

TWR Lighting, Inc.

Enlightened TechnologySM

4300 WINDFERN RD SUITE 100 - HOUSTON TX 77041-8943

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 # AA0M3XFRSSIND

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc.

Enlightened TechnologySM

AA0M3XFRSSIND CONTROLLER

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TWR Lighting, Inc.

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GENERAL INFORMATION

The TWR Lighting, Inc. Model AA0M3XFRSSIND Controller is for applications of three (3) double obstruction light fixtures (OL-2).

The obstruction lights burn steady. Each fixture requires two (2) 116 watt 230V AC bulbs (116A21TS230V).

A by-pass switch (SW1) allows the controller to be turned on during daylight hours without covering the photocell.

The photocell is a 3 blade, twist to lock type.

Power supplied to the controller shall be 230V AC 50 / 60 Hz single phase.

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

POWER FAILURE Monitors 230V AC to the controller. Alarms in the event of power failure, or tripped circuit breaker.

OBSTRUCTION LIGHTS Will give an alarm when main lamp on the OL2 fixtures fails.

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1.0 INSTALLATION INSTRUCTIONS

1.1 MOUNTING THE CONTROLLER CABINET

(Refer to drawing 1273-R)

1.1.1 The power supply control cabinet can be located at the base of the structure, or in an equipment building. Mounting footprints are showing on drawing 1273-R. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

1.1.2 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 “COM,” the black wire is connected to the socket terminal marked “B,” and the red wire is connected to the socket terminal marked “R.” As above, the photocell should be positioned so that it does not “see” ambient light, which would prevent it from switching to the nightmode.

1.1.3 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. Care must be taken to assure that the photocell does not “see” any ambient light that would prevent it from switching into the nightmode. The photocell wiring is the same as in 1.1.1.

1.2 The wiring from the photocell, the service breaker, and the sidelights should enter the control cabinet through the water-tight connectors in the bottom of the cabinet. Inside the cabinet, the connections will be made on the terminal strip and circuit breakers located at the bottom of the chassis. These connections are made as follows:

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2.0 EXTERNAL PHOTOCELL WIRING

(Refer to drawing 1273-R)

- 2.1 Connect the BLACK wire from the photocell to terminal block (TB2) marked "L."
- 2.2 Connect the RED wire from the photocell to terminal block (TB2) marked "SSR."
- 2.3 Connect the WHITE wire from the photocell to terminal block (TB2) marked "N."

3.0 POWER WIRING

(Refer to drawing 1273-R)

- 3.1 Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).
- 3.2 Circuit breaker needs to be rated at 15 amps.
- 3.3 Connect incoming 230V AC "HOT" to terminal block (TB1) marked "L."
- 3.4 Connect neutral to one (1) of the terminal blocks (TB1) marked "N."
- 3.5 Connect the AC ground to the ground lug located to the left of TB2.

4.0 SIDELIGHT WIRING

(Refer to drawing 1273-R)

- 4.1 Connect the wire from the main lamp of the first OL2 fixture to the breaker marked "S1."
- 4.2 Connect the wire from the secondary lamp of the first OL2 fixture to the breaker marked "S2."
- 4.3 Connect the wire from the main lamp of the second OL2 fixture to the breaker marked "S3."

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- 4.4 Connect the wire from the secondary lamp of the second OL2 fixture to the breaker marked "S4."
- 4.5 Connect the wire from the main lamp of the third OL2 fixture to the breaker marked "S5."
- 4.6 Connect the wire from the secondary lamp of the third OL2 fixture to the breaker marked "S6."
- 4.7 Connect the neutral wire(s) to the terminal block (TB1) marked "N."

5.0 SIDELIGHT ALARM WIRING

(Refer to drawings 1273-R and 1273-S)

- 5.1 Independent contact closures are provided for: Power Failure, OL2 #1 Fixture Main Lamp Burnout (S1), OL2 #2 Fixture Main Lamp Burnout (S2), OL2 #3 Fixture Main Lamp Burnout (S3).
- 5.2 Alarm wiring. To utilize the dry contacts, the customer will need five (5) pairs of wires to interface with the alarm device. The wiring for each pair will terminate as follows:
 - 5.2.1 **POWER FAILURE** Connect alarm common to relay K1, terminal #1. Connect alarm wire to K1, terminal #6, for normally open, or terminal #3, for normally closed monitor.
 - 5.2.2 **S1 ALARM** Connect alarm common to module M1, terminal #4. Connect alarm wire to module M1, terminal #5, for normally open, or terminal #6, for normally closed monitoring.
 - 5.2.3 **S2 ALARM** Connect alarm common to module M2, terminal #4. Connect alarm wire to module M2, terminal #5, for normally open, or terminal #6, for normally closed monitoring.

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5.2.4 S3 ALARM

Connect alarm common to module M3, terminal #4. Connect alarm wire to module M3, terminal #5, for normally open, or terminal #6, for normally closed monitoring.

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6.0 THEORY OF OPERATION

6.1 POWER SUPPLY

240V AC enters the controller from the circuit breaker panel. Line sits at the PRD waiting to be energized, and also keeps the power failure relay K1 energized. When the 6390-FAA photocell is activated, line energizes the coil of the PRD. This can also be accomplished by using the photocell by-pass switch (SW1).

