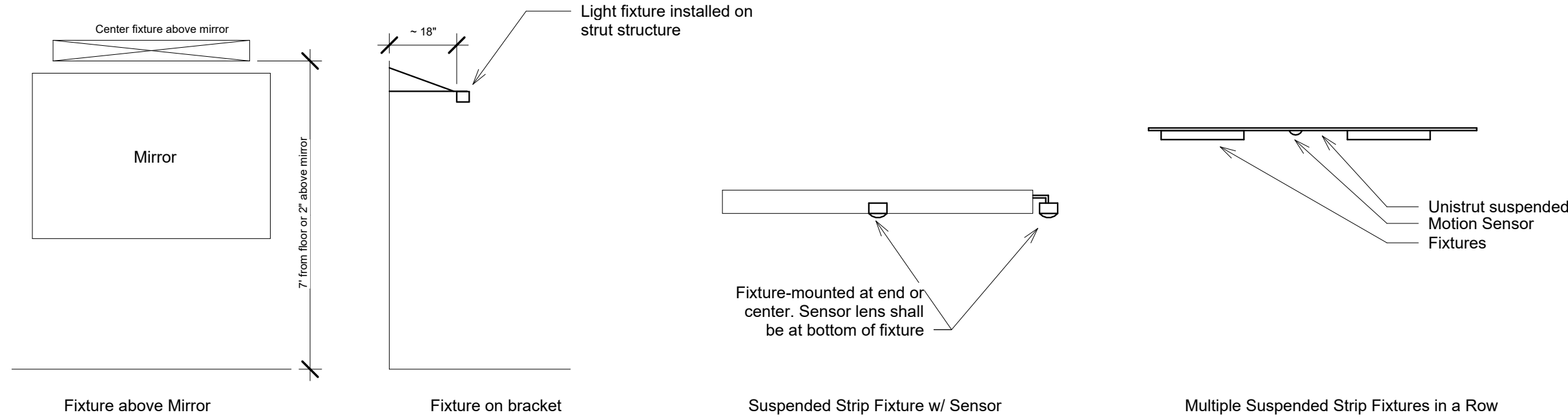
Type Mark	Description	Est. Count	Model	URL	Apparent Power	Luminous Flux	Color Temperature	Efficacy	Lumen Maintenance	Environmental Rating	Unified Glare Rating (highest value)	Type Remark	Specific Remark	Specification
EX-AC	Exit Sign - no Battery	7	Lithonia LGM-3-W-3-C-120277	www.acuitybrands.com	4 VA									26 50 00 - Lighting
EX-A-2.2	Exit Sign Transducer - no Battery	6	Big Beam TROL-AC-LED-2-6-W	www.bigbeam.com	4 VA									26 50 00 - Lighting
P-2-2.0K	Panel 2x2	42	Lithonia SPX-2-2-200LM-80CRI-40K-BFR-L-LGR-ZT-MVOLT-WH	www.acuitybrands.com	14 VA	2111 lm	4000 K	151 lm/W	L90 @ 50K hours	IPX5, NSF Splash Zone	16.1			26 50 00 - Lighting
P-2-3.4K	Panel 2x2	32	Lithonia SPX-2-3-3400LM-80CRI-40K-BFR-L-LGR-ZT-MVOLT-WH	www.acuitybrands.com	23 VA	3438 lm	4000 K	149 lm/W	L90 @ 50K hours	IPX5, NSF Splash Zone	17.8			26 50 00 - Lighting
P-2-4.0K	Panel 2x2	8	Lithonia SPX-2-4-4000LM-80CRI-40K-BFR-L-LGR-ZT-MVOLT-WH	www.acuitybrands.com	28 VA	4080 lm	4000 K	146 lm/W	L90 @ 50K hours	IPX5, NSF Splash Zone	18.4			26 50 00 - Lighting
S-2.2.0K	Strip 2'	2	Lithonia CLX-L-24-2400LM-HEF-RDL-MVOLT-EZ1-40K-80CRI	www.acuitybrands.com	13 VA	1981 lm	4000 K	147 lm/W	L70 @ 100K hours	Damp Location	26.2			26 50 00 - Lighting
S-2.3.0K	Strip 2'	1	Lithonia CLX-L-24-2400LM-HEF-RDL-MVOLT-EZ1-40K-80CRI	www.acuitybrands.com	17 VA	2568 lm	4000 K	144 lm/W	L70 @ 100K hours	Damp Location	27			26 50 00 - Lighting
S-3.3.0K	Strip 3'	1	Lithonia CLX-L-36-3000LM-HEF-RDL-MVOLT-EZ1-40K-80CRI	www.acuitybrands.com	20 VA	3004 lm	4000 K	150 lm/W	L70 @ 100K hours	Damp Location	27.3			26 50 00 - Lighting
S-4.4.0K	Strip 4'	3	Lithonia CLX-L-48-4000LM-HEF-RDL-MVOLT-EZ1-40K-80CRI	www.acuitybrands.com	24 VA	4090 lm	4000 K	172 lm/W	L70 @ 100K hours	Damp Location	28.3			26 50 00 - Lighting
S-4.0K	Strip 4'	8	Lithonia CLX-L-48-4000LM-HEF-RDL-MVOLT-EZ1-40K-80CRI	www.acuitybrands.com	30 VA	5019 lm	4000 K	169 lm/W	L70 @ 100K hours	Damp Location	27			26 50 00 - Lighting
S-8.8.0K	Strip 8'	19	Lithonia CLX-L-96-8000LM-HEF-RDL-MVOLT-EZ1-40K-80CRI	www.acuitybrands.com	48 VA	8181 lm	4000 K	172 lm/W	L70 @ 100K hours	Damp Location	26.5			26 50 00 - Lighting
SS-12-1.9K	Slim Surface - Round - Wet Location	1	T55 88-1215-RW-TM-C2-4000K-80CRI	www.trulight.com	16 VA	1500 lm	4000 K	100 lm/W	38K hours	IP 44 Wet Location				26 50 00 - Lighting
V-2.1.8K	Vanity 4"	2	Birchwood NOL-LED-HL-0-40-4-MW-MVOLT-D1-SM	www.birchwoodlighting.com	12 VA	1398 lm	4000 K	118 lm/W	L70 @ 60K hours	Damp Location				26 50 00 - Lighting
V-4.2.8K	Vanity 4"	4	Birchwood NOL-LED-HL-0-40-4-MW-MVOLT-D1-SM	www.birchwoodlighting.com	24 VA	2792 lm	4000 K	118 lm/W	L70 @ 60K hours	Damp Location				26 50 00 - Lighting
WW-4.2K	Linear Wall Mount LED Light Fixture	5	Starke SLMD-4-500-WW-40K-PW-AWM-U-1C-DT1	www.starke-lighting.com	16 VA	2000 lm	4000 K	125 lm/W		Damp Location				26 50 00 - Lighting

