10810 W. LITTLE YORK RD. STE. 130 - HOUSTON, TX 77041-4051
VOICE (713) 973-6905 - FAX (713) 973-9352
web: www.twrlighting.com

IMPORTANT!!!

PLEASE TAKE THE TIME TO FILL OUT THIS FORM COMPLETELY. FILE IT IN A SAFE PLACE. IN THE EVENT YOU EXPERIENCE PROBLEMS WITH OR HAVE QUESTIONS CONCERNING YOUR CONTROLLER, THE FOLLOWING INFORMATION IS NECESSARY TO OBTAIN PROPER SERVICE AND PARTS.

MODEL # AA1MLED

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

AA1MLED CONTROLLER

TABLE OF CONTENTS

AA1MLED CONTROLLER

APPENDIX

AA1MLED CONTROLLER

1.0 GENERAL INFORMATION

The TWR Lighting®, Inc. (TWR®) Model AA1MLED Controller is for A1 lighting of towers 151' to 350' AGL (above ground level) in accordance with the FAA Advisory Circular 70/7460-1L. One (1) LED beacon should be placed at the top. Obstruction lights should be placed at mid-level with respect to overall tower height.

The flash rate of the LED beacon is 30 per minute. The LED sidelights burn steady.

A by-pass switch (SW1) allows the controller to be turned on during daylight hours without covering the photocell. This is particularly helpful since the controller can be mounted indoors while the photocell is outdoors. SW1 can be operated by turning the switch up to the "On" position.

The photocell is the three (3) blade, twist to lock, type.

Power supplied to the controller shall be 120V AC 50 / 60 Hz.

The controller housing is rated at NEMA 4X. It is suitable for indoor or outdoor mounting.

Controller functions that are monitored by remote alarms in the form of dry contact closures (Form C) are as follows:

POWER FAILURE	Monitors 120V AC to the controller. Alarms in the event of power failure, or tripped circuit breaker.
LIGHTS "ON"	Gives an indication whenever the controller is activated.
LED BEACON	Will give an alarm in the event the LED beacon fails, along with visual indicator for that circuit.
FLASHER FAILURE	Will give an alarm in the event of failure of flasher.
OBSTRUCTION LIGHTS	Will give an alarm when one (1) of three (3) LED sidelights fails.

2.0 INSTALLATION INSTRUCTIONS

2.1 MOUNTING THE CONTROL CABINET

(Refer to Drawing 1203-R)

The power supply control cabinet can be located at the base of the structure, or in an equipment building. Mounting footprints are shown on drawing 1203-R. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

2.1.1 If the control cabinet is mounted inside an equipment building, the photocell should be mounted vertically on ½" conduit outside the building above the eaves facing north. Wiring from the photocell socket to the control cabinet should consist of one (1) each, red, black, and white wires. The white wire is connected to the socket terminal marked "N," the black wire is connected to the socket terminal marked "Li," and the red wire is connected to the socket terminal marked "Lo." Care must be taken to assure that the photocell does not "see" any ambient light that would prevent it from switching into the nightmode.

2.1.2 If the control cabinet is mounted outside an equipment building, the photocell should be mounted vertically on ½" conduit so the photocell is above the control cabinet. As above, the photocell should be positioned so that it does not "see" ambient light, which would prevent it from switching to the nightmode. The photocell wiring is the same as in 2.1.1.

2.1.3 The wiring from the photocell, the service breaker, the red beacons, and the sidelights should enter the control cabinet through the watertight connectors in the bottom of the cabinet. Inside the cabinet, the connections will be made on the terminal strips and circuit breakers located at the bottom of the chassis. These connections are made as follows:

2.2 EXTERNAL PHOTOCELL WIRING

(Refer to Drawing 1203-R)

2.2.1 Connect the **BLACK** wire from the photocell to terminal block TB2 marked “L.”

2.2.2 Connect the **RED** wire from the photocell to terminal block TB2 marked “SSR.”

2.2.3 Connect the **WHITE** wire from the photocell to terminal block TB2 marked “N.”

2.3 POWER WIRING

(Refer to Drawing 1203-R)

2.3.1 Power wiring to the control cabinet should be in accordance with local methods and NEC.

2.3.2 Circuit breaker needs to be rated at 5 amps.

2.3.3 Connect incoming 120V AC “Hot” to terminal block TB1 marked “L.”

2.3.4 Connect the neutral wire(s) to one (1) of the terminal blocks on TB1 marked “N.”

2.3.5 Connect the AC ground to the grounding lug on the aluminum mounting plate.

2.4 LED BEACON AND LED SIDELIGHT WIRING

(Refer to Drawings 1203-R & RK-xxx)

2.4.1 Connect the **BLACK** wire from the LED Beacon to the circuit breaker marked “B.”

2.4.2 Connect the **RED** wire from the LED sidelight to the circuit breaker marked “S.”

2.4.3 Connect the **WHITE or BLUE** neutral wire(s) to one (1) or more of the terminals marked “N.”

2.5 LED BEACON AND LED SIDELIGHT ALARM WIRING

(Refer to Drawings 1203-R and 1203-S)

2.5.1 Alarm relays K1-K3, and alarm Modules M2 and M3, are provided for independent contact closures for: Power Failure, Lights "On," Flasher Failure, LED Beacon Burnout, and LED Sidelight Burnout.

2.5.2 Alarm Wiring: To utilize all of the red light alarms, the customer will need five (5) pairs of wires to interface with his alarm device. One (1) wire from each of the five (5) pairs will terminate at the points marking common (C). The remaining wire from each pair will terminate as follows:

Power Failure Alarm: Connect to relay K1, terminal #3, for normally open (OR) terminal #6, for normally closed monitoring.

Lights "On" Alarm: Connect to relay K2, terminal #3, for normally open (OR) terminal #6, for normally closed monitoring.

Flasher Failure: Connect to relay K3, terminal #6, for normally open (OR) terminal #3, for normally closed monitoring.

"B" Burnout: Connect to Module M3, terminal #24, for normally open (OR) terminal #22, for normally closed monitoring.

"S" Lamp Burnout: Connect to Module M2, terminal #24, for normally open (OR) terminal #22, for normally closed monitoring.

2.5.3 Alarm Testing: To test alarms, follow the procedures using an "ohm" meter between alarm common and alarm points.

Power Failure: Pull circuit breaker at electrical panel.

Lights "On": Operate photocell by-pass switch SW1 or cover the photocell.

LED Beacon and LED Sidelights:
Trip breakers on the controller panel.

3.0 THEORY OF OPERATION

3.1 POWER SUPPLY

120V AC enters the controller from the circuit breaker panel. Line “L” sits at the PRD, waiting to be switched on, and also keeps the power failure relay K1 energized. When the 6390-FAA photocell is activated, Line “SSR” energizes the coil of the PRD and K2 “Lights On” relay. This also can be accomplished by using the photocell by-pass switch (SW1).

3.2 LED SIDELIGHTS

Line LDS is sent to Module M2, which is a current sensing module for LED sidelights. The RM22JA31MRSP01 monitors one (1) level of LED sidelights, and will provide a contact closure if one (1) or more lamps fail.

3.3 LED BEACON

Line LDB is sent to Modules M1 and M3. M1 is the primary flasher for the LED beacon. It is then sent through the current sensing Module M3, then to the breaker output marked “B.” If Module M3 detects an LED beacon burnout, then that module would provide a contact closure.

Relay K3 is a flasher failure relay for the LED beacon. If Relay K3 detects a flasher failure, it would then provide a contact closure for the flasher circuit.

4.0 MAINTENANCE

4.1 RED OBSTRUCTION LIGHTING

No scheduled maintenance is required. Perform on an “as needed” basis only.

TOOLS REQUIRED: NONE

4.2 L-864 LED BEACON REPLACEMENT

No scheduled maintenance is required. Perform on an “as needed” basis only.

4.3 L-864 CONTROLLER

No scheduled maintenance is required. Perform on an “as needed” basis only.

4.4 PHOTOCELL

The photocell is a sealed unit. No maintenance is needed or required other than replacement as necessary.

5.0 MAJOR COMPONENTS PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V AC Photocell
1	PF-250	Solid State Flasher (M1)
1	B12J2K5	2,500 ohm 12 watt Resistor (R1)
1	PRD7AG0	Mechanical Load Contactor (PRD)
3	PB27E122	Octal Sockets
2	KRPA5AG120V	SPDT Relay (K1 & K2)
1	SPEC 224	Time Delay Relay (K3)
1	STJ01002	Switch (SW1)
1	VJ1210HWPL2	Enclosure
6	8WA1204	Terminal Block (TB1 & TB2)
2	8WA1802	Rail Link
2	8WA1808	Terminal Block End Stop
2	S261D1	1 amp Circuit Breaker (B & S)
2	RM22JA31MRSP01	LED Beacon and LED Sidelight Current Sensors (M2 and M3)

6.0 SUGGESTED SPARE PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V AC Photocell
1	PF-250	Solid State Flasher (M1)
1	KRPA5AG120V	SPDT Relay (K1 & K2)
1	SPEC 224	Time Delay Relay (K3)
2	RM22JA31MRSP01	LED Beacon and LED Sidelight Current Sensors (M2 and M3)

AA1MLED CONTROLLER

Warranty & Return Policy

TWR Lighting®, Inc. ("TWR®") warrants its products (other than "LED Product") against defects in design, material (excluding incandescent bulbs) and workmanship for a period ending on the earlier of two (2) years from the date of shipment or one (1) year from the date of installation.

TWR Lighting®, Inc. ("TWR®") warrants its "LED Product" against defects in design, material and workmanship for a period of five (5) years from the date of shipment. TWR®, at its sole option, will, itself, or through others, repair, replace or refund the purchase price paid for "LED Product" that TWR® verifies as being inoperable due to original design, material, or workmanship. All warranty replacement "LED Product" is warranted only for the remainder of the original warranty of the "LED Product" replaced. Replacement "LED Product" will be equivalent in function, but not necessarily identical, to the replaced "LED Product."

TWR Lighting®, Inc. ("TWR®") warrants its "LED Product" against light degradation for a period of five (5) years from the date of installation. TWR®, at its sole option, will, itself, or through others, repair, replace, or refund the purchase price paid for "LED Product" that TWR® verifies as failing to meet 75% of the minimum intensity requirements as defined in the FAA Advisory Circular 150/5345-43G dated 09/26/12. All warranty replacement "LED Product" is warranted only for the remainder of the original warranty of the "LED Product" replaced. Replacement "LED Product" will be equivalent in function, but not necessarily identical, to the replaced "LED Product."

Replacement parts (other than "LED Product") are warranted for 90 days from the date of shipment.

Conditions not covered by this Warranty, or which might **void** this Warranty are as follows:

- Improper Installation or Operation
- Misuse
- Abuse
- Unauthorized or Improper Repair or Alteration
- Accident or Negligence in Use, Storage, Transportation, or Handling
- Any Acts of God or Nature
- **Non-OEM Parts**
  The use of Non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.