6.2 SIDELIGHTS

Line (LD) is also sent to modules M1 – M3, and through the toridal sensing coils. M1 – M3 are the current sensors for all of the main lamps. If the main lamp within an OL2 fixture burns out, then that particular module will send 230V to the secondary lamp, as well as the onboard relay coil, which will cause a contact closure for that fixture.

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7.0 MAINTAINANCE GUIDE

7.1 RED OBSTRUCTION LIGHTING

The only required maintenance needed to be performed is replacement of the lamps in the L-810 fixture. Lamps should be replaced after being operated for not more than 75 percent of the rated life, or immediately upon failure, as per Advisory Circular 70/7460-1K. By following these instructions, maximum safety and performance can be achieved.

TOOLS REQUIRED: NONE

7.2 L-810 LAMP REPLACEMENT

7.1.1 Unclasp the two (2) latches and allow the bail to recline backward.

7.1.2 Lift the lens up and over the lamp, allowing the lens to hang from the safety cable.

7.1.3 Unscrew the lamp counter clockwise and remove.

7.1.4 Install the new lamp by screwing the lamp clockwise.

7.1.5 Re-install the lens, making sure it is seated properly on the base.

7.1.6 Re-clasp the two (2) latches

7.3 CONTROLLER

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

7.4 PHOTOCELL

The photocell is a sealed unit. No maintenance is needed nor required, other than replacement as needed.

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8.0 MAJOR COMPONENTS PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240V AC PHOTOCELL
1	A1614CHNFSS	STAINLESS STEEL ENCLOSURE
7	8WA1204	TERMINAL BLOCK (TB1 & TB2)
6	S261-D1	1 amp CIRCUIT BREAKER
2	8WA1808	END STOP
1	SSPIGTAIL	20' PHOTOCELL SOCKET PIGTAIL
1	STJ01002	PHOTOCELL BYPASS SWITCH (SW1)
1	V275LA20A	METAL OXIDE VARISTOR (MOV)
1	9KE-240V	SPDT 240V AC RELAY (K1)
3	CM-250	SIDELIGHT ALARM MODULES (M1 – M3)
3	9KE1LAMP-240	240V 1 LAMP RELAY (K2 – K4)
1	PRD7AYO-240V	POWER RELAY 240V (PRD)

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9.0 SUGGESTED SPARE PARTS LIST

QTY	PART NUMBER	DESTRPTION
1	6390-FAA	120 – 240V AC PHOTOCELL
1	CM-250	SIDELIGHT ALARM MODULES (M1 – M3)
1	S261-D1	1 amp CIRCUIT BREAKER (S1 – S6)
1	9KE-240V	SPDT 240V AC RELAY (K1)
1	9KE1LAMP-240	240V 1 LAMP RELAY (K2 – K4)

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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 70% of the minimum intensity requirements as defined in the FAA Advisory Circular 150/5345-43E dated 10/19/95. 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.

Field Service – Repairs are warranted for 90 days from the date of service, except where TWR has made recommendations that were not adhered to that may cause premature failure on previous repairs. Labor, Travel, and Tower Climb are not covered under warranty. Customer shall be obligated to pay for all incurred charges not related to warranty. All warranty repairs are performed by trained TWR personnel, or dispatched through an extensive network of certified and insured Service Representatives.

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Return Policy

Return 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
- 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., 4300 WINDFERN RD #100, HOUSTON TX 77041-8943, 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).

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 un-repairable 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 **\$60.00 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.

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AA0M3XFRSSIND CONTROLLER

Warranty & Return Policy

(continued)

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 un-repairable, or the returned part(s) is found to have no defect, the customer will be subject to a **\$60.00 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.

Return to Stock – Any order that is returned to TWR for part(s) ordered incorrectly by the customer, or unneeded upon receipt, the customer is required to pay a **20% restocking fee.** A credit will be issued once it is determined that the Return Terms are 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.

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.

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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: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

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RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#: _____ DATE: _____

CUSTOMER: _____

CONTACT: _____ PHONE NO.: _____

ITEM DESCRIPTION (PART NO.): _____

MODEL NO.: _____ SERIAL NO.: _____

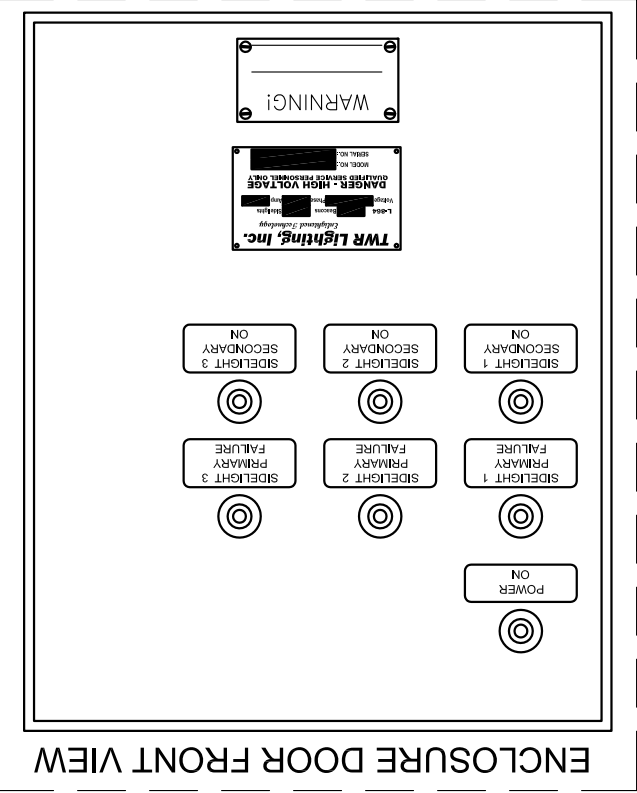
ORIGINAL TWR INVOICE NO.: _____ DATED: _____