### Lighting Device Schedule

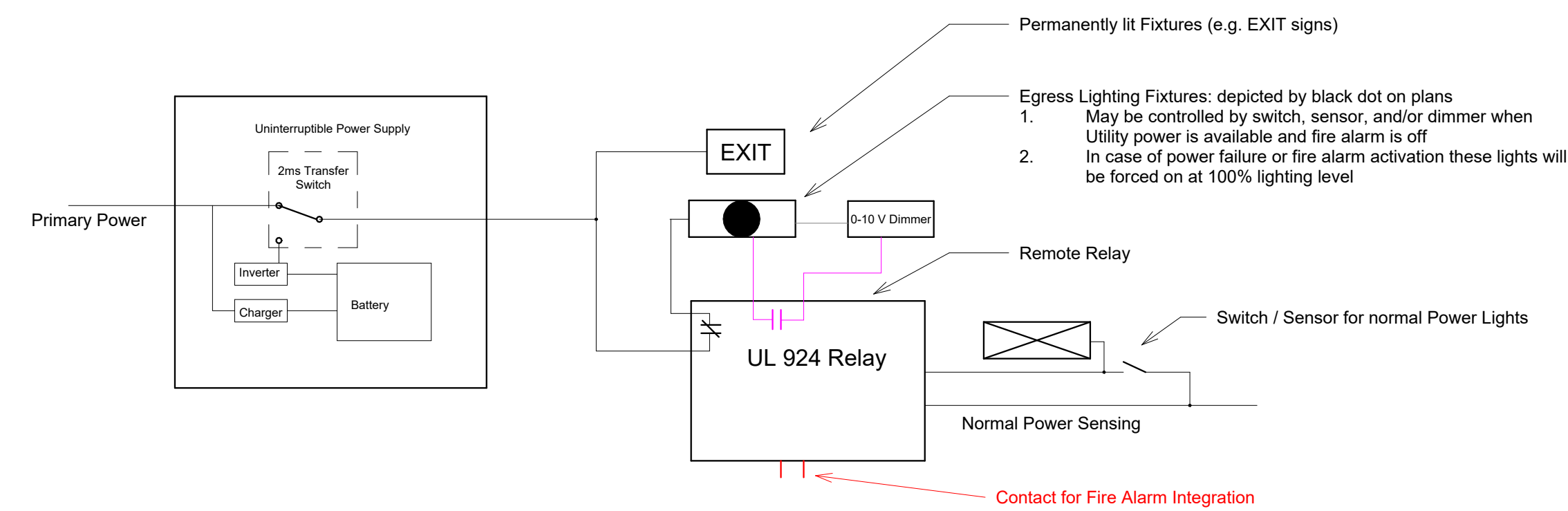
Type Mark	Description	Est. Count	Model	URL	Type Remark	Specification
H	Motion Sensor High Bay	14	Sensorswitch CMR-4-D-P-VLP	www.acuitybrands.com		26 50 00 - Lighting
MC	Motion Sensor Corner-mount w/ powerpack	1	Sensorswitch WV-16-R-P-KIT-PP20	www.acuitybrands.com		26 50 00 - Lighting
MS	Motion Sensor short Range	26	Sensorswitch CMR-6-POT-ADC-VLP	www.acuitybrands.com		26 50 00 - Lighting
MW	Motion Sensor wide Range	19	Sensorswitch CMR-16-POT-ADC-VLP	www.acuitybrands.com		26 50 00 - Lighting
MW FM	Motion Sensor wide Range, Fixture-mount	2	Sensorswitch LEXR-16-ADC-VLP	www.acuitybrands.com		26 50 00 - Lighting
MWA	Motion Sensor Wall-mount 160" Coverage, 48" height	5	Sensorswitch LWS-WH	www.acuitybrands.com		26 50 00 - Lighting
S-1	Single Switch	4				26 50 00 - Lighting
SD-10	Switch w/ 0-10V Dimmer	36	Wallstopper RH4FBL3PW	www.legrand.us		26 50 00 - Lighting