Warranty & Return Policy

AA1MLED CONTROLLER

(continued)

Field Service – Labor, Travel, and Tower Climb are not covered under warranty. Customer shall be obligated to pay for all incurred charges. An extensive network of certified and insured Service Representatives is available if requested.

Repair, Replacement or Product Return RMA Terms – You must first contact our Customer Service Department at **713-973-6905** to acquire a Return Merchandise Authorization (RMA) number in order to return the product(s). Please have the following information available when requesting an RMA number:

- The contact name and phone number of the tower owner or
- The contact name and phone number of the contractor
- The site name and number
- The part number(s)
- The serial number(s) (if any)
- A description of the problem
- The billing information
- The Ship To address

This RMA number must be clearly visible on the outside of the box. If the RMA number is not clearly labeled on the outside of the box, your shipment will be refused. Please ensure the material you are returning is packaged carefully. **The warranty is null and void if the product(s) are damaged in the return shipment.**

All RMAs must be received by TWR LIGHTING®, INC., 10810 W. LITTLE YORK RD. #130, HOUSTON, TX 77041-4051, within 30 days of issuance.

Upon full compliance with the Return Terms, TWR® will replace, repair and return, or credit product(s) returned by the customer. It is TWR®'s sole discretion to determine the disposition of the returned item(s).

AA1MLED CONTROLLER

Warranty & Return Policy
(continued)

RMA Replacements – Replacement part(s) will be shipped and billed to the customer for product(s) considered as Warranty, pending return of defective product(s). When available, a certified reconditioned part is shipped as warranty replacement with a Return Merchandise Authorization (RMA) number attached. Upon receipt of returned product(s), inspection, testing, and evaluation will be performed to determine the cause of defect. The customer is then notified of the determination of the testing.

- Product(s) that is deemed defective and/or unrepairable and covered under warranty - a credit will be issued to the customer's account.
- Product(s) found to have no defect will be subject to a **$75.00 per hour testing charge (1 hour minimum), which will be invoiced to the customer.** At this time the customer may decide to have the tested part(s) returned and is responsible for the return charges.
- Product(s) under warranty, which the customer does not wish returned, the customer will be issued a credit against the replacement invoice.

RMA Repair & Return – A Return Merchandise Authorization (RMA) will be issued for all part(s) returned to TWR® for repair. Upon receipt of returned product(s), inspection, testing, and evaluation will be performed to determine the cause of defect. The customer is then notified of the determination of the testing. If the returned part(s) is deemed unrepairable, or the returned part(s) is found to have no defect, the customer will be subject to a **$75.00 per hour testing charge (1 hour minimum), which will be invoiced to the customer.** Should the returned parts be determined to be repairable, a written estimated cost of repair will be sent to the customer for their written approval prior to any work being performed. In order to have the tested part(s) repaired and/or returned, the customer must issue a purchase order and is responsible for the return shipping charges.

RMA Return to Stock – Any product order that is returned to TWR® for part(s) ordered incorrectly or found to be unneeded upon receipt by the customer, the customer may be required to pay a minimum **20% restocking fee**. Product returned for credit must be returned within 60-days of original purchase, be in new and resalable condition, and in original packaging. Once the product is received by TWR it's condition will be evaluated and a credit will be issued only once it is determined that the RMA Return Terms have been met.

Credits – Credits are issued once it is determined that all of the Warranty and Return Terms are met. All credits are processed on Fridays. In the event a Friday falls on a Holiday, the credit will be issued on the following Friday.

Warranty & Return Policy

(continued)

Freight – All warranty replacement part(s) will be shipped via ground delivery and paid for by TWR®. Delivery other than ground is the responsibility of the customer.

REMEDIES UNDER THIS WARRANTY ARE LIMITED TO PROVISIONS OF REPLACEMENT PARTS AND REPAIRS AS SPECIFICALLY PROVIDED. IN NO EVENT SHALL **TWR®** BE LIABLE FOR ANY OTHER LOSSES, DAMAGES, COSTS, OR EXPENSES INCURRED BY THE CUSTOMER, INCLUDING, BUT NOT LIMITED TO, LOSS FROM FAILURE OF THE PRODUCT(S) TO OPERATE FOR ANY TIME, AND ALL OTHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING ALL PERSONAL INJURY OR PROPERTY DAMAGE DUE TO ALLEGED NEGLIGENCE, OR ANY OTHER LEGAL THEORY WHATSOEVER. THIS WARRANTY IS MADE BY **TWR®** EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED. WITHOUT LIMITING THE GENERALITY OF THE FORGOING, **TWR®** MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS OF THE PRODUCT(S) FOR ANY PARTICULAR PURPOSE. **TWR®** EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES.

AA1MLED CONTROLLER

RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#:_____ **DATE:**_____

CUSTOMER:_____

_____

CONTACT:_____ **PHONE NO.:**_____

ITEM DESCRIPTION (PART NO.):_____

_____

MODEL NO.:_____ **SERIAL NO.:**_____

ORIGINAL TWR INVOICE NO.:_____ **DATED:**_____

DESCRIPTION OF PROBLEM:_____

_____

_____

_____

SIGNED:_____ **DATE NEEDED:**_____

RETURN ADDRESS:_____

PLEASE RETURN PRODUCT TO: 10810 W. LITTLE YORK RD., #130 HOUSTON, TX 77041-4051

AA1MLED CONTROLLER

RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#:_____ **DATE:**_____

CUSTOMER:_____

_____

CONTACT:_____ **PHONE NO.:**_____

ITEM DESCRIPTION (PART NO.):_____

_____

MODEL NO.:_____ **SERIAL NO.:**_____

ORIGINAL TWR INVOICE NO.:_____ **DATED:**_____

DESCRIPTION OF PROBLEM:_____

_____

_____

_____

SIGNED:_____ **DATE NEEDED:**_____

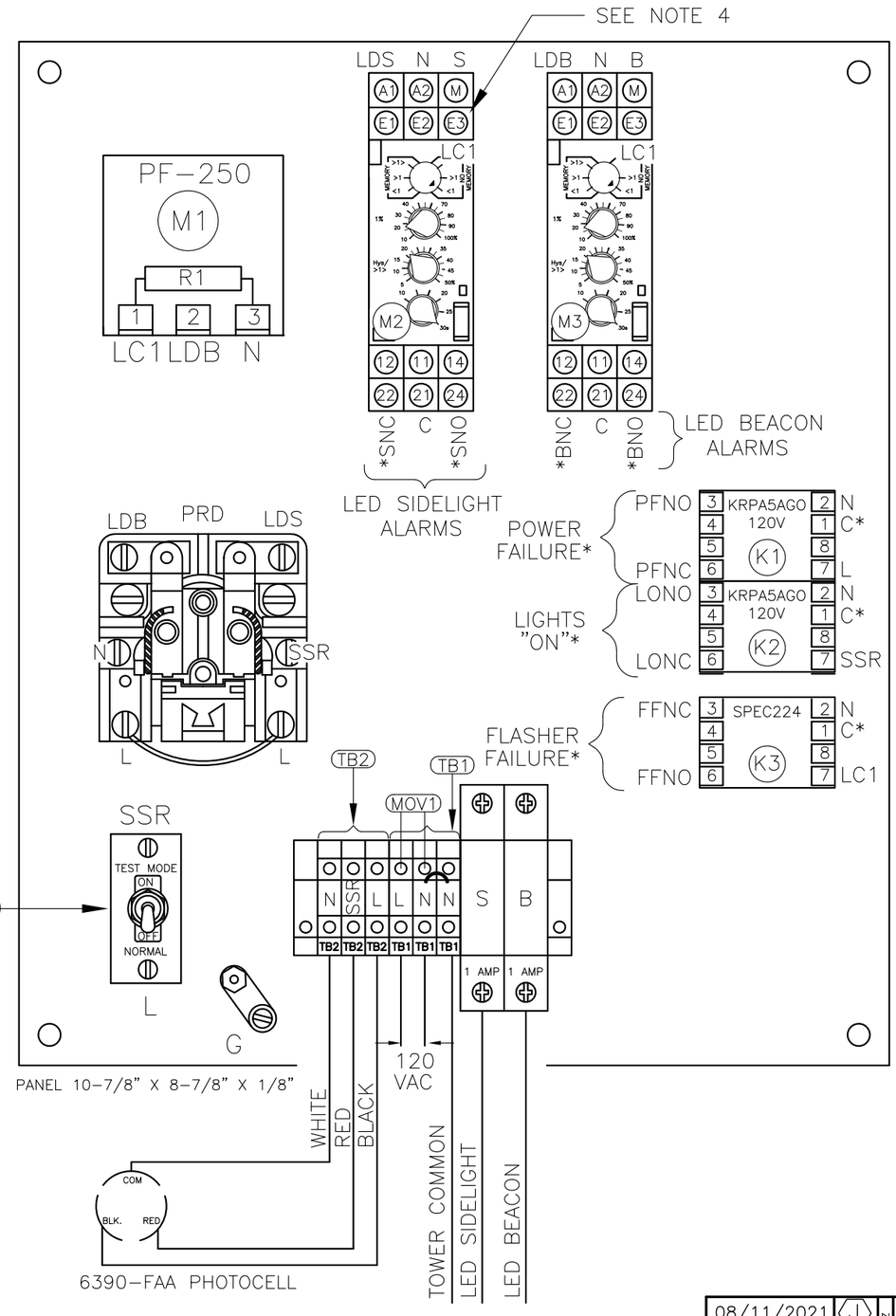
RETURN ADDRESS:_____

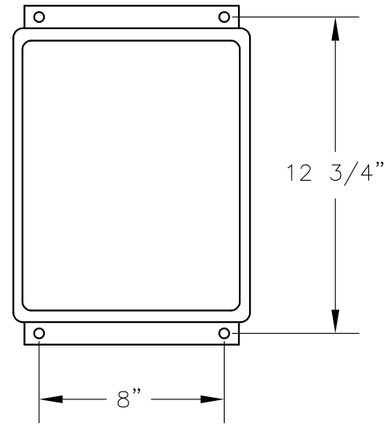
PLEASE RETURN PRODUCT TO: 10810 W. LITTLE YORK RD., #130 HOUSTON, TX 77041-4051

*CUSTOMER ALARM POINTS

C = ALARM COMMON
PFNO/PFNC = POWER FAILURE
LONO/LONC = LIGHTS "ON"
SNO/SNC = SIDELIGHT BURNOUT
FFNO/FFNC = FLASHER FAILURE
BNO/BNC = BEACON BURNOUT

* ALARM OUTPUTS ARE FORM C





MOUNTING DIMENSIONS

(FOR CABINET)

NOTES:
1. WHEN REPLACING METAL BASE MODULES USE HEAT SINK COMPOUND BETWEEN MODULE AND ALUMINUM PLATE.
2. PLUG 6390-FAA PHOTOCELL INTO 43109 TWIST LOCK RECEPTACLE AND TWIST TO LOCK.
3. WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) LDB TO LDB TO LDB.
4. FOR STEADY BURNING SIDELIGHTS REMOVE WIRE FROM M2 (E3) TO M3 (E3), AND PLACE JUMPER WIRE ON M2 (A1) TO (E3) ON SAME MODULE.