DESCRIPTION OF PROBLEM: _____

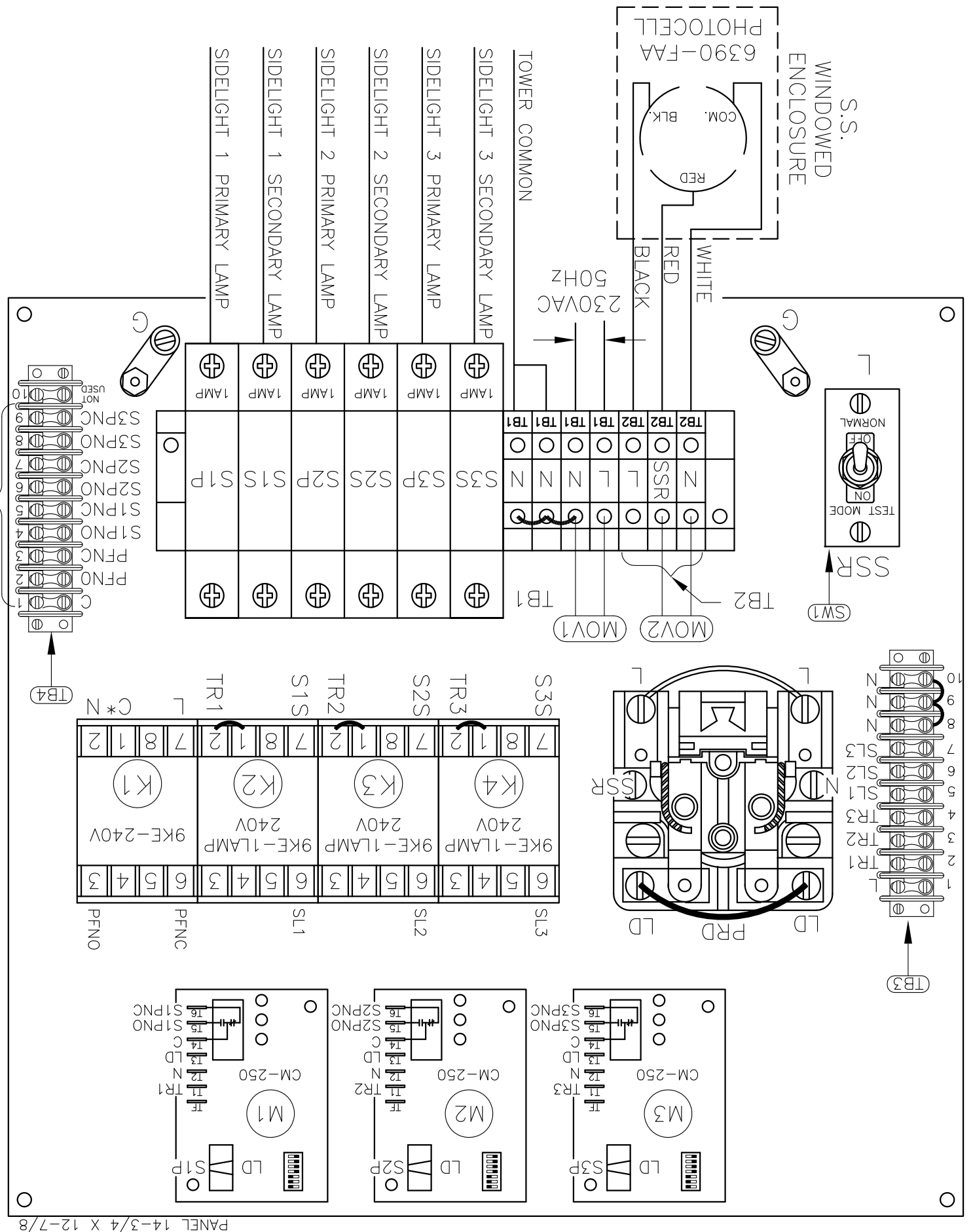
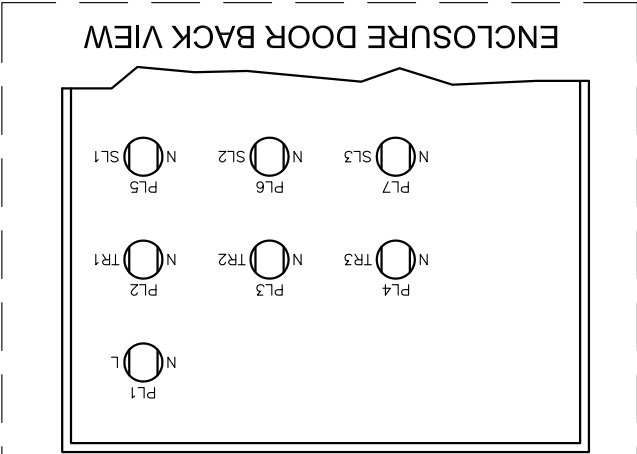
SIGNED _____ DATE NEEDED _____