### Light Fixture Support

Type Mark	Estimated Total Length	Specification
STRUT	210'	26 05 00 - Common Work Results for Electrical



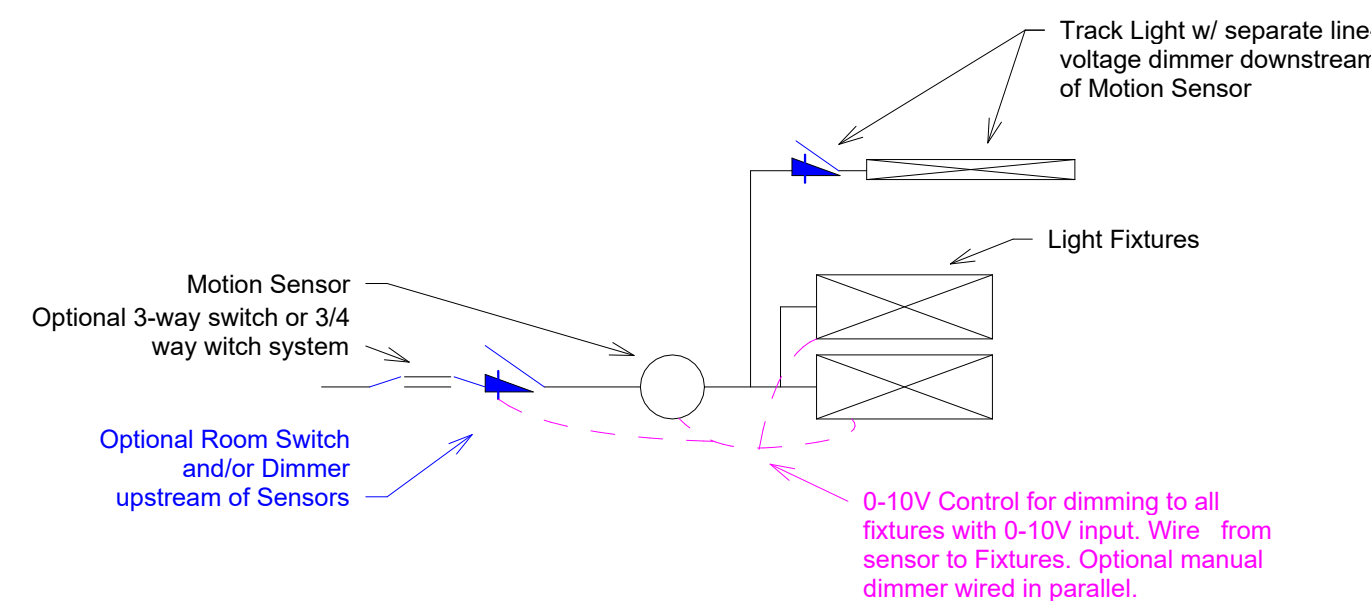
- Turn off lights when leaving room empty.**
- Some spaces don't employ automatic lighting control and use manual switches only. These include but are not limited to mechanical, electrical, or crawl spaces.
  - In these spaces, adhere a sign to the exit door indicating that lights shall be shut off upon leaving the space.
  - Above sign is an example and similar signs can be used upon approval.