DATE: 7/12/2017 10:33 AM

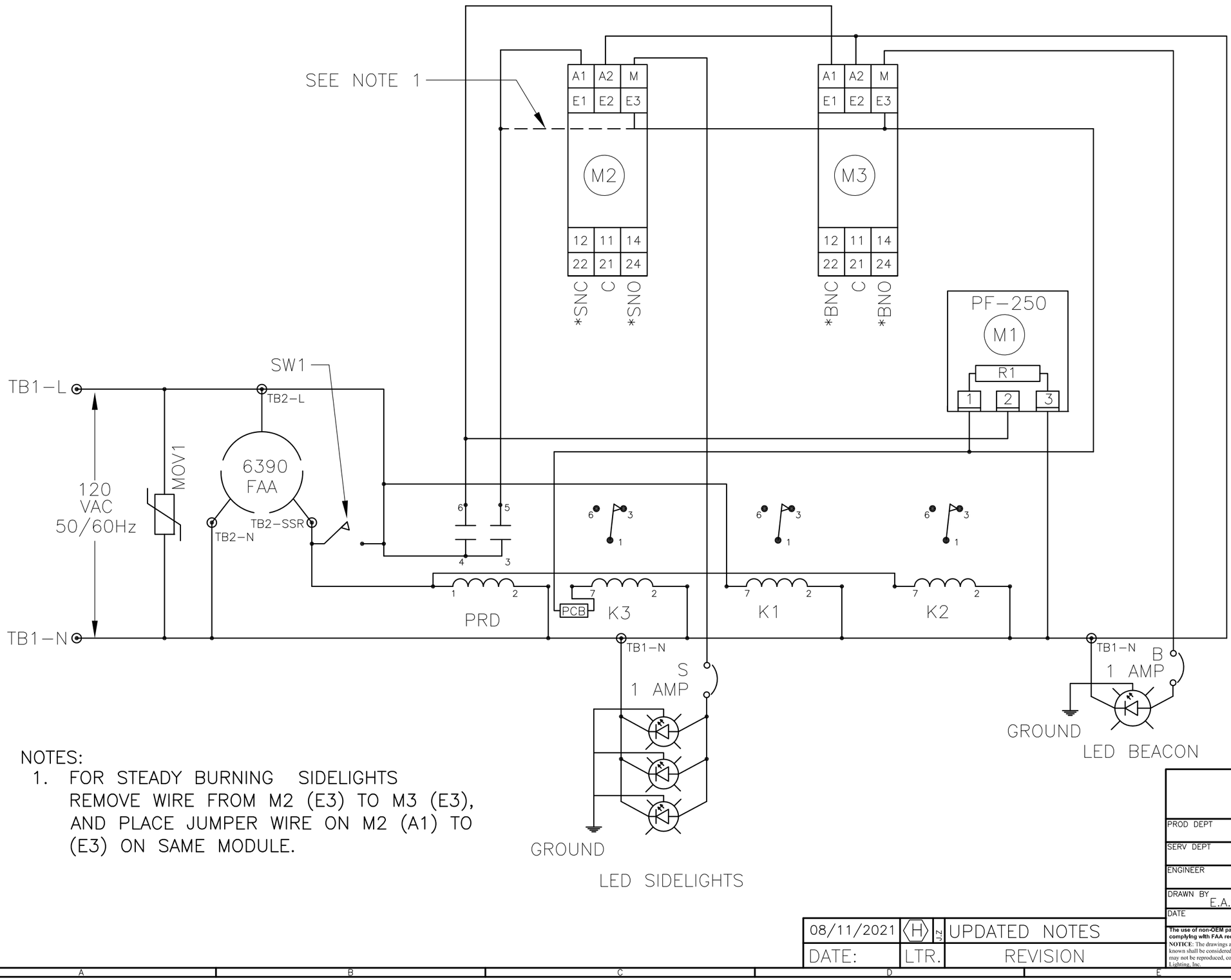
AA1MLED CONTROLLER CHASSIS LAYOUT

120V 50/60 Hz

APPROVED BY			
APPROVED BY			
APPROVED BY			
DRAWN BY E.A.SALAZAR	SIZE B	SHEET QTY. 1 OF 1	
DATE 09/07/04	SCALE N.T.S.	DWG. NO. 1203-R	

TWR Enlightened Technology

DATE:	LTR.	REVISION
08/11/2021	J	UPDATED NOTE 4



NOTES:

1. FOR STEADY BURNING SIDELIGHTS REMOVE WIRE FROM M2 (E3) TO M3 (E3), AND PLACE JUMPER WIRE ON M2 (A1) TO (E3) ON SAME MODULE.