RETURN ADDRESS: _____

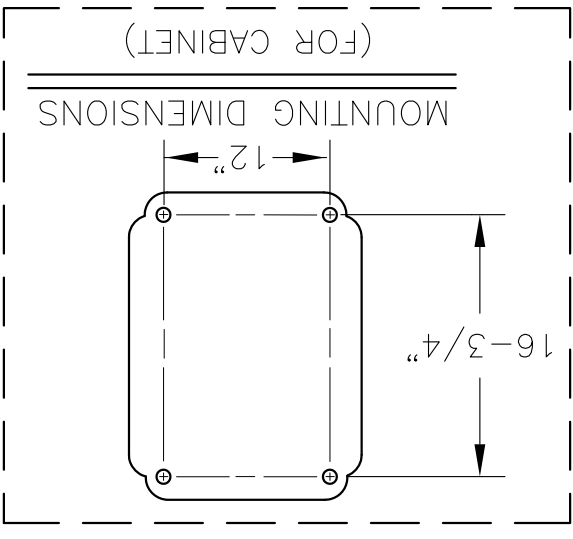
PLEASE RETURN PRODUCT TO: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943



SCHEMATIC TAG	DESCRIPTION
PL1	POWER ON INDICATOR
PL2	SIDELIGHT 1 PRIMARY FAILURE (RED)
PL3	SIDELIGHT 2 PRIMARY FAILURE (RED)
PL4	SIDELIGHT 3 PRIMARY FAILURE (RED)
PL5	SIDELIGHT 1 SECONDARY ON (RED)
PL6	SIDELIGHT 2 SECONDARY ON (RED)
PL7	SIDELIGHT 3 SECONDARY ON (RED)



PANEL 14-3/4 X 12-7/8



NOTES:
 1. WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) L TO L TO L.

*CUSTOMER ALARM POINTS

C = ALARM COMMON
 NO = NORMALLY OPEN
 NC = NORMALLY CLOSE
 PFNO/PFNC = POWER FAILURE
 S1PNO = SIDELIGHT 1 PRIMARY FAILURE NC
 S1PNC = SIDELIGHT 1 PRIMARY FAILURE NC
 S2PNO = SIDELIGHT 1 PRIMARY FAILURE NO
 S2PNC = SIDELIGHT 1 PRIMARY FAILURE NC
 S3PNO = SIDELIGHT 1 PRIMARY FAILURE NO
 S3PNC = SIDELIGHT 1 PRIMARY FAILURE NC

* ALARM OUTPUTS ARE FORM C

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 Enlightened Technology

PROD DEPT _____
 SERV DEPT _____
 ENGINEER _____

DRAWN BY E.A.SALAZAR
 DATE 08/04/2011
 SCALE N.T.S.
 DWG. NO. _____

1273-R
 SHEET SIZE B
 SHEET QTY. 1 OF 1

AAOM3XFRSSIND CHASSIS LAYOUT

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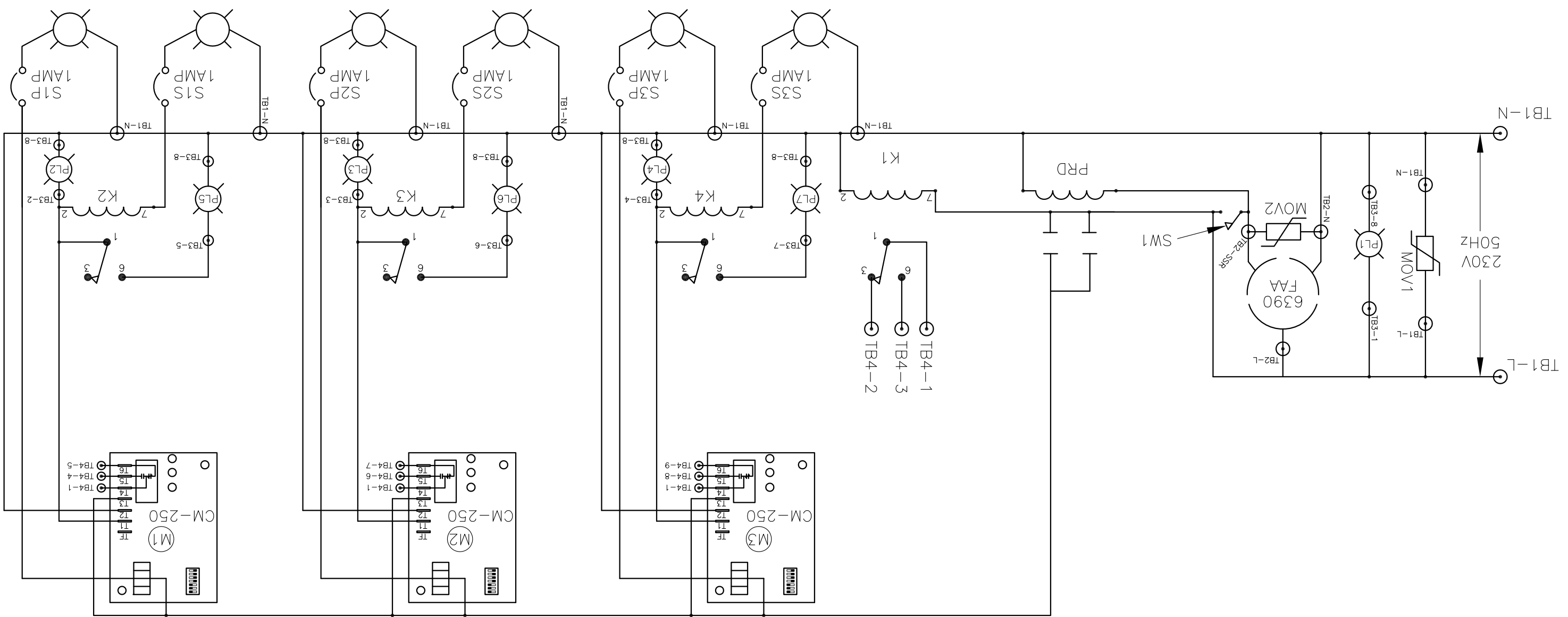
AAOM3XFRSSIND SCHEMATIC LAYOUT