- Objective:**
- Emergency light fixtures (indicated by a black dot) and Exit signs will be powered by the Uninterruptible AC Power Supply (UPS). Wiring has to be extended from UPS to all devices.
  - When normal power is present and fire alarm is OFF, lighting will be controlled by lighting control system. Local switches, timers, dimmers and sensors control on/off and dimming.
  - When normal power is not present, the emergency fixtures and exit signs will be powered by the battery for over 90 minutes. These fixtures will be forced on at 100% (no dimming).
  - When fire alarm is active, all emergency light fixtures will be forced on at 100% (no dimming).
  - Contractor shall verify availability of contacts in fire alarm panel and add relay(s) if required.
  - Wiring shall meet NEC 700.10 requirements. This includes, but is not limited to:
    - Separate emergency raceway. Raceway shall be marked.
    - Any junctions shall be labeled "Warning - 2 power sources" or as required by code.
    - Label indicates panel, circuit, and voltage.
  - Conduit for emergency lighting shall be color-coded as specified in Division 26
  - When accessible installation of UL 924 relay is not possible (e.g. drywall, exterior), install the relay in near-by accessible location. Verify location with engineer.
  - Fixtures with built-in sensor shall be re-wired for UL 924 relay to bypass sensor (e.g. exterior fixture with included photocell)
  - Contractor is responsible for all wiring from uninterruptible power supply and fire alarm panel to the zones.

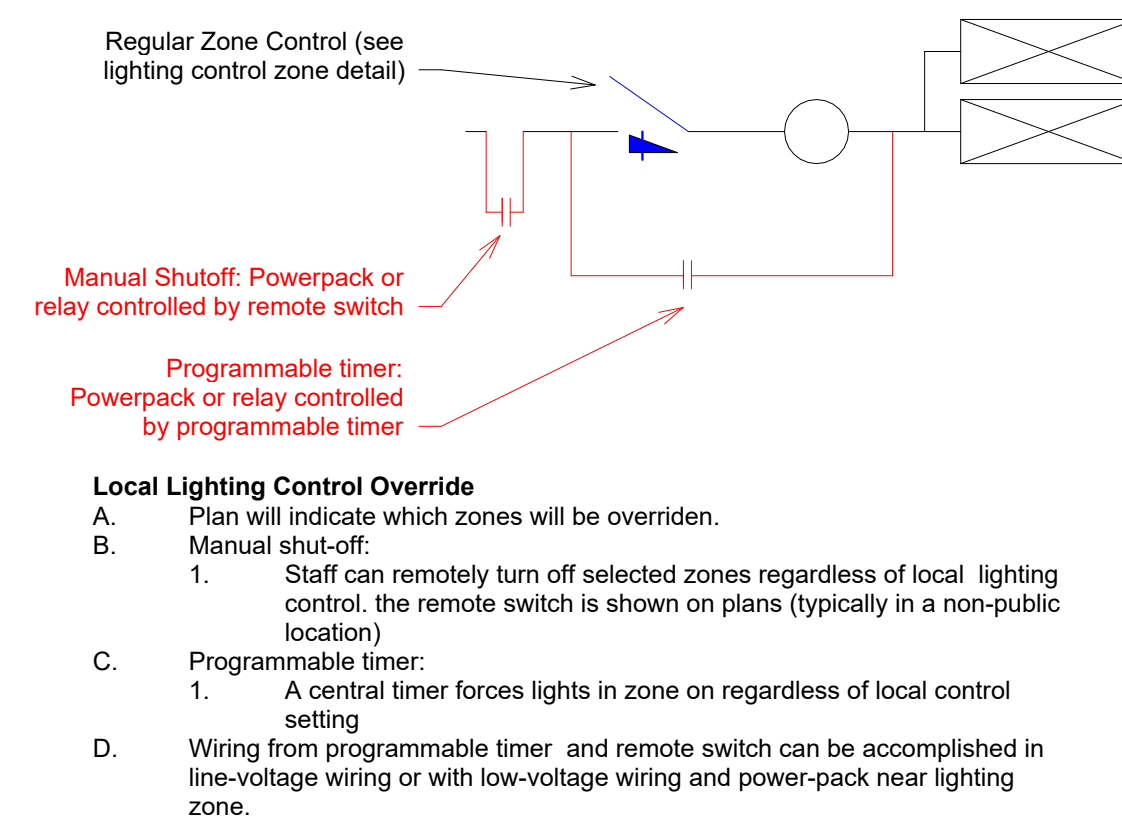
- Testing:**
- Test by applying emergency power and normal power. Turn off local switch and set local dimmer to lowest dimming level.
    - If no local switch is available, disconnect the appropriate wire to simulate light being turned off.
    - If no local dimmer is available and dimming by sensor is scheduled, program sensor to dim to low level.
  - Disconnect normal sensing power and verify emergency light turns on at 100%
  - Re-instate normal power and activate fire alarm and verify emergency light turns on to 100%