DATE:	LTR.	REVISION
08/11/2021	H	UPDATED NOTES

AA1MLED CONTROLLER SCHEMATIC LAYOUT

PROD DEPT

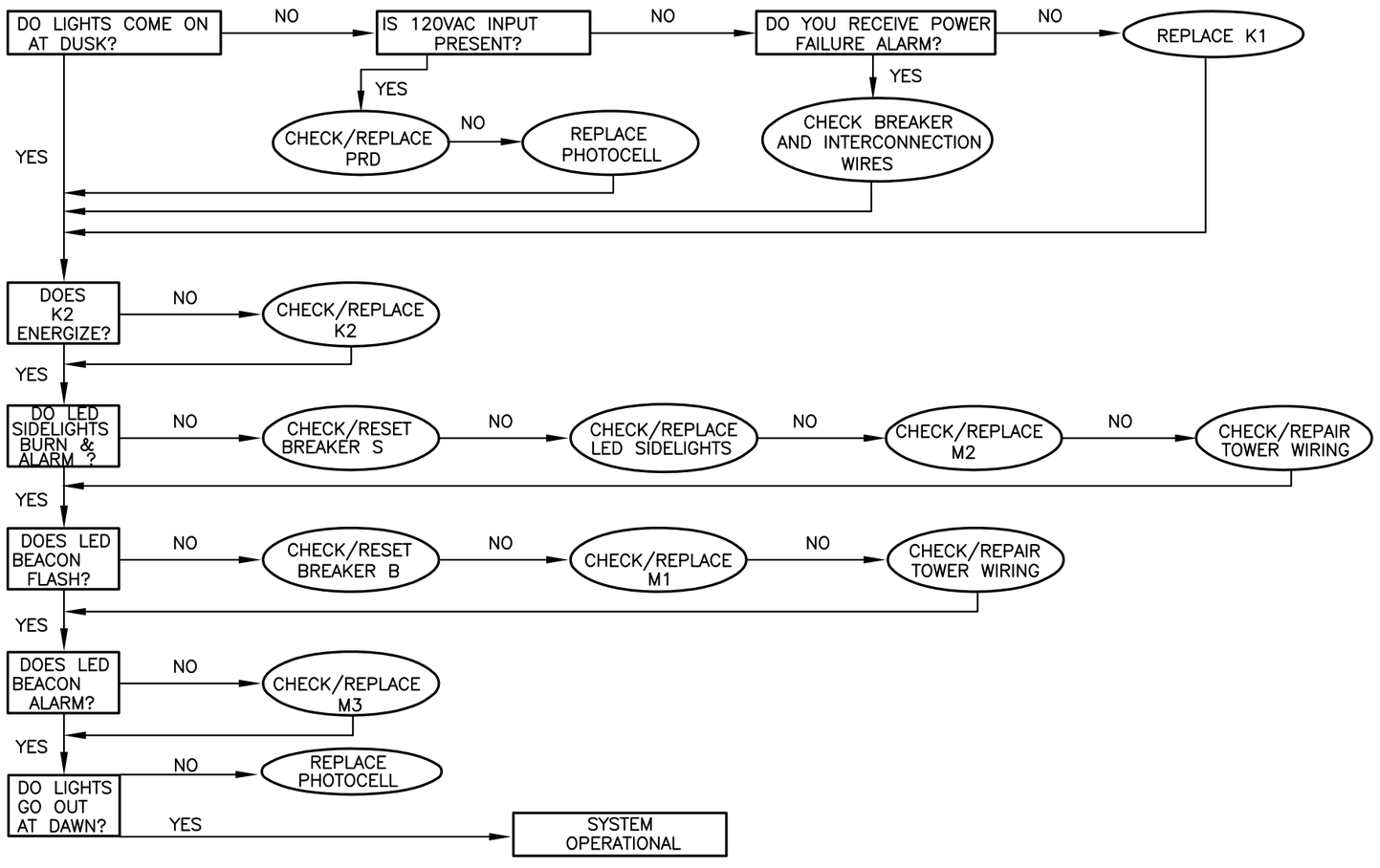
SERV DEPT

ENGINEER

TWR Lighting,® Inc.
Enlightened Technology®

DRAWN BY E.A.SALAZAR | SHEET SIZE B | SHEET QTY. 1 OF 1

DATE 09/07/04 | SCALE N.T.S. | DWG. NO. 1203-S

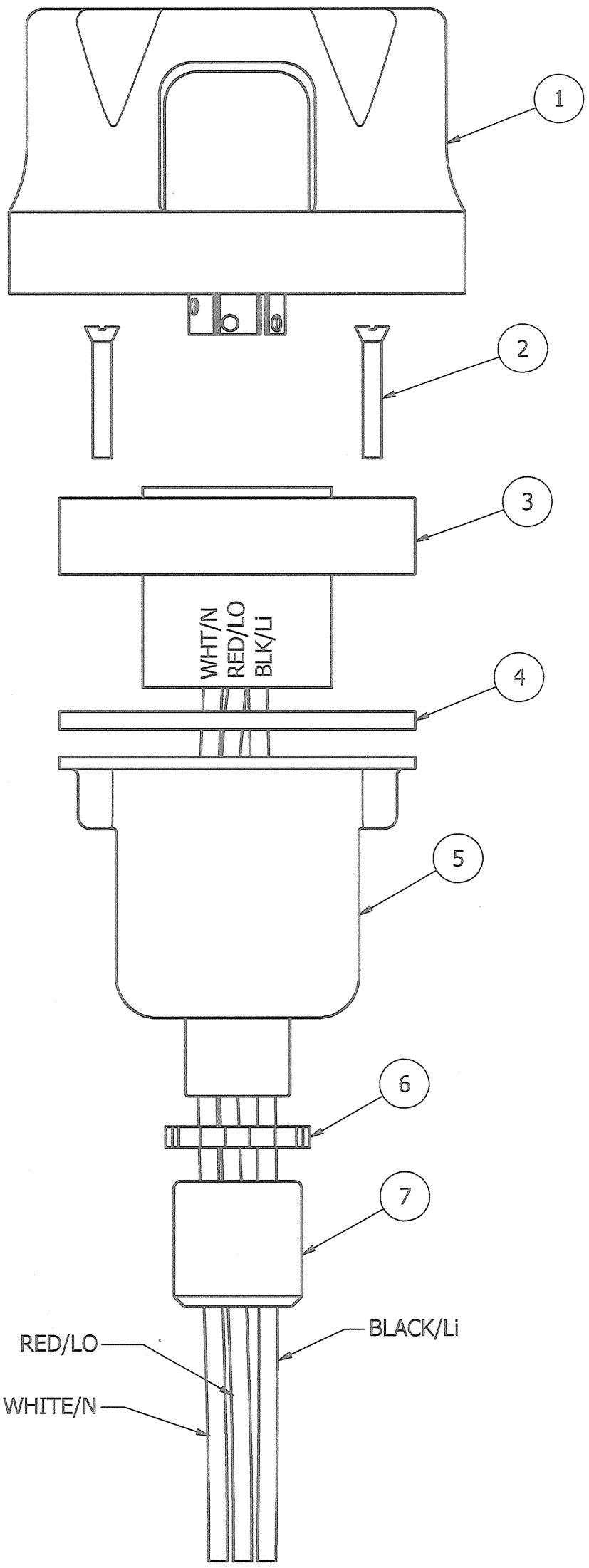


TROUBLESHOOTING FLOW CHART
AA1MLED 50/60HZ DWG.#1203-R

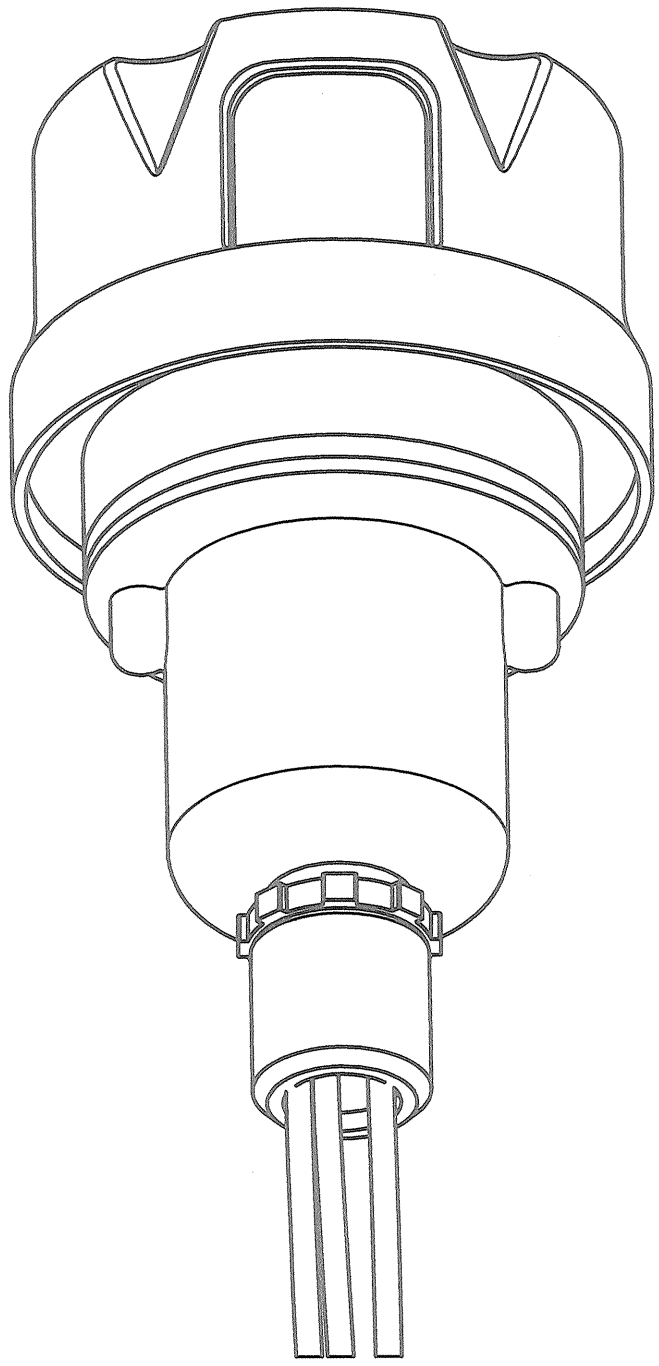
PROD DEPT	**TWR Lighting,® Inc.** *Enlightened Technology®*
SERV DEPT	
ENGINEER	
DRAWN BY: E.A.SALAZAR	SHEET SIZE: B; SHEET QTY.: 1 OF 1
DATE: 09/07/04	SCALE: N.T.S.; DWG. NO.: 1203-F

The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.

PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	PHOTOCELL
2	2	6-32 x 1" SCREW
3	1	RECEPTACLE SOCKET
4	1	RECEPTACLE GASKET
5	1	RECEPTACLE HOUSING
6	1	1/2" CONDUIT LOCKNUT
7	1	3/4" TO 1/2" REDUCER



EXPLODED VIEW



ASSEMBLY

NOTES:
1. ITEM #7 CAN BE USED TO REDUCE 3/4" CONDUIT TO 1/2" CONDUIT AT THE HOUSING OR AT THE CONTROLLER ITSELF.
2. IF ADDITIONAL WIRE IS REQUIRED OVER THE FACTORY 20', USE THE FOLLOWING CHART.
   21' TO 300'- 16 AWG TFFN
   301' TO 500' - 14 AWG TFFN