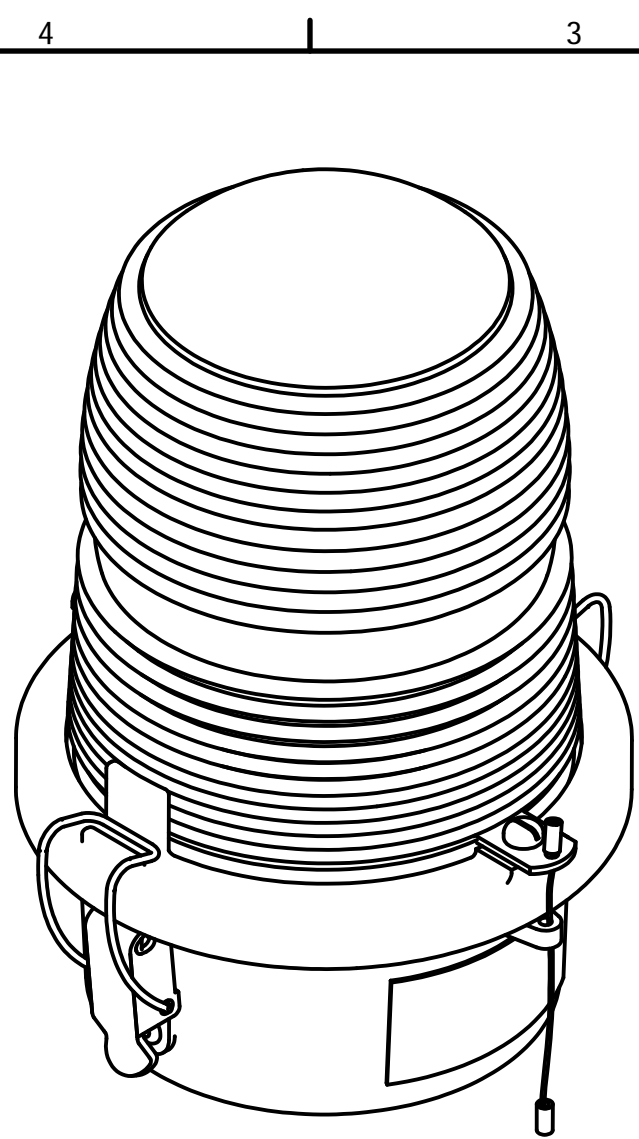
PROD DEPT	
SERV DEPT	
ENGINEER	E.A.SALAZAR
DRAWN BY	E.A.SALAZAR
DATE	08/05/2011
SCALE	N.T.S.
DWG. NO.	1273-S

SHEET SIZE SHEET QTY. 1 OF 1

The use of non-standard parts or modifications to original equipment designs will void the manufacturer's warranty and could invalidate the assurance of compliance with FAA requirements as published in Advisory Circular 150/5345-43. NOTICE: The drawings and photographic images contained herein are the sole property of TWR Lighting, Inc. All information contained herein that is not generally known shall be considered confidential except to the extent the information has been previously established. The drawings and photographic images contained herein may not be reproduced, copied or used as the basis for manufacture or sale or promotion or any other purpose without the expressed written permission of TWR Lighting, Inc.