### 1 EL Egress Lighting Control w/ UPS and Fire Alarm Integration - Not to Scale



- Lighting zones with lighting-devices and light-fixtures are indicated by wire lines and/or switch leg (SL) numbers.
- Where devices allow, dimming shall be accomplished by 0-10V wiring of all devices.
- Where shown on plans, a zone may have 3-way and 4-way switches. Enable 3-way function on dimmer switch and wire appropriately to enable control from all switch locations. Fixtures and devices in the same above zone are denoted by the same switchleg (SL) number.
- Motion sensor with local switch will be de-energized when switch is off (sensor downstream of switch):
  - Light will be on upon activation of local switch regardless of actual motion detection (sensor is ON upon power-up)
  - Sensors will not click when local switch is off (nuisance avoidance in quiet rooms)
- Line-voltage dimmers (i.e. track lighting) shall be downstream of local motion sensor.
- Notes on plans or switchleg naming will indicate exceptions. For example:
  - Disable Switchleg: A dimmer will only dim the lighting level to the allowable minimum. The line voltage switch in the dimmer will not be used. This prevents lights turning off entirely. Hallways are an example.
  - One light fixture shall be controlled by switch only: Switchleg parameters indicate that some lights are controlled by switch and sensor, and some lights by switch only. This prevents the latter lights from turning off upon loss of motion detection. Electrical or mechanical rooms are examples.
- Sensor Programming Instructions:
  - The below is based on Sensorswitch Instructions at the time of design. Amend if different sensors are used or if manufacturer changes procedure. Confirm any deviation with engineer. Sensorswitch support#: 1-800-535-2465
  - If sensors are equipped with VLC programming option, a smartphone app shall be used. Note that sensors needs to be initialized and set with a PIN within 45 minutes of powering up. Program is sent to sensor via flashlight. Lights will blink to acknowledge successful programming.
  - Verify settings with engineer prior programming. Certain settings may be different in certain zones.
  - Sensors shall be programmed depending on availability of daylight. Save presets to avoid deviations.
  - No daylight available:
    - Enable "Time Delay" - Set to 15 minutes
    - Disable Trim
    - Enable "Dim to Off Delay" - set to 5 minutes
    - Disable Photocell
  - Daylight available (inc. spaces with overhead doors, skylights, windows within 20' of sensor)
    - Enable "Photocell" and set to "On/Off and Auto Dimming"
    - Enable "Auto Set Point"
  - After programming, all functions shall be tested to verify desired function. Adjust as required for intended function. Discuss problems with engineer.

### 2 EL Lighting Control Zone - Not to Scale



- Local Lighting Control Override**
- Plan will indicate which zones will be overridden.
  - Manual shut-off:
    - Staff can remotely turn off selected zones regardless of local lighting control. the remote switch is shown on plans (typically in a non-public location)
  - Programmable timer:
    - A central timer forces lights in zone on regardless of local control setting
  - Wiring from programmable timer and remote switch can be accomplished in line-voltage wiring or with low-voltage wiring and power-pack near lighting zone.

### 4 EL Local Lighting Control Overrides - Not to Scale

### 3 EL Typical Installation Details 1" = 1'-0"



Client:  
Madison Fire Department

Fire Station 2  
Lighting Retrofit  
(Addendum 1)

Location:  
421 Grand Canyon Dr.  
Madison, WI 53719

Contract: 9322  
Project: 14530

### Revisions

No.	Description
1	Addendum 1

### Details and Schedules

### EL 300