DATE	REV	AUTHOR	DESCRIPTION
02/03/2015	H	JZAMORANO	UPDATED NOTES

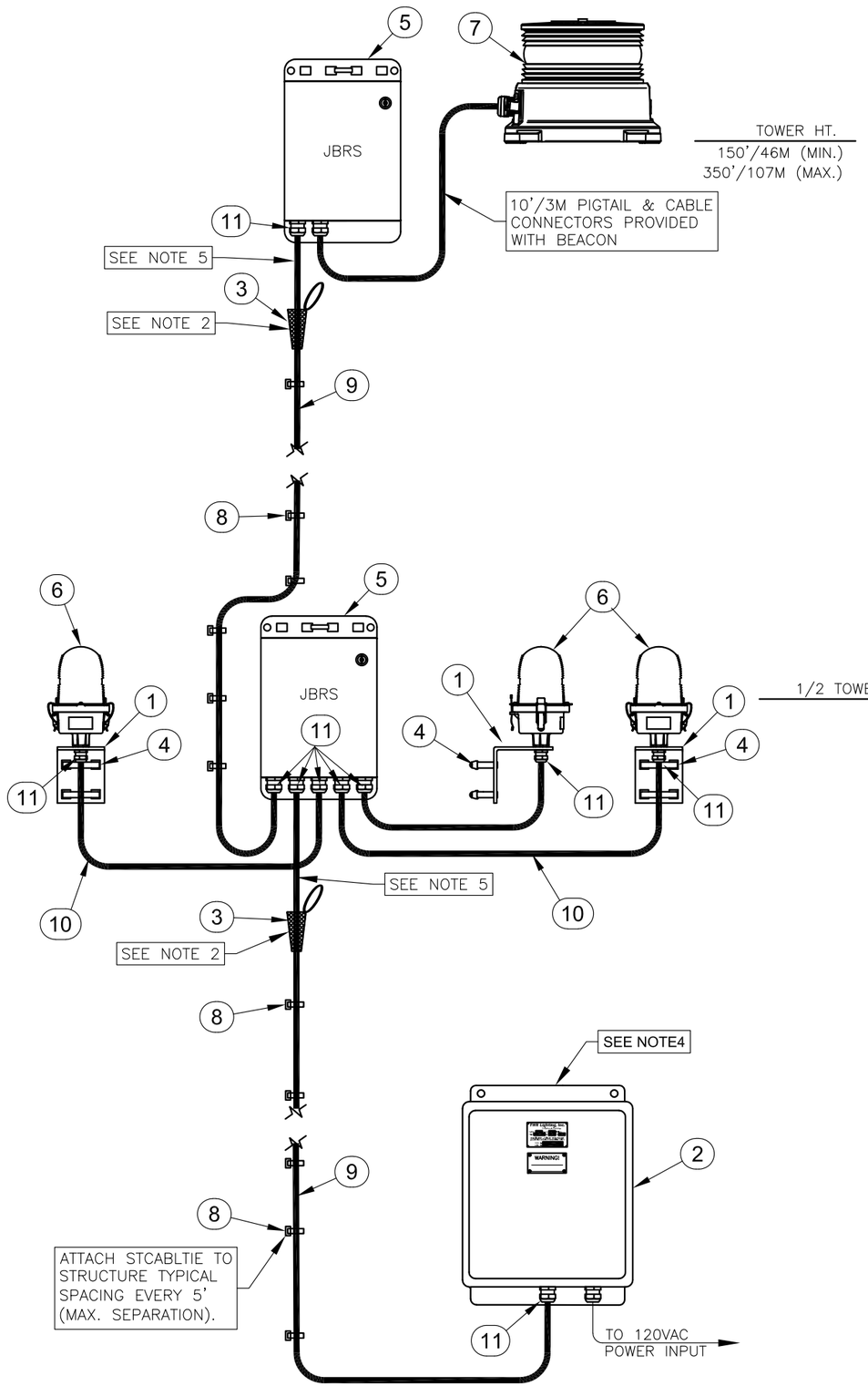
PHOTOCELL HOUSING DETAIL

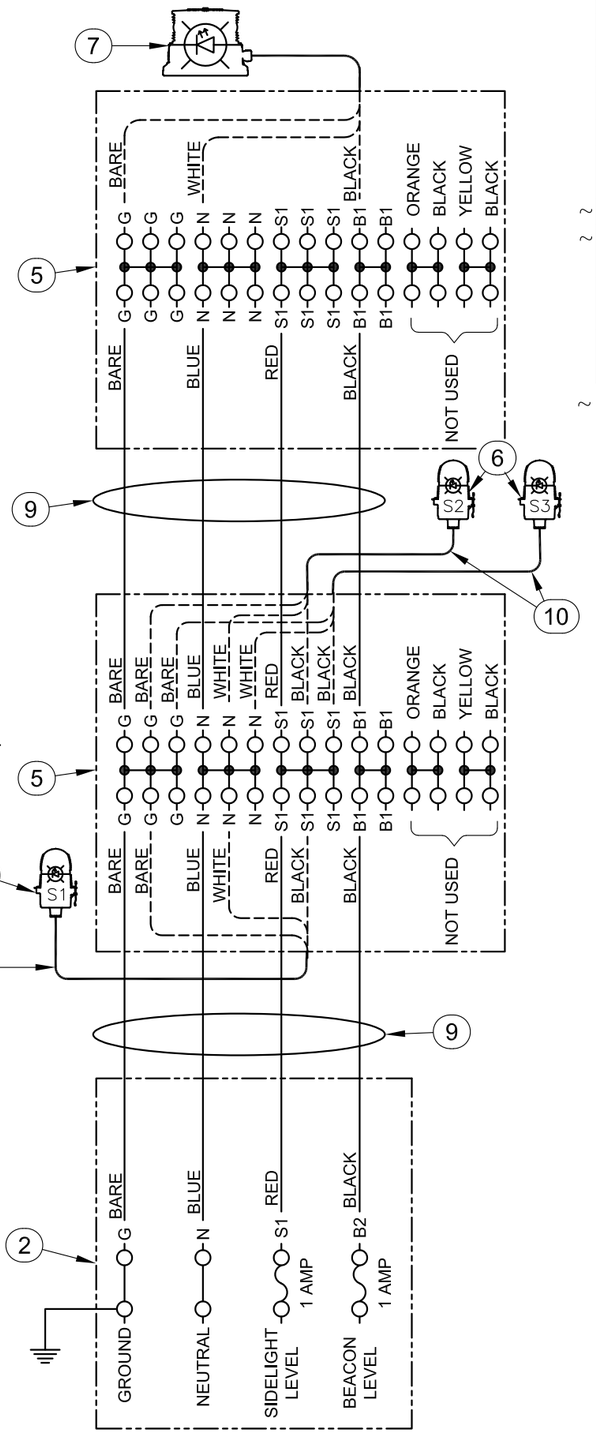
PROD DEPT
SERV DEPT
ENGINEER

TWR Lighting, Inc. HARK
Enlightened Technology®

DRAWN BY: vhernandez		SHEET SIZE: B	SHEET QTY.: 1 OF 1
DATE: 10/18/1995	SCALE: 1/1	DWG. NO.: 100239i	

The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.





BILL OF MATERIALS				
ITEM	QTY	UNITS	NAME	DESCRIPTION
1	3	ea	101136	OL1 UNIVERSAL MOUNTING BRACKET
2	1	ea	AA1MLED	AA1 LED CONTROLLER W/ ALARM
3	2	ea	CABLEGRIP3	SINGLE EYE LACE MESH 0.63"-0.74"
4	12	ea	HC6-10	STAINLESS STEEL MOUNTING STRAP 6" DIA.
5	2	ea	JBRS	UNIVERSAL MOUNTED JUNCTION BOX
6	3	ea	OL1LED	L-810 LED SIDELIGHT
7	1	ea	REDSTAR-S	L864 RED LED BEACON 120/240 VAC (SIMPLE)
8	0	ea	STCABLTIE	STROBE CABLE TIES (TWR HT. ÷ 5 + 20)
~ 9	0	ft	TCABLE12/3	12AWG / 3-CON. ARMORED CABLE (TWR HT. + BRIDGE + 40')
10	40	ft	TCABLE14/2	14AWG / 2-CON. ARMORED CABLE (FOR SIDELIGHTS)
11	10	ea	TMC2075A075	3/4 NPT ARMORED CABLE CONNECTOR 0.50"-0.75" ALUMINUM

~ = ITEMS QUANTITY CALCULATED ACCORDING TO STRUCTURE HEIGHT.

NOTES:
1) THIS DRAWING IS PROVIDED AS A GENERAL REFERENCE. TWR LIGHTING, INC. DOCUMENTATION SUPERSEDES THIS DRAWING & SHOULD BE REVIEWED PRIOR TO INSTALLATION OF THIS SYSTEM.
2) CABLEGRIP3 IS USED TO SUPPORT CABLE BEFORE CORD CONNECTOR, THE SINGLE EYE LOOP SHOULD BE ATTACHED TO STRUCTURE SECURELY.
3) IF MOUNT IS NEEDED FOR BEACON USE PART #BMSIDE-1.
4) REFER TO DRAWINGS #1203-R AND 1203-S FOR CONTROLLER POWER AND PHOTOCELL CONNECTIONS.
5) IT IS RECOMMENDED TO INSTALL A SERVICE LOOP PRIOR TO EVERY JUNCTION BOX AND CONTROLLER CONNECTION.

POWER CONSUMPTION

- ✓ 12hrs day - 4.0/Controller + 0.0/L864 + 0.0/L810 (4 x 12= 0.048KWh)
- ✓ 12hrs night - 4.0/Controller + 15.0/L864 + 36.0/L810 (55 x 12= 0.660KWh)
- ✓ "24hrs = **0.708 KWh"**

RSA11-3ARF RED LED LIGHTING KIT

(TOWERS 150'/46M TO 350'/107M)

APPROVED BY

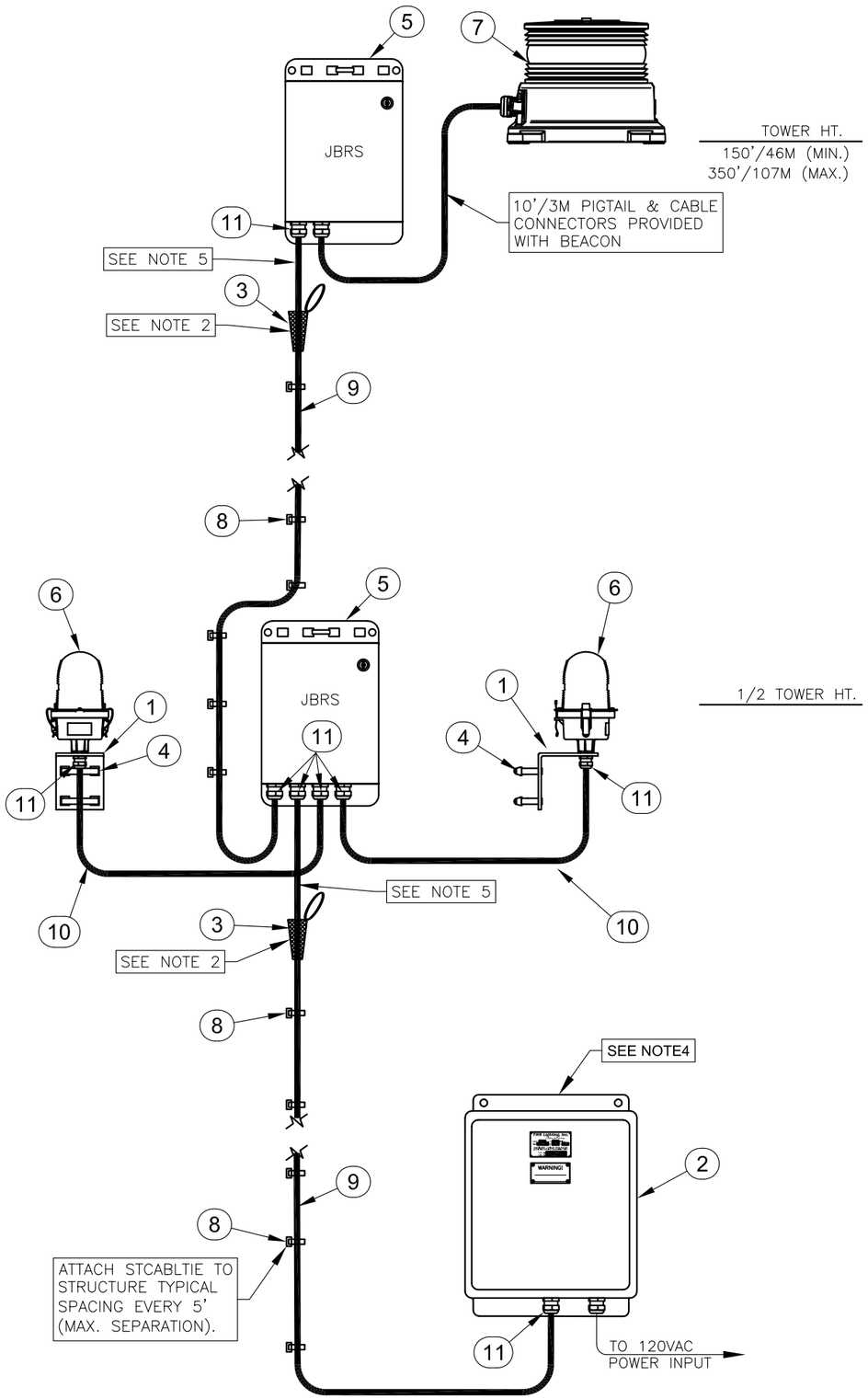
APPROVED BY

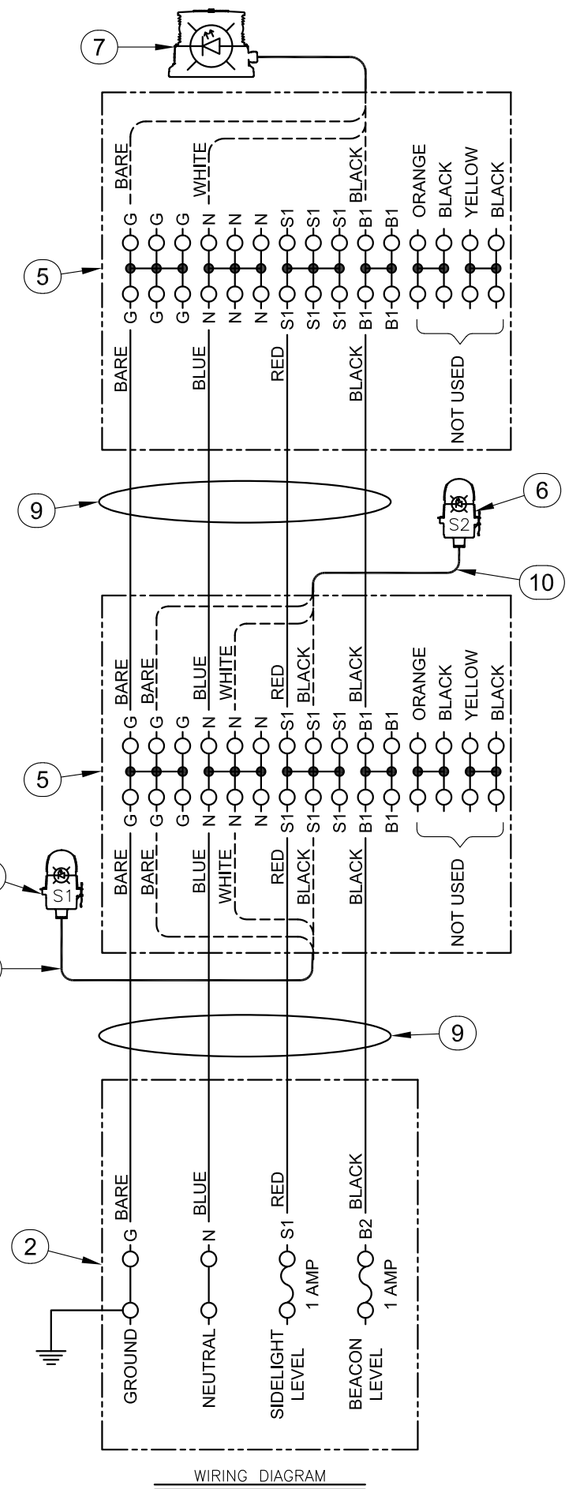
APPROVED BY

DRAWN BY J.ZAMORANO | SIZE B | SHEET QTY. 1 OF 1

DATE 03/01/2021 | SCALE N.T.S. | DWG. NO. RK-103

DATE:	REV.	DESCRIPTION
08/06/2021	A JZ	JUNCTION BOX & BOM UPDATE





WIRING DIAGRAM

BILL OF MATERIALS				
ITEM	QTY	UNITS	NAME	DESCRIPTION
1	2	ea	101136	OL1 UNIVERSAL MOUNTING BRACKET
2	1	ea	AA1MLED	AA1 LED CONTROLLER W/ ALARM
3	2	ea	CABLEGRIP3	SINGLE EYE LACE MESH 0.63"-0.74"
4	1	ea	HC6-10	STAINLESS STEEL MOUNTING STRAP 6" DIA.
5	2	ea	JBRS	UNIVERSAL MOUNTED JUNCTION BOX
6	2	ea	OL1LED	L-810 LED SIDELIGHT
7	1	ea	REDSTAR-S	L864 RED LED BEACON 120/240 VAC (SIMPLE)
8	0	ea	STCABLTIE	STROBE CABLE TIES (TWR HT. ÷ 5 + 20)
9	0	ft	TCABLE12/3	12AWG / 3-CON. ARMORED CABLE (TWR HT. + BRIDGE + 40')
10	30	ft	TCABLE14/2	14AWG / 2-CON. ARMORED CABLE (FOR SIDELIGHTS)
11	8	ea	TMC2075A075	3/4 NPT ARMORED CABLE CONNECTOR 0.50"-0.75" ALUMINUM

~ = ITEMS QUANTITY CALCULATED ACCORDING TO STRUCTURE HEIGHT.

NOTES:
1) THIS DRAWING IS PROVIDED AS A GENERAL REFERENCE. TWR LIGHTING, INC. DOCUMENTATION SUPERSEDES THIS DRAWING & SHOULD BE REVIEWED PRIOR TO INSTALLATION OF THIS SYSTEM.
2) CABLEGRIP3 IS USED TO SUPPORT CABLE BEFORE CORD CONNECTOR, THE SINGLE EYE LOOP SHOULD BE ATTACHED TO STRUCTURE SECURELY.
3) IF MOUNT IS NEEDED FOR BEACON USE PART #BMSIDE-1.
4) REFER TO DRAWINGS #1203-R AND 1203-S FOR CONTROLLER POWER AND PHOTOCELL CONNECTIONS.
5) IT IS RECOMMENDED TO INSTALL A SERVICE LOOP PRIOR TO EVERY JUNCTION BOX AND CONTROLLER CONNECTION.

POWER CONSUMPTION

- ✓ 12hrs day - 4.0/Controller + 0.0/L864 + 0.0/L810 (4 x 12= 0.048KWh)
- ✓ 12hrs night - 4.0/Controller + 15.0/L864 + 24.0/L810 (43 x 12= 0.516KWh)
- ✓ "24hrs = **0.564 KWh"**

RSA11-2ARF RED LED LIGHTING KIT

(TOWERS 150'/46M TO 350'/107M)

APPROVED BY

APPROVED BY

APPROVED BY

DRAWN BY J.ZAMORANO | SIZE B | SHEET QTY. 1 OF 1

DATE 07/14/2021 | SCALE N.T.S. | DWG. NO. RK-104

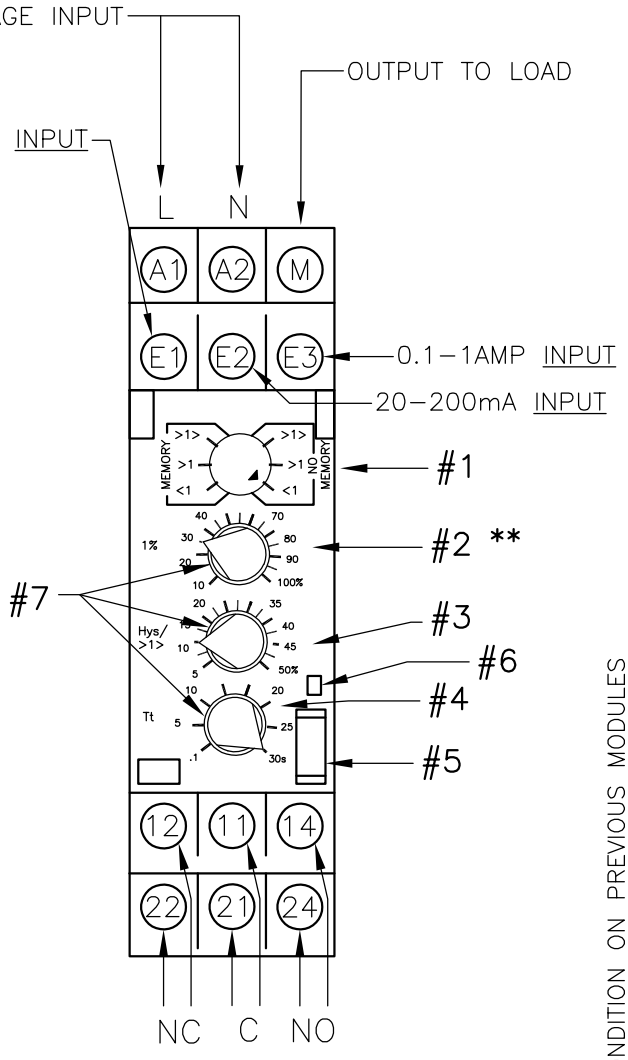
TWR Enlightened Technology

AC UNITS CURRENT MEASUREMENT RM22JA31MRSP01

120VAC PRODUCT SPECIFIC SETTINGS

QTY.	PART NO.	INPUT	#1	#2	#3	#4	#5
1	OL1_LED2	E2	*<1	30	20	30	OFF
2	OL1_LED2	E2	*<1	50	20	30	OFF
3	OL1_LED2	E3	*<1	**15**	20	30	OFF
4	OL1_LED2	E3	*<1	25	20	30	OFF
6	OL1_LED2	E3	*<1	35	20	30	OFF
8	OL1_LED2	E3	*<1	45	15	30	OFF
10	OL1_LED2	E3	*<1	60	10	30	OFF
1	LEDBEACON2	E3	*<1	**20**	20	30	OFF
1	LEDBEACON2A	E3	*<1	**15**	20	30	OFF
1	LEDBEACON2(T)	E3	*<1	**25**	20	30	OFF
1	STLDBEACON2	E3	*<1	**20**	20	30	OFF
1	STLDBEACON2A	E3	*<1	**15**	20	30	OFF
2	STLDBEACON2A	E3	*<1	**25**	20	30	OFF
2	STLDBEACON2A	E3	*<1	**25**	20	30	OFF

*NO MEMORY



FUNCTIONS

1) Configuration: Selection of operation mode (<1 / >1 / >1<) with or without memory.
2) Adjustment of current threshold as % of setting range.
3) Hysteresis adjustment from 5% to 50%.
4) Time Delay adjustment from 0.1 to 30sec.
5) Diagnostic button.
6) Yellow indicator light **(See conditions below)**
7) Dial Pointer (Green) LED
   - Steady green LED indicates that supply to the RM22 is present
   - Flashing green LED indicates a setting has been changed that requires a power cycle.

YELLOW LED CONDITIONS

NOTE: ( ) ASTERISK INDICATES LED CONDITIONS OPERATE OPPOSITE FROM RM22JA31MR MODULE

*****

→ Steady Burn Fixtures

- Yellow light *off : Normal condition (no alarm)
- Yellow light flashing : Undercurrent condition detected and time delay initiated
- Yellow light *on : Alarm condition

→ Flashing Fixtures

- Yellow light flashing inconsistent : Normal condition (no alarm)
- Yellow light flashing consistent : Under current condition detected and time delay initiated

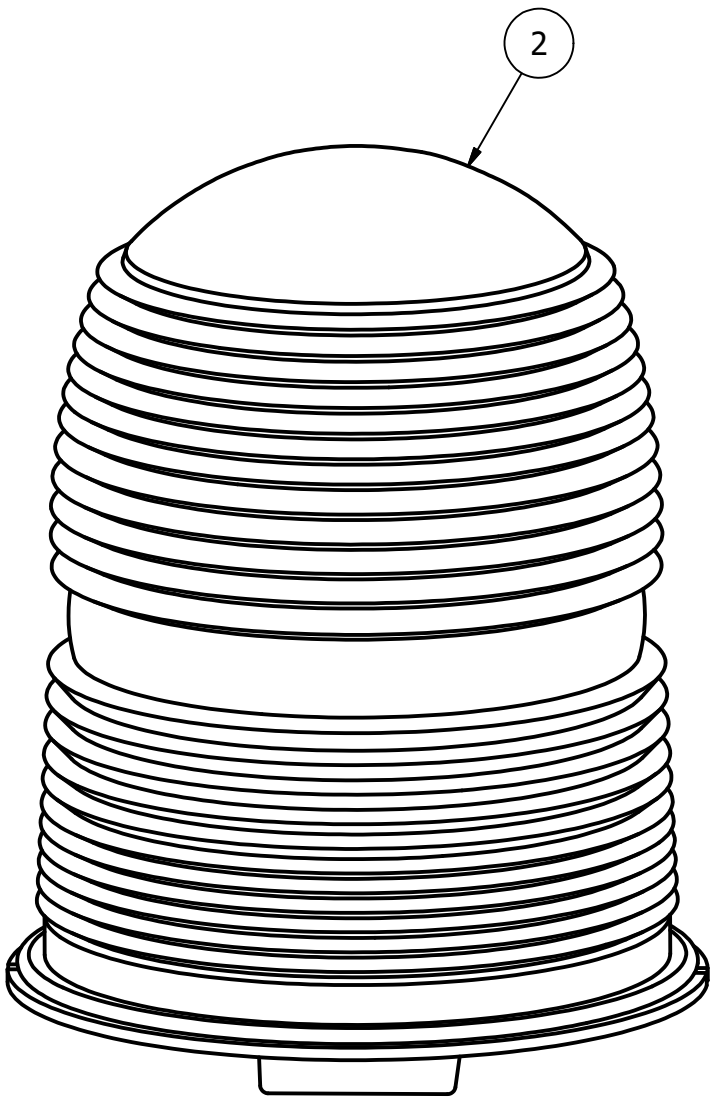
NOTE : To help troubleshoot or to set the sense current, turn the time delay to 0sec. Adjusting the current setting should only be done if it is known that all the lights are functioning. For Steady Burn adjust the current until the yellow LED comes *off, and the relay is not dropping in and out. For Flashing Fixtures adjust the current setting until the yellow light starts to flash. This is the normal condition setting. Return the time delay back to 30sec.

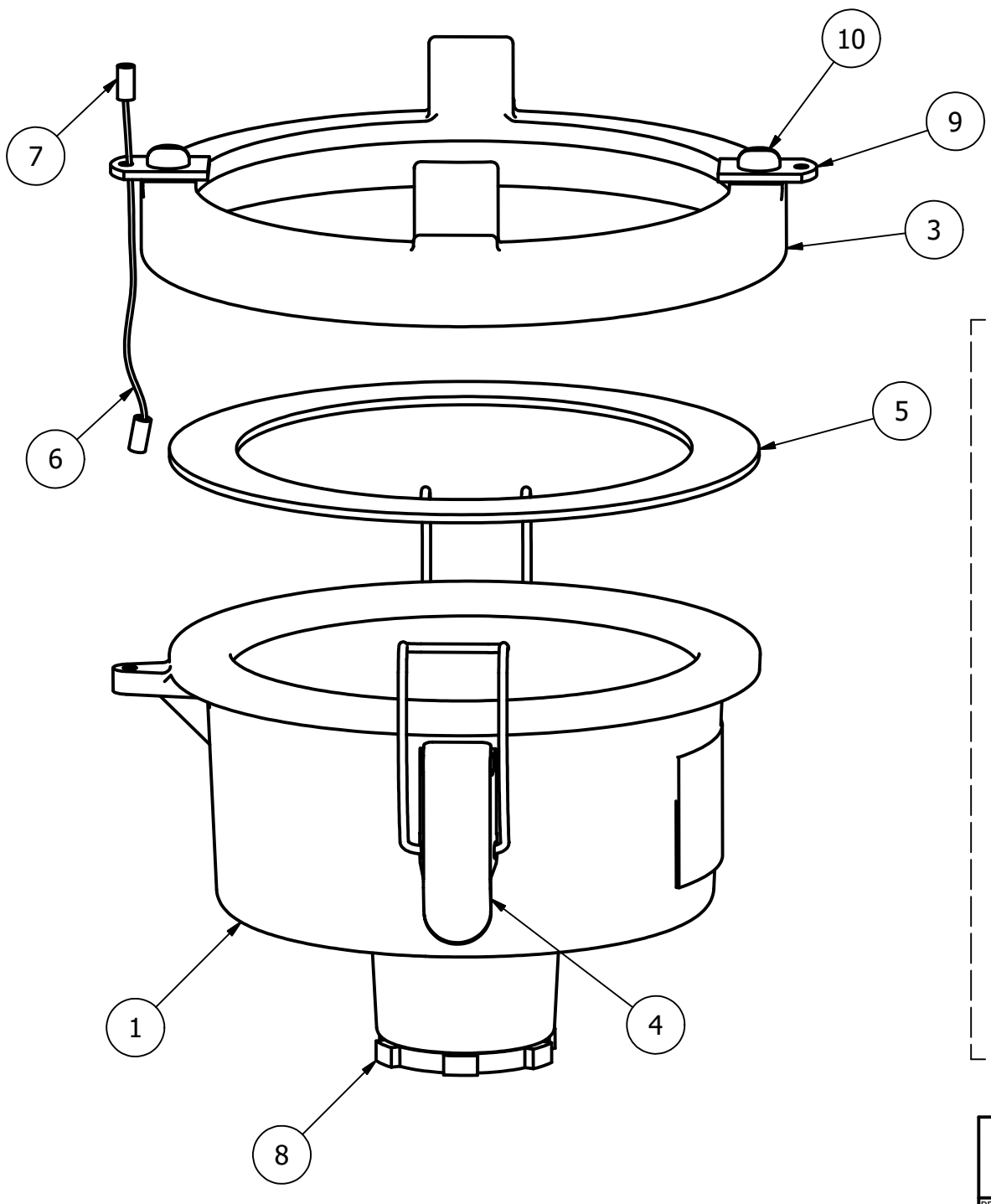
- Yellow light *on : Alarm condition

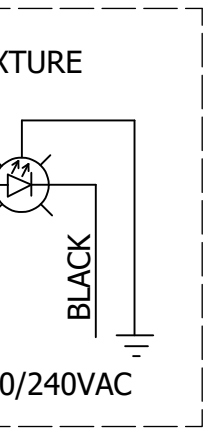
** Due to current draw tolerances slight adjustments to setting #2 may be needed for proper alarming.

TWR Lighting, Inc. DWG#101088_RC *= OPPOSITE CONDITION ON PREVIOUS MODULES

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	105RV	SINGLE SIDELIGHT BODY
2	1	LED120-1RK	120/240VAC LED LIGHT
3	1	106V	VALOX LENS HOLDER RING
4	2	HC255SS	SIDELIGHT LATCH
5	1	OLG2	OL1 6 LED GASKET
6	.5	7X7SS	1/16 HOL 7X7 S.S. WIRE
7	2	A1A	STAKON CRIMP
8	1	A314	3/4" CONDUIT LOCKNUT GALV.
9	3	12V245	OL LENS CLIP
10	3	832X14PH	8-32 X 1/4 PH SS SLOT SCREW

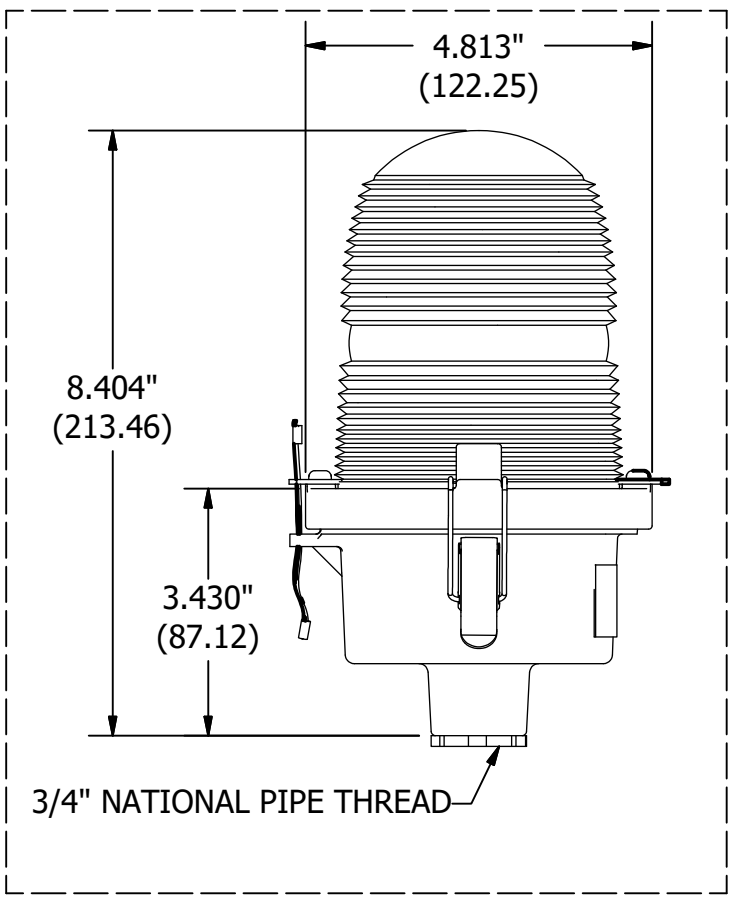






* GROUND WIRE MUST BE CONNECTED TO PROPERLY PROTECT POWER SUPPLY. FAILURE TO GROUND WILL VOID ALL WARRANTIES.

DIMENSIONS



AUTHOR	DATE	REV	DESCRIPTION
J.ZAMORANO	10/23/2015	D	UPDATED DIMS.

OL1CBH34LED2 120VAC FAA-OL16LED (L810 OBSTRUCTION LIGHT)

PROD DEPT

SERV DEPT

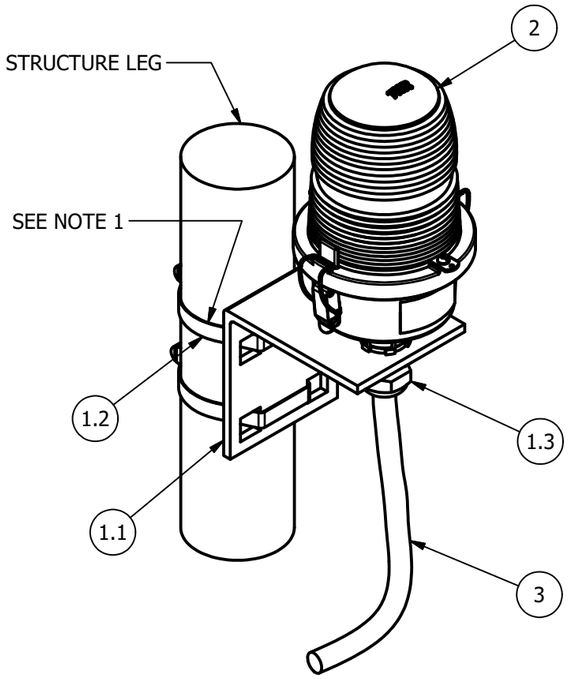
ENGINEER

TWR Lighting, Inc. HARK
Enlightened Technology®

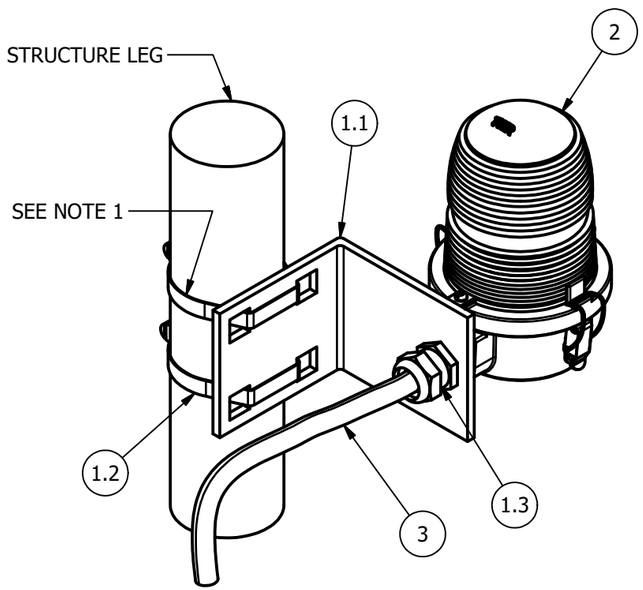
DRAWN BY	SHEET SIZE	SHEET QTY.
J.BUSTAMANTE	B	1 OF 1
DATE 6/14/2007	SCALE N.T.S	DWG. NO. 100749i

The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.

BOTTOM HUB INSTALLATION



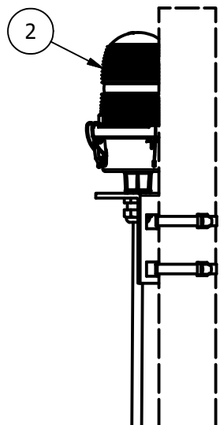
SIDE HUB INSTALLATION

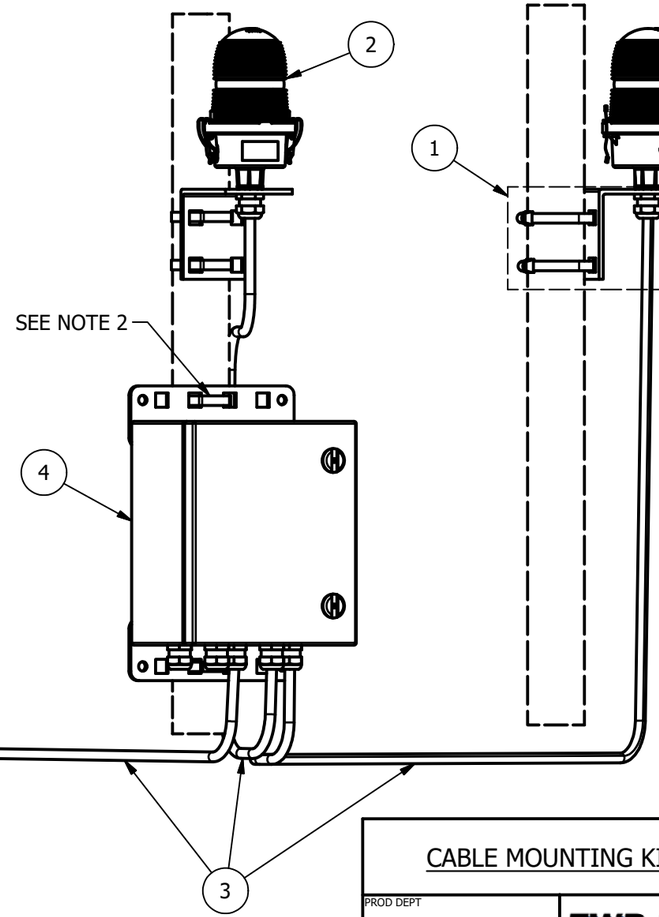


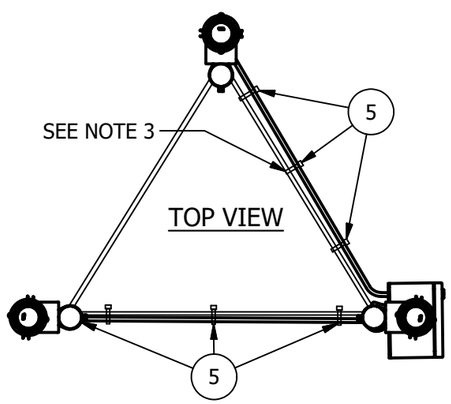
NOTES

1. PART HC6-10 NEEDS TO BE DOUBLED FOR TOWER LEGS WITH A DIAMETER LARGER THEN 6".
2. USE PART HC6-10 PROVIDED WITH JUNCTION BOX TO SECURE ASSEMBLY TO A VERTICAL PORTION OF STRUCTURE. REFERENCE DRAWING 101180.
3. USE PART STCABLETIE TO SECURE CABLE TO THE STRUCTURE.
4. ITEMS 1.1 TO 1.3 ARE INCLUDED WITH ITEM 1. QUANTITIES REFLECT 3 OLMOUNTKITs.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	OLMOUNTKIT	OL UNIVERSAL MOUNTING KIT
1.1	3	101136	OL MOUNTING BRACKET
1.2	1.2	HC6-10	STAINLESS STEEL MOUNTING STRAP 6" DIA.
1.3	3	S2134	3/4" CABLE GLAND 0.512" - 0.709"
2	3	OL1_____	3/4" BOTTOM OR SIDE HUB SIDE MARKER
3	40'	CSO14/3	14AWG / 3CON. S.O. CORD
4	1	JBS-S3	UNIVERSAL MOUNTED JB FOR 3 OLs
5	6	STCABLTIE	CABLE TIES (FOR CABLE SUPPORT)





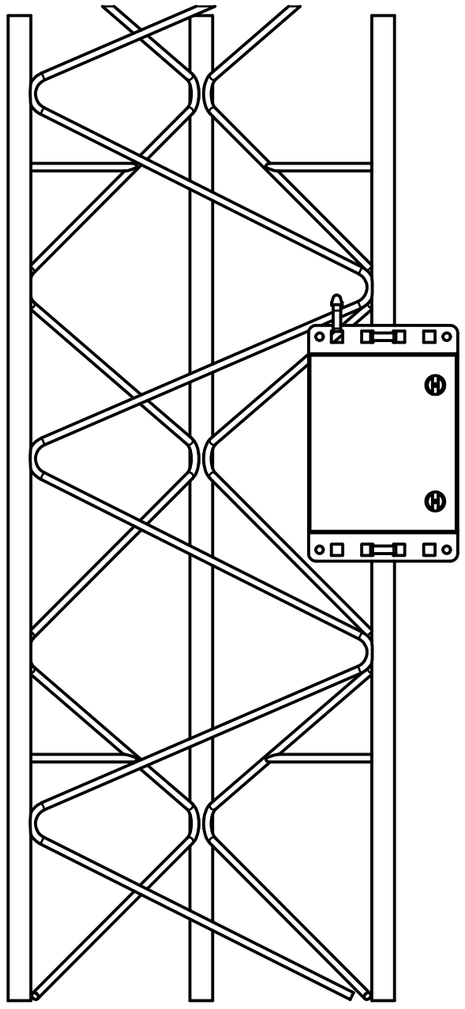


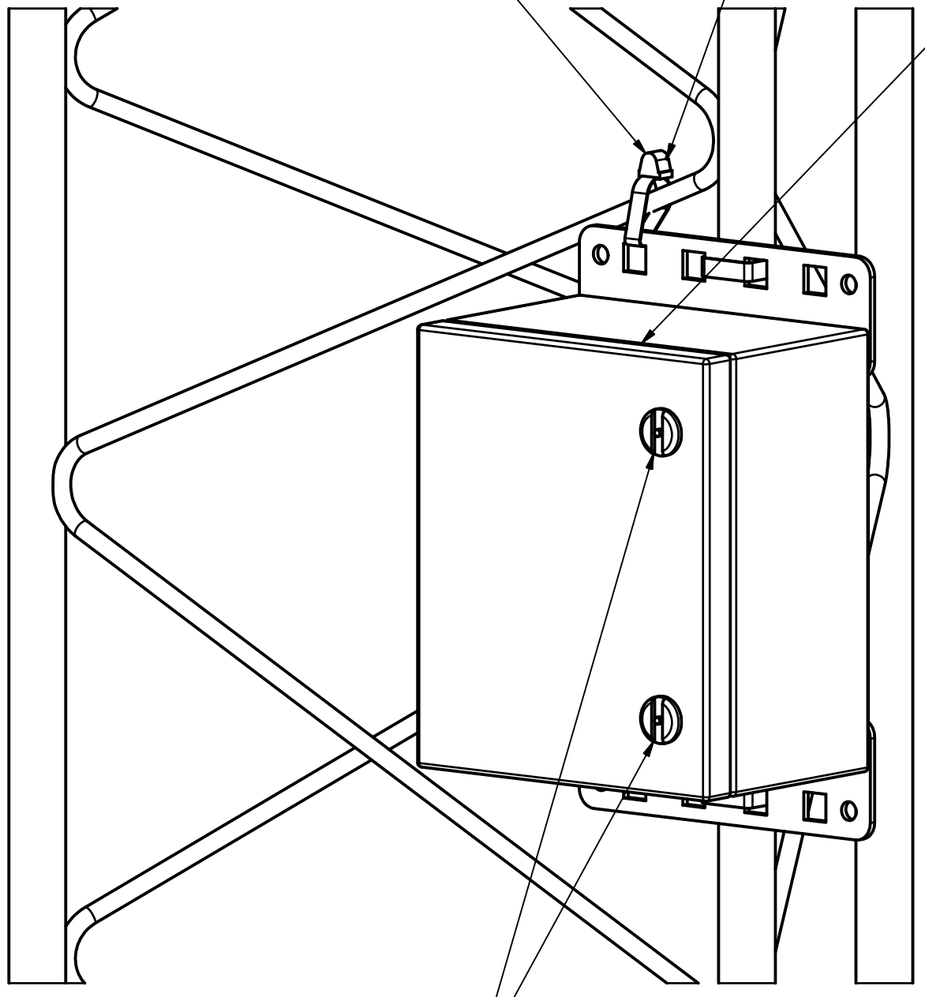
REV	AUTHOR	DATE	DESCRIPTION
B	J.ZAMORANO	6/1/2020	UPDATED JUNCTION BOX

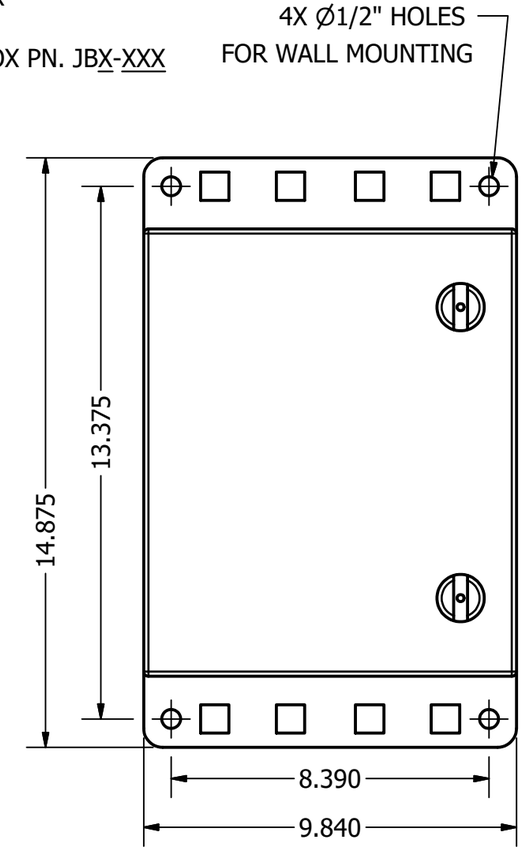
CABLE MOUNTING KIT FOR (3) SIDELIGHTS

PROD DEPT		TWR Lighting, Inc. HARK Enlightened Technology®	
SERV DEPT			
ENGINEER			
DRAWN BY	J.ZAMORANO	SHEET SIZE B	SHEET QTY. 1 OF 1
DATE	3/19/2019	SCALE N.T.S	DWG. NO. 101138

The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying with FAA requirements as published in Advisory Circular 150/5345-43.







JUNCTION BOX MOUNTING DETAIL

PROD DEPT		TWR Lighting®, Inc. Enlightened Technology®	
SERV DEPT			
ENGINEER			
DRAWN BY	J.ZAMORANO	SHEET SIZE	B
		SHEET QTY.	1 OF 1
DATE	05/19/2020	SCALE	N.T.S
		DWG. NO.	101180