230V 116 WATT SIDELIGHT LAMPS



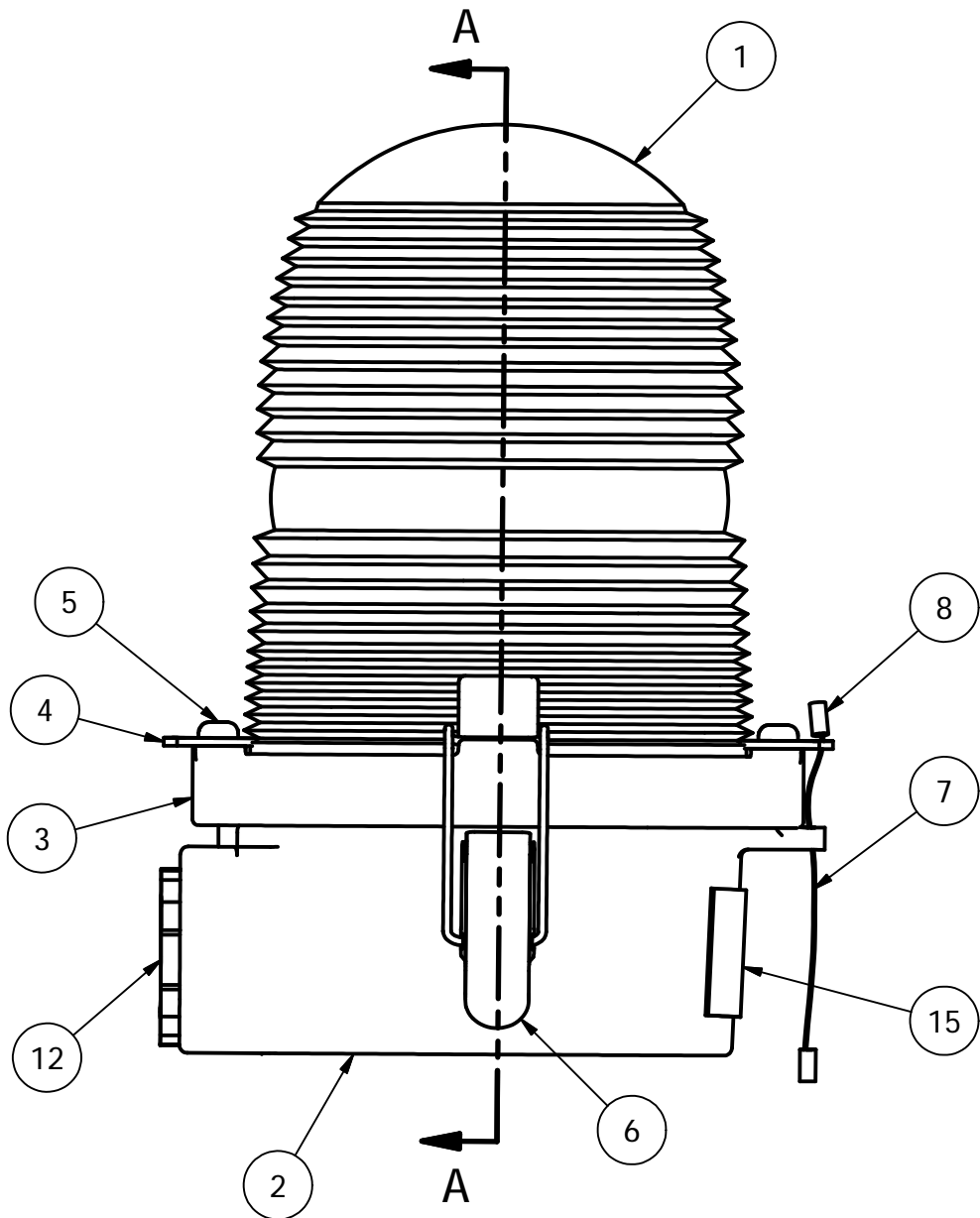


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	AP35222	RED SIDELIGHT GLASS
2	1	105C	SINGLE SIDELIGHT BODY
3	1	106C	LENS HOLDER RING
4	2	12V245	OL LENS CLIP
5	2	832X14PH	8-32 X 1/4" PH SS SLOT SCREW
6	2	HC255SS	SIDELIGHT LATCH
7	1	7X7SS	1/16 HOL 7X7 S.S. WIRE
8	2	A1A	STAKON CRIMP
9	1	OLG	OL GASKET
10	1	TWR19062	SIDELIGHT RECEPTACLE
11	4	18PRSS	1/8 X .40 SS POP RIVET
12	1	A314	3/4" CONDUIT LOCKNUT GALV.
*	2	104G	WHITE TEFLON WASHER
14	2	832X34PH	8-32 X 3/4" S.S. RH SLOT
15	1	100327	OL1 SERIAL NUMBER LABEL
~	1	116A21TS	116W-120V LAMP (TYP.)

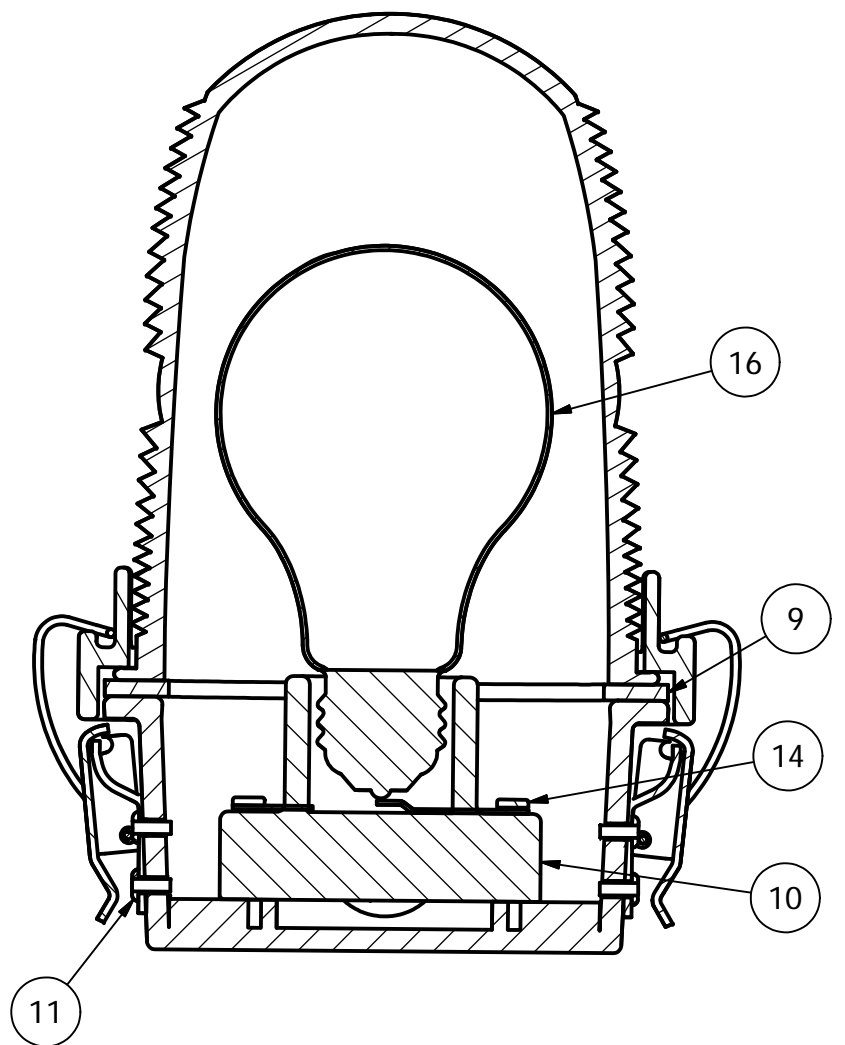
* = PART NOT SHOWN
 ~ = PART SOLD SEPARATELY

NOTE:

1. FAA APPROVED LIGHT USES THE 116A21TS LAMP.
 OTHER LAMPS ARE AVAILABLE TO MEET YOUR APPLICATION.

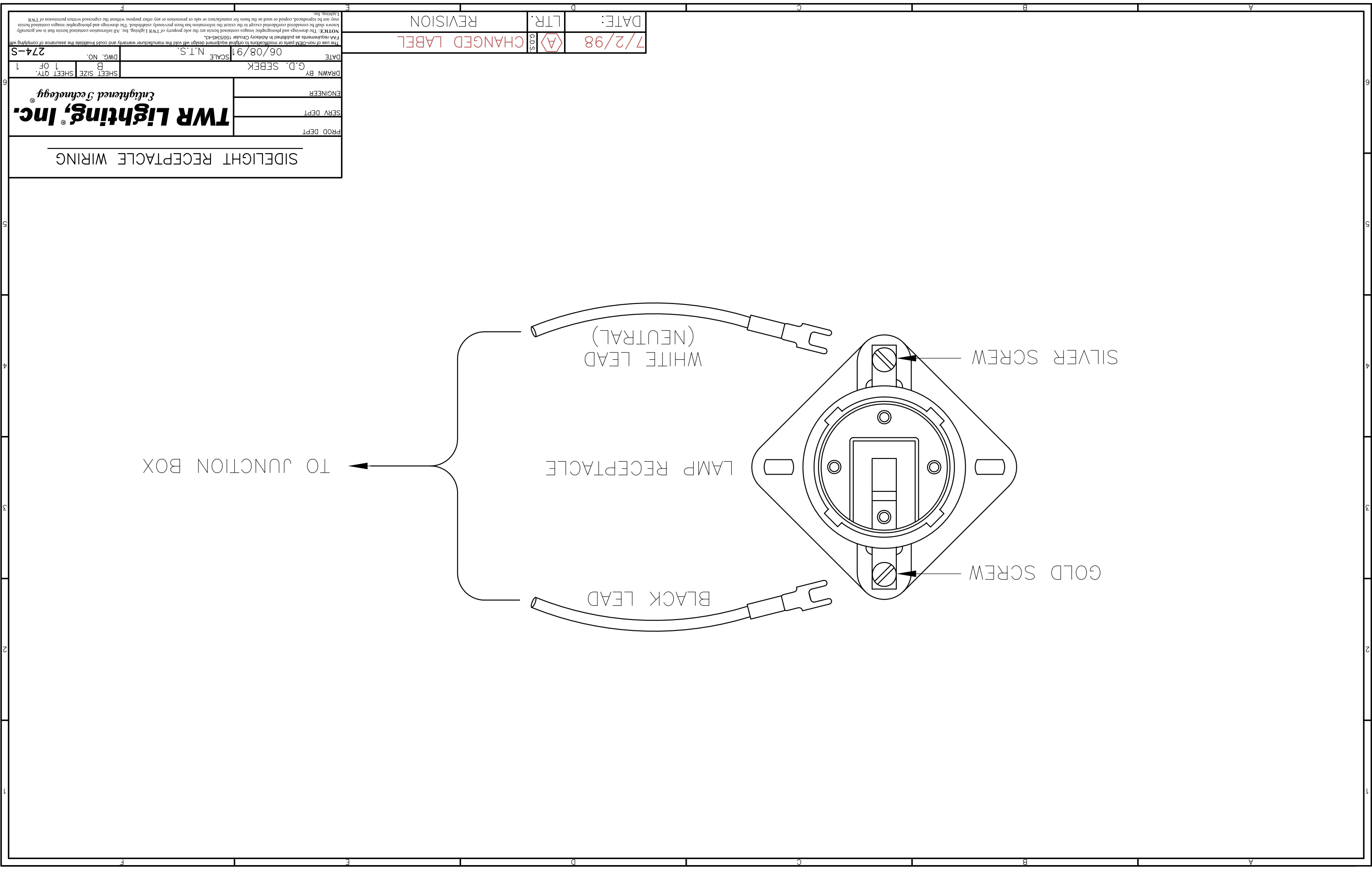


SECTION A-A



DRAWN	vhernandez	2/13/2012
CHECKED		
QA		
MFG		
APPROVED		
SIZE	B	DWG NO
SCALE	2/3	279-OL

TWR Lighting, Inc. <i>Enlightened Technology</i>		
TITLE 3/4" OL1 SIDE HUB ASSEMBLY DETAIL (PART#OL1)		
SIZE	DWG NO	REV
B	279-OL	C
SHEET 1 OF 1		



SIDELIGHT RECEPTACLE WIRING

PROD DEPT _____
 SERV DEPT _____
 ENGINEER _____

DRAWN BY G.D. SEBEK
 DATE 06/08/91 SCALE N.T.S.
 DWG. NO. _____
 SHEET SIZE B
 SHEET QTY. 1 OF 1

274-S
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 The use of non-CEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of compliance with FCC requirements as published in Advisory Circular 1501545-43.

DATE: 7/2/98
 LTR.  CHANGED LABEL
 REVISION

JUNCTION AND STRAIN RELIEF BOXES

PROD DEPT _____
SERV DEPT _____
ENGINEER _____

DRAWN BY G.D. SEBEK
SHEET SIZE B
SHEET QTY 1 OF 1
DWG. NO. 100089

DATE 07/26/93
SCALE N.T.S.

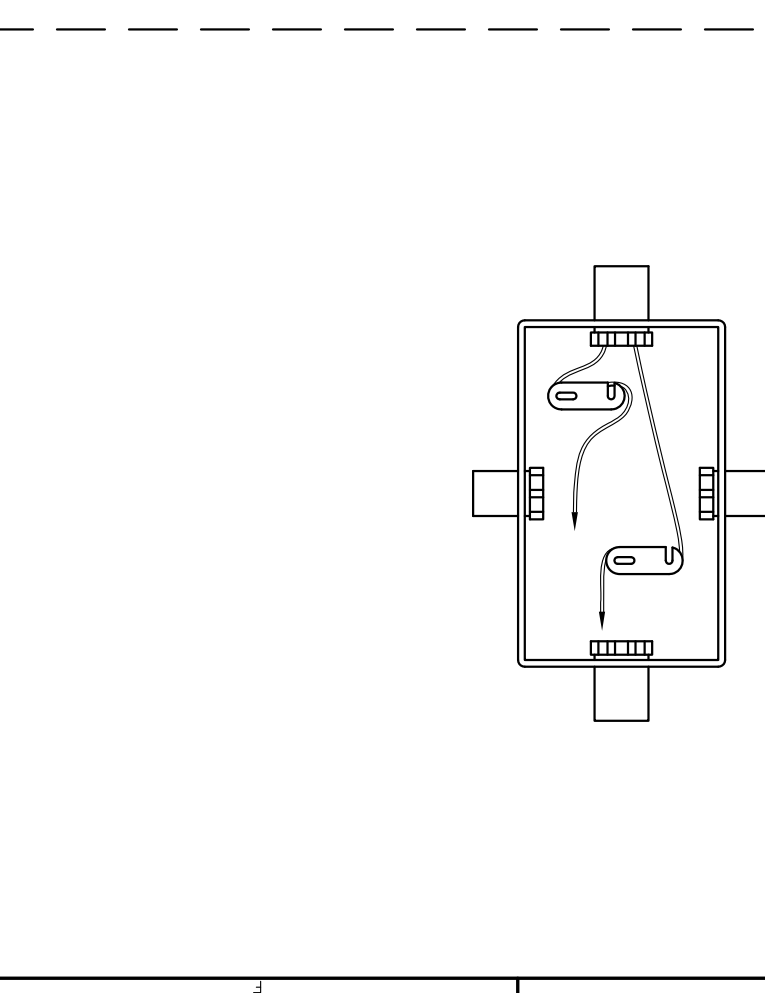
The use of non-union parts or materials to equal equipment design will void the manufacturer warranty and could invalidate the assurance of compliance with FAA requirements as published in Advisory Circular 150/5245-43.
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1) DRAWING ILLUSTRATES METHOD OF STRAIN RELIEVING WIRE. USE THIS METHOD ON ALL JUNCTION BOXES.

2) THE NATIONAL ELECTRICAL CODE-ARTICLE 300-19-B3 REQUIRES CONDUCTORS IN A VERTICAL CONDUIT BE SUPPORTED TO RELIEVE STRAIN ON TERMINAL BLOCK CONNECTIONS.

3) SKETCH ILLUSTRATES METHOD OF STRAIN RELIEVING A SINGLE CONDUCTOR. SEVERAL CONDUCTORS MAY BE GROUPED TOGETHER.

4) CONDUCTORS MAY BE MIXED BUT SHOULD NOT TAKE UP MORE THAN 40% OF CONDUIT'S INSIDE AREA.



DATE: 9/29/00
LTR. (A)
REVISION UPDATED NOTES

AWG	WIRE SIZE	MAX. NUMBER WIRES IN 3/4" CONDUIT	MAX. NUMBER WIRES IN 1" CONDUIT	WIRE AREA SQ. INCHES	WEIGHT PER 100 FEET
12 THHN	16	10	26	0.0117	2.50
10 THHN	10	17	17	0.0184	4.10
8 THHN	6	9	9	0.0373	6.70
6 THHN	4	7	7	0.0519	10.30
4 THHN	2	4	4	0.0845	16.20

USING THIS JUNCTION BOX METHOD SPACING IS 100 FEET MAXIMUM.

NOTES:

