## Enlightened Technology®

10810 W. LITTLE YORK RD. #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 HAVE QUESTIONS** OR **YOUR** CONTROLLER, **FOLLOWING** CONCERNING THE INFORMATION IS NECESSARY TO OBTAIN PROPER SERVICE AND PARTS.

MODEL #	AA0/WF
SERIAL #	
PURCHASE DATE	
PURCHASED FROM	

## Enlightened Technology®

## **AA0/WF CONTROLLER**

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## Enlightened Technology®

## **AA0/WF CONTROLLER**

#### **APPENDIX**

CHASSIS COMPONENT LAYOUT	. 1116-R	(REV B)
TOWER IGHTING KIT 21' TO 100'	259-01	(REV D)
TOWER LIGHTING KIT 101' TO 150'	259-02	(REV D)
TOWER LIGHTING KIT 0' TO 149'	1110-0	(REV C)
L-810 OL-1 DOUBLE OBSTRUCTION LIGHT ASSEMBLY DETAIL .	274-S	(REV A)
L-810 WIRING DETAIL	310	(REV B)
JUNCTION AND STRAIN RELIEF BOXES	. 100089	(REV A)

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### 1.0 GENERAL INFORMATION

The TWR Lighting<sup>®</sup>, Inc. (TWR) AA0/WF Controller is for towers up to 150' above ground level (AGL). A double obstruction light should be placed at the top of the tower.

The obstruction lights will flash 30 times per minute. The double obstruction light requires two (2) 116 watt 120V bulbs (116A21TS) when using the unit on 120V or (2) 116 watt 230V bulbs (116A21TS230V) when using the unit on 240V.

The photocell is the three (3) blade type. The photocell socket is mounted on the cast enclosure. Install the 6390-FAA photocell and twist to lock.

Power supplied to the controller is 120 – 240V AC.

The controller housing will meet NEMA 4X.

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### 2.0 <u>INSTALLATION INSTRUCTIONS</u>

#### 2.1 MOUNTING THE CONTROL HOUSING

(Refer to Drawings 259-0, 259-02, or 1110-0)

The power supply control housing should be located at the base of the structure. Mount the housing on the lower portion of the tower wiring conduit. Power wiring to the control cabinet should be in accordance with local methods and National Electrical Codes (NEC).

After mounting the control housing, insert the photocell and position it to the north. This can be accomplished by loosening the ½" conduit lock washer and rotating the photocell to the proper position. Once positioned, then retighten the ½" lock washer.

#### 2.2 **POWER WIRING**

- 2.2.1 Power wiring to the control housing should be in accordance with local methods and NEC.
- 2.2.2 The circuit breaker needs to be rated at 15 amps.
- 2.2.3 Connect the incoming 120 240VAC line to the terminal marked "L."
- 2.2.4 Connect the **NEUTRAL** wire to the terminal marked "N."

#### 2.3 OBSTRUCTION LIGHT WIRING

(Refer to Drawing 1116-R)

- 2.3.1 Connect the **BLACK** wire from the obstruction lights to the terminal marked "F."
- 2.3.2 Connect the **NEUTRAL** wire to the terminal marked "N."

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### 3.0 MAINTENANCE GUIDE

#### 3.1 RED OBSTRUCTION LIGHTING

The only required maintenance needed to be performed is replacement of the lamps in the L-864 and L-810 fixtures. Lamps should be replaced after being operated for not more than 75% of the rated life, or immediately upon failure as per FAA Advisory Circular 70/7460-1L. By following these instructions, maximum safety and performance can be achieved.

#### TOOLS REQUIRED: NONE

#### 3.1.1 L-864 LAMP REPLACEMENT

- 3.1.1.1 Loosen the one (1) wing nut on the latch pin so that it can recline.
- 3.1.1.2 Open the lens and allow it to tilt backward.
- 3.1.1.3 To remove each lamp, press down while rotating the lamp counter-clockwise 90°.
- 3.1.1.4 Install the new lamps by pressing down while rotating the lamp clockwise 90°.
- 3.1.1.5 Close the lens and let the latch pin drop in the recessed slot.
- 3.1.1.6 Tighten the wing nut snug, then \( \frac{1}{4} \) turn more.

#### 3.1.2 L-810 LAMP REPLACEMENT

- 3.1.2.1 Unclasp the two (2) latches and allow the bail to recline backward.
- 3.1.2.2 Lift the lens up and cover the lamp, allowing the lens to hang from the safety cable.
- 3.1.2.3 Unscrew the lamp counter-clockwise and remove.
- 3.1.2.4 Install the new lamp by screwing the lamp clockwise.
- 3.1.2.5 Reinstall the lens making sure it is seated properly on the base.
- 3.1.2.6 Reclasp the two (2) latches.

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### **AA0/WF CONTROLLER**

#### 3.2 **CONTROLLER**

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

#### 3.3 PHOTOCELL

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



### **AA0/WF CONTROLLER**

#### 4.0 MAJOR COMPONENTS PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240VAC PHOTOCELL
1	PF-250	120 – 240VAC SOLID STATE FLASHER (M1)



### **AA0/WF CONTROLLER**

#### 5.0 SUGGESTED SPARE PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA	120 – 240VAC PHOTOCELL
1	PF-250	120 – 240 VAC SOLID STATE FLASHER (M1)

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### **Warranty & Return Policy**

TWR Lighting<sup>®</sup>, Inc. ("TWR<sup>®</sup>") 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<sup>®</sup>, Inc. ("TWR<sup>®</sup>") warrants its "LED Product" against defects in design, material and workmanship for a period of five (5) years from the date of shipment. TWR<sup>®</sup>, at its sole option, will, itself, or through others, repair, replace or refund the purchase price paid for "LED Product" that TWR<sup>®</sup> 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:

- x Improper Installation or Operation
- x Misuse
- x Abuse
- x Unauthorized or Improper Repair or Alteration
- x Accident or Negligence in Use, Storage, Transportation, or Handling
- x Any Acts of God or Nature
- x 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.

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### **Warranty & Return Policy**

(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:

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

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### Warranty & Return Policy

(continued)

<u>RMA Replacements</u> – 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.

- x Product(s) that is deemed defective and/or unrepairable and covered under warranty a credit will be issued to the customer's account.
- x 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.
- x 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.

<u>Credits</u> – 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.

## Enlightened Technology®

### **AA0/WF CONTROLLER**

#### Warranty & Return Policy

(continued)

<u>Freight</u> – All warranty replacement part(s) will be shipped via ground delivery and paid for by TWR<sup>®</sup>. 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, ALL OTHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL. CONSEQUENTIAL DAMAGES. INCLUDING ALL PERSONAL **INJURY** 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 TWR® PRODUCT(S) FOR ANY PARTICULAR PURPOSE. **EXPRESSLY** DISCLAIMS ALL OTHER WARRANTIES.



### **AA0/WF 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

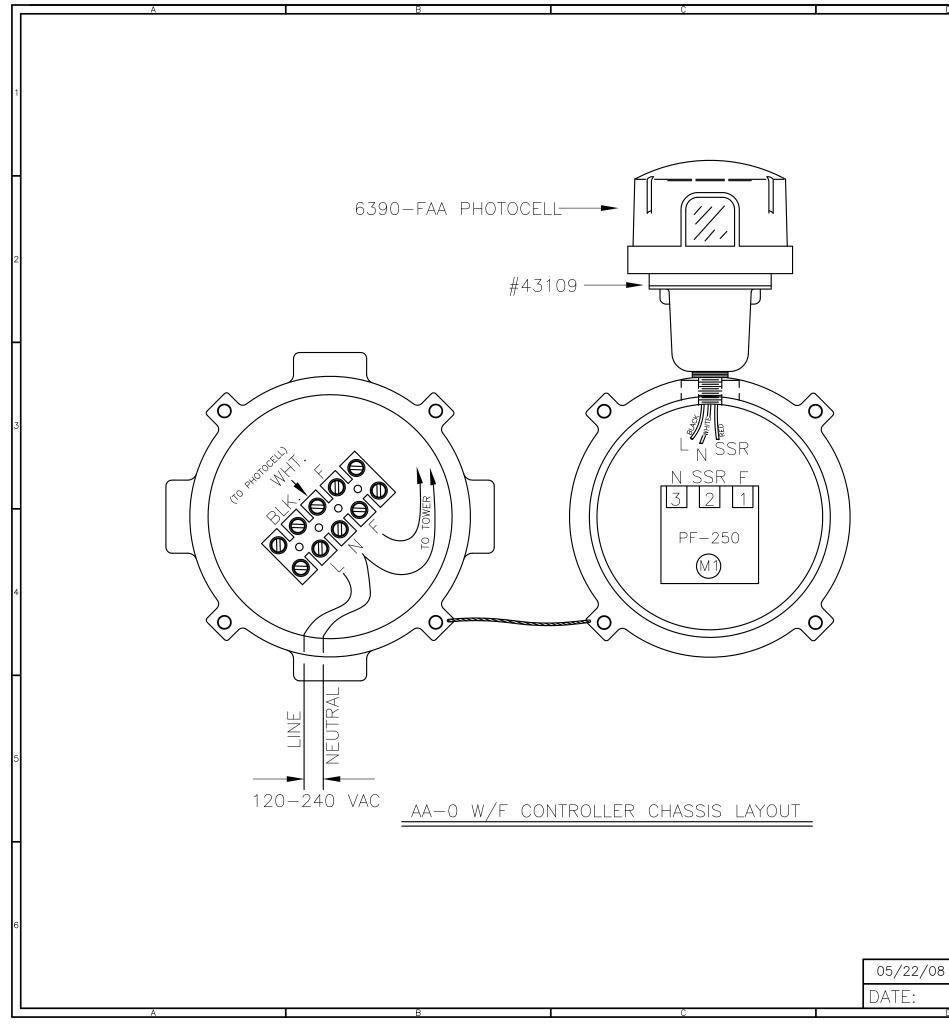


## **AA0/WF CONTROLLER**

#### RETURN MERCHANDISE AUTHORIZATION (RMA) FORM

RMA#:DATE:					
CUSTOMER:					
CONTACT:					
ITEM DESCRIPTION (PART NO.):_					
MODEL NO.:					
ORIGINAL TWR INVOICE NO.:	DATED:				
DESCRIPTION OF PROBLEM:					
SIGNED:	DATE NEEDED:				
RETURN ADDRESS:					

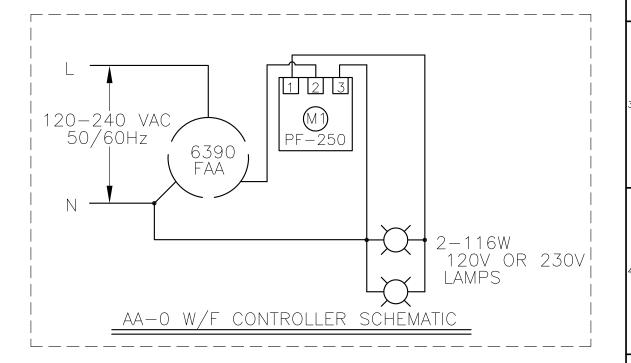
PLEASE RETURN PRODUCT TO: 10810 W. LITTLE YORK RD. #130 HOUSTON, TX 77041-4051



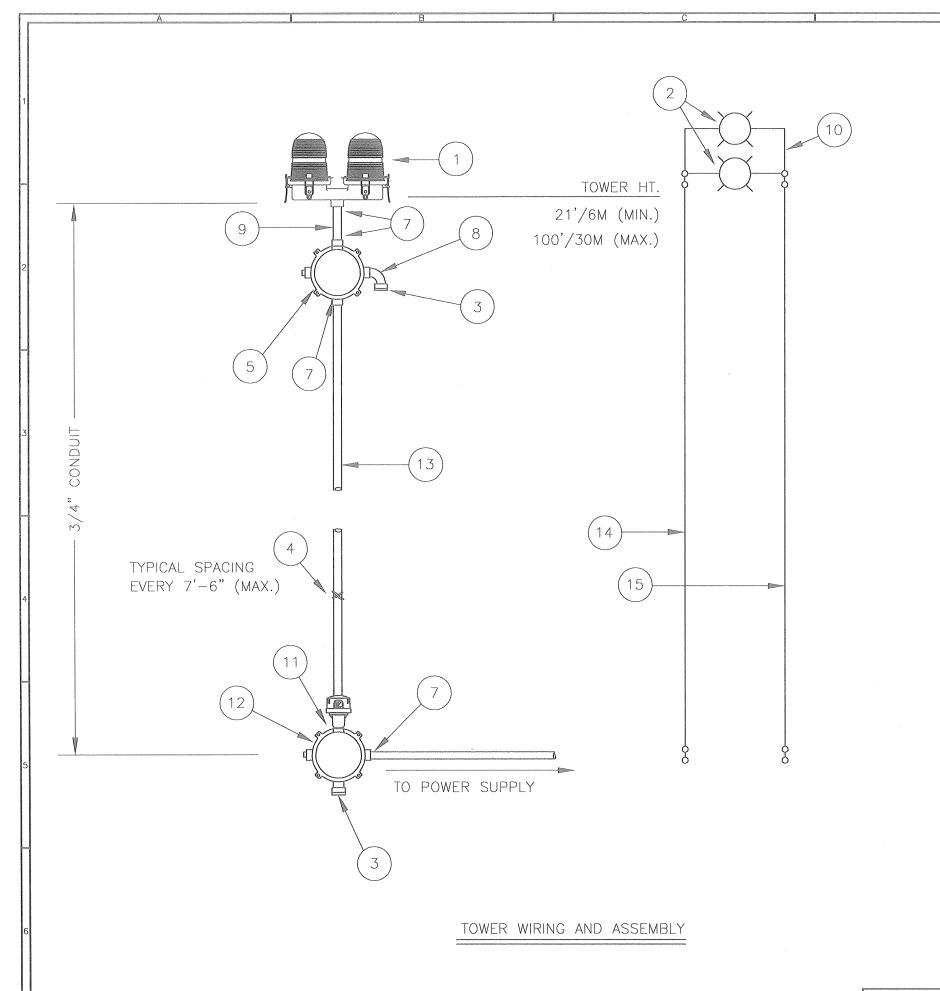
### NOTES:

REVISION

- 1) PLUG 6390-FAA PHOTOCELL INTO (#43109) TWIST LOCK RECEPTACLE AND TWIST TO LOCK.
- 2) WHEN REPLACING MODULE USE HEAT SINK COMPOUND BETWEEN MODULE AND ALUMINUM PLATE.



		<u> </u>	A-0 W/F CON	TROLLER	
		_	(WITH FLAS	HER)	
		PROD DEPT	TIMBLE		<b>I</b>
		SERV DEPT	—∣TWR Liį	gnting,	inc.
		ENGINEER	En	lightened Techn	ology
		DRAWN BY G.D. SEE	<b></b> 3EK	SHEET SIZE SH B	EET QTY. 1 OF 1
\D\ \si_\	VOLTAGE MAI DUOTOGE	DATE 12/2	27/93 SCALE N.T.S. or modifications to original equipment design	DWG. NO.	1116-R
	VOLTAGE,M1,PHOTOCE		or modifications to original equipment design complying with FAA requirements as published uphic images contained herein are the sole property of TWR L	d in Advisory Circular 150/53	45 <del>-</del> 43.
LTR.	REVISION	known shall be considered confidential	Il except to the extent the information has been previously est il as the basis for manufacture or sale or promotion or any other	ablished. The drawings and photograph	ic images contained herein



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ITEM NO.	QTY.	TWR PART NO.	DESCRIPTION
1	1	OL2	DOUBLE OBSTRUCTION LIGHT
. 2	2	116A21TS(120V) 116A21TS230V	116 WATT 120/230 VOLT LAMP
3	2	5012902	BREATHER
4	1	SS10012	WRAPLOCK
5	1	JB5	3/4" JUNCTION BOX
6	1	PIPDOP	4 oz. PIPE DOPE
7	5	A314	3/4" CONDUIT LOCKNUTS
8	2	EL3490	3/4"90°SHORT ELBOW
9	1	N34T4	3/4" X 4" CONDUIT NIPPLE
10	1	OL2PIGTAIL	18" OL2 PIGTAIL
11	2	UNY205	3/4" UNION
12	1	AAO	AAO NON-ALARMED CONTROLLER

ITEM NUMBERS #13-#15 ARE NOT INCLUDED IN THE KIT BUT ARE REQUIRED FOR INSTALLATION.

13 -	 CONDUIT34	3/4	-" CON	DUIT	(TWR	HT. +	30'/9M)	
14 -	14THHNWHT	#14	THHN	WHT.	WIRE	(TWR	HT.+40'/12M)	)
15 -	14THHNBLK	#14	THHN	BLK.	WIRE	(TWR	HT.+40'/12M)	)

\* = ITEM NOT SHOWN

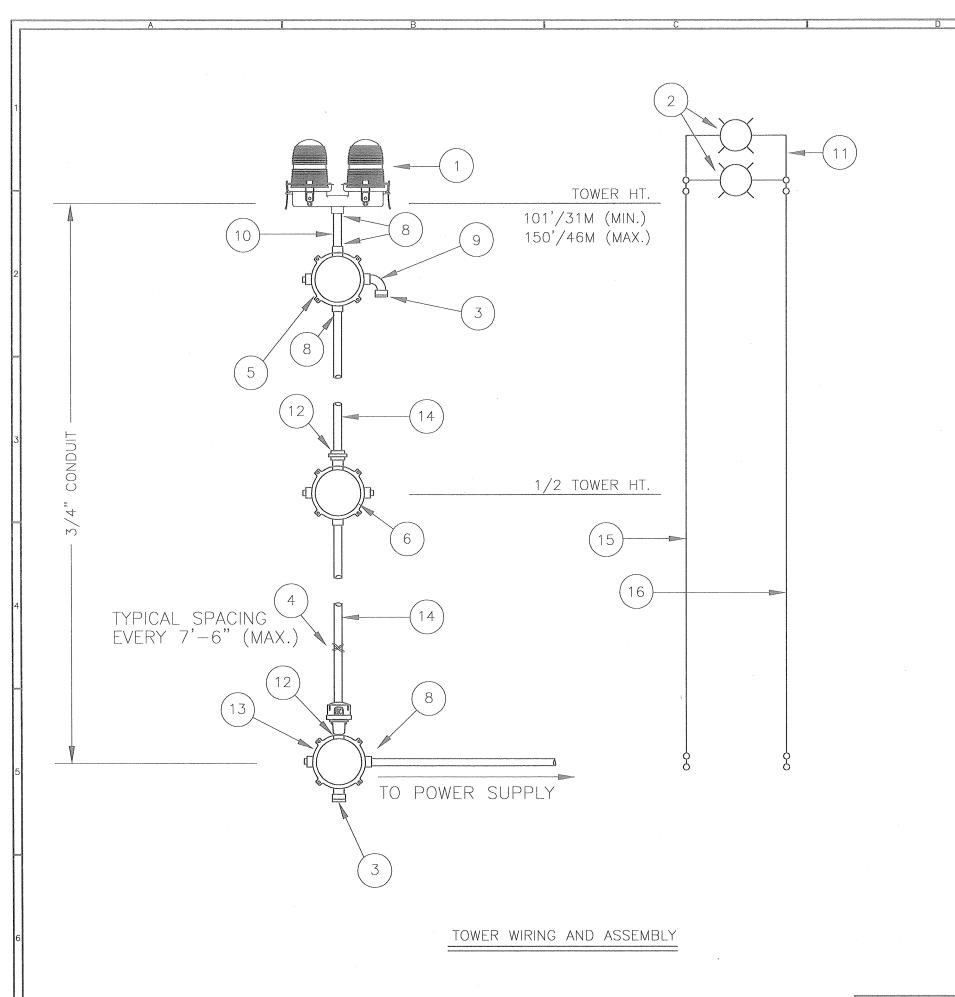
#### NOTES:

- 1) CONDUIT SIZE BASED ON USING TYPE THHN WIRE.
- 2) USE RIGID GALVANIZED STEEL CONDUIT.
- 3) BREATHERS ALLOW FOR CIRCULATION OF AIR TO PREVENT CONDENSATION.

LK1AO LIGHTING KIT W/NON-ALARMED CONTROLLER (TOWERS 21'/6M TO 100'/30M)

TWR Lighting," Inc..
Enlightened Technology. E.A.SALAZAR

12/17/15(D) NPUT 120-240VAC



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		#10/00 to wind College	
ITEM NO.	QTY.	TWR PART NO.	DESCRIPTION
1	1	OL2	DOUBLE OBSTRUCTION LIGHT
2	2	116A21TS(120V) 116A21TS230V	116 WATT 120/230 VOLT LAMP
3	2	5012902	BREATHER
4	1	SS10012	WRAPLOCK
5	1	JB5	3/4" JUNCTION BOX
6	1	JB0°	3/4" STRAIN RELIEF BOX
7	1	PIPDOP	4 oz. PIPE DOPE
8	7	A314	3/4" CONDUIT LOCKNUTS
9	2	EL3490	3/4"90°SHORT ELBOW
10	1	N34T4	3/4" X 4" CONDUIT NIPPLE
11	1	OL2PIGTAIL	18" OL2 PIGTAIL
12	3	UNY205	3/4" UNION
13	1	AAO	AAO NON-ALARMED CONTROLLER

ITEM NUMBERS #14-#16 ARE <u>NOT</u> INCLUDED IN THE KIT BUT ARE REQUIRED FOR INSTALLATION.

14	_	CONDUIT34	3/4" CONDUIT (TWR HT. + 30'/9M)
15	_	14THHNWHT	#14 THHN WHT. WIRE (TWR HT.+40'/12M)
16		14THHNBLK	#14 THHN BLK. WIRE (TWR HT.+40'/12M)

\* = ITEM NOT SHOWN

#### NOTES:

- 1) CONDUIT SIZE BASED ON USING TYPE THHN WIRE.
- 2) USE RIGID GALVANIZED STEEL CONDUIT.
- 3) BREATHERS ALLOW FOR CIRCULATION OF AIR TO PREVENT CONDENSATION.

LK2AO LIGHTING KIT W/NON—ALARMED

CONTROLLER (TOWERS 101'/31M TO 150'/46M)

PROD DEPT

SERV DEPT

ENGINEER

DRAWN BY

E.A.SALAZAR

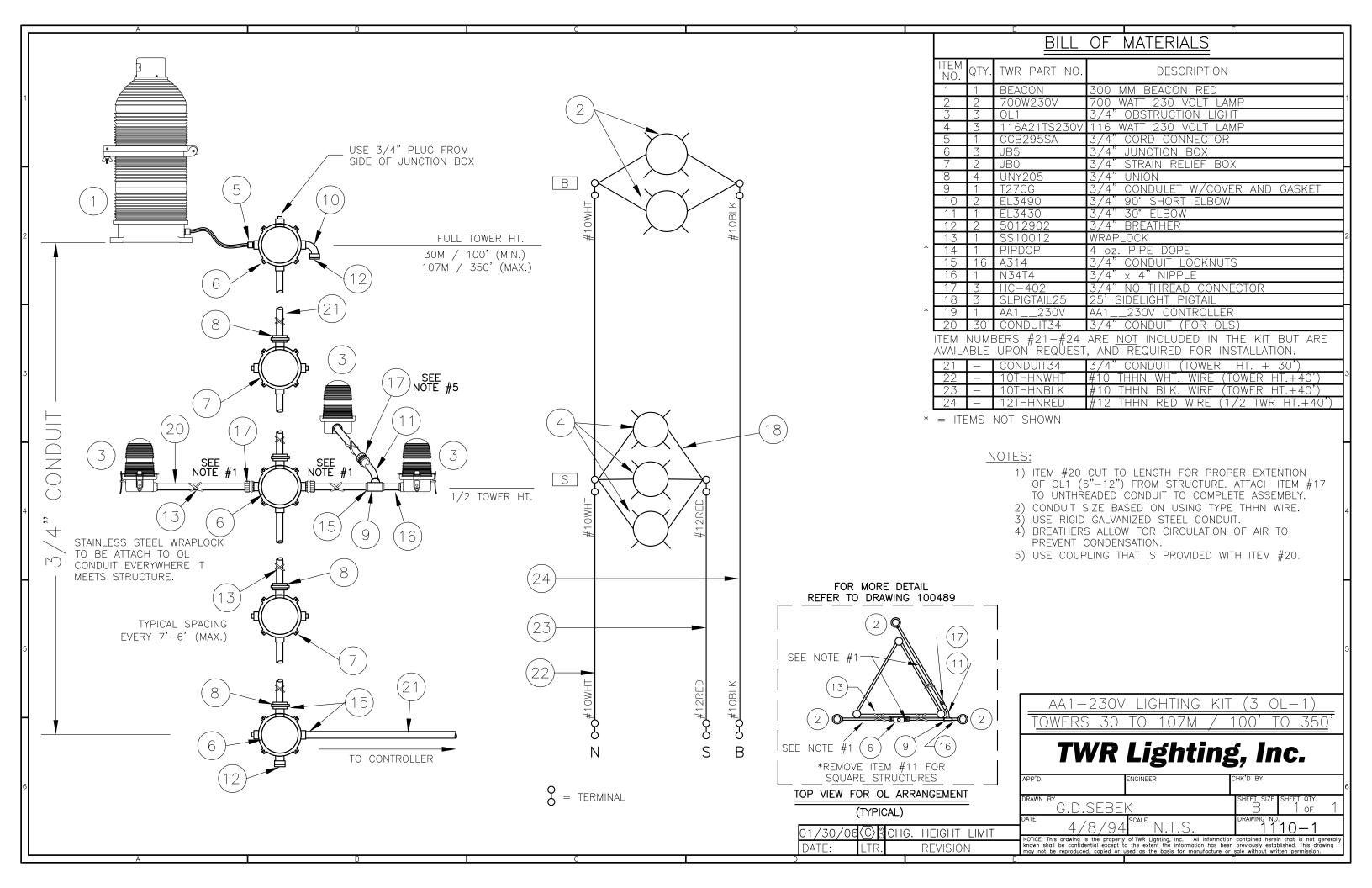
DATE

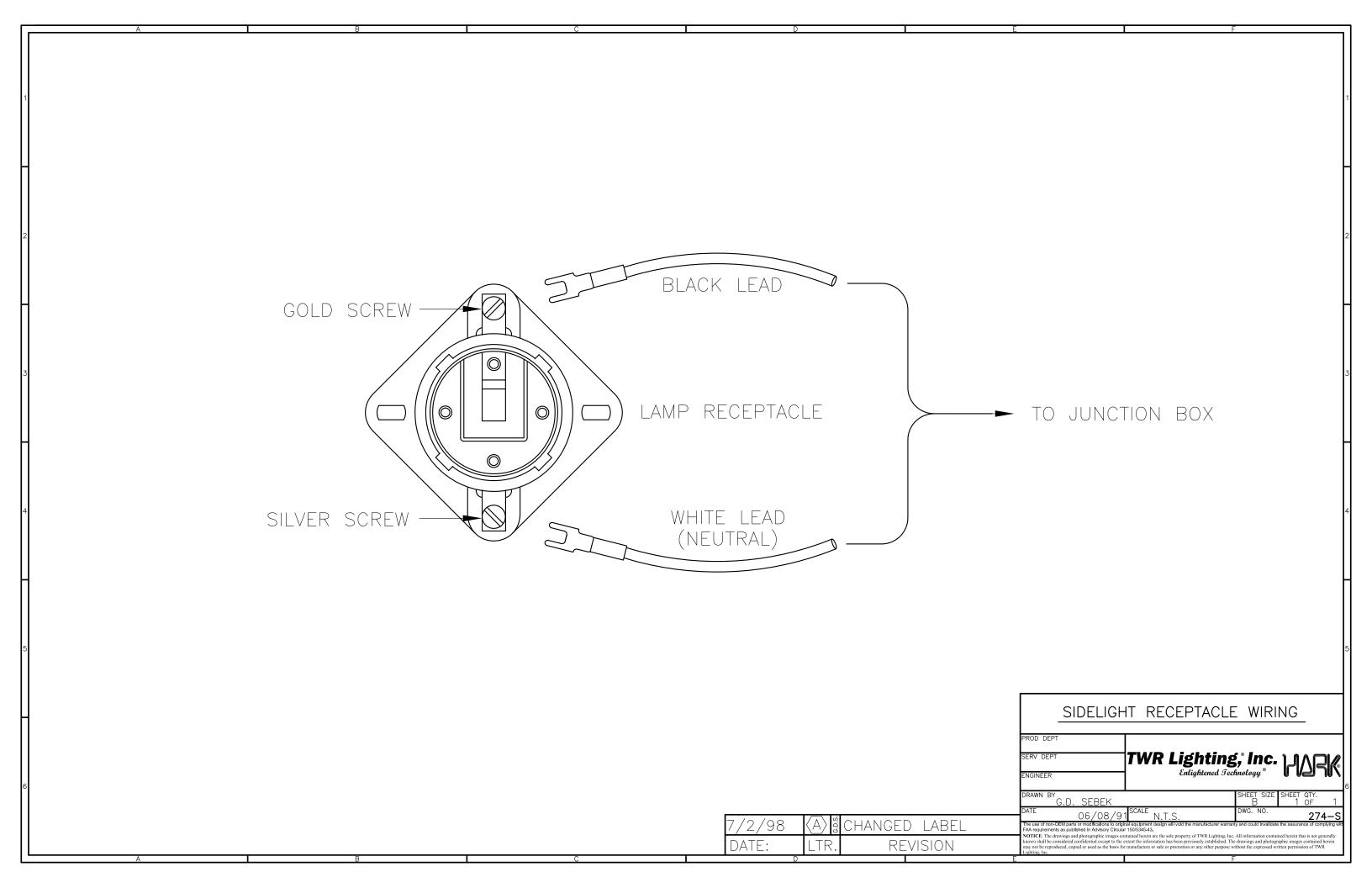
1/5/93 SCALE

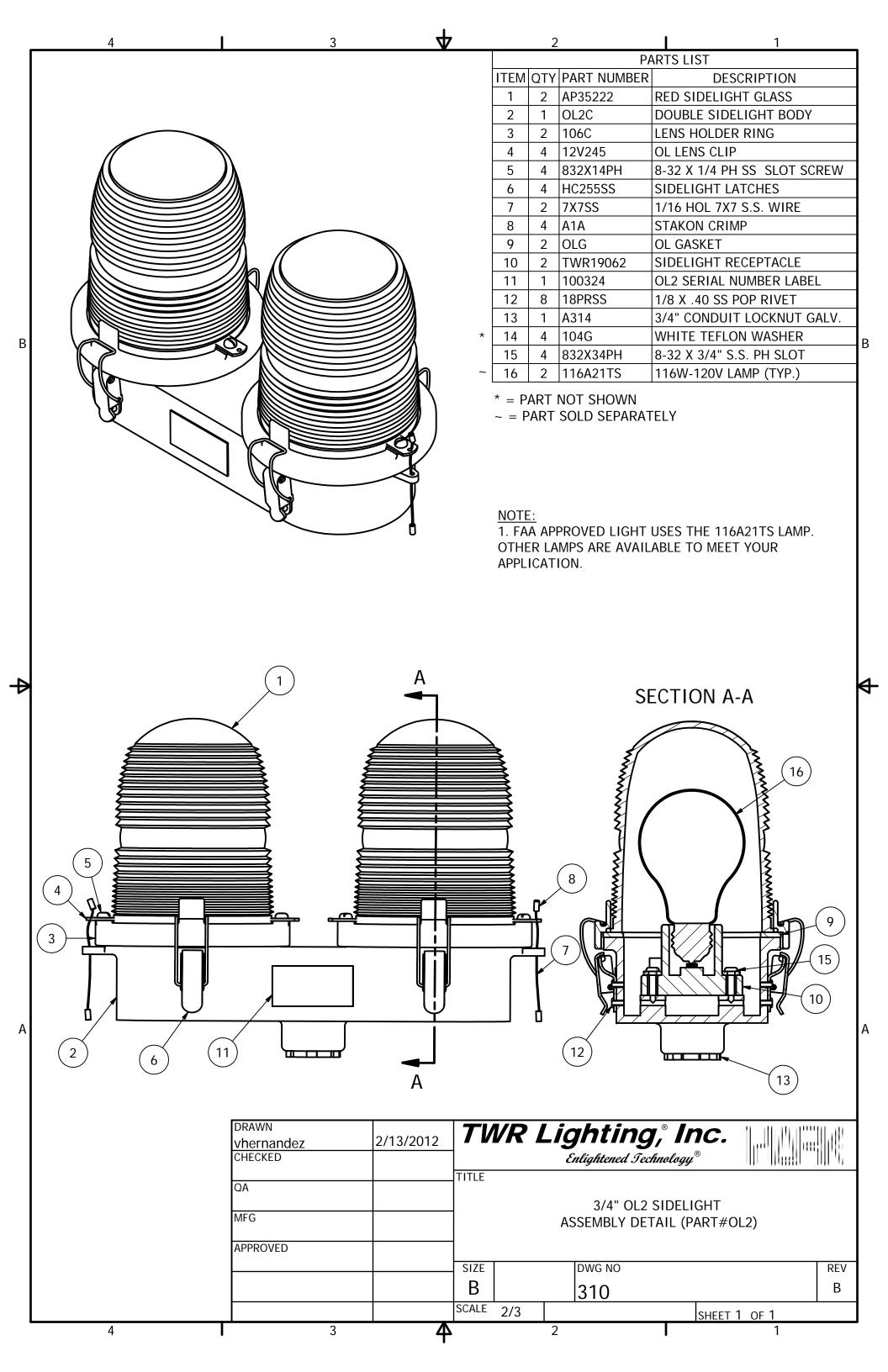
N.T.S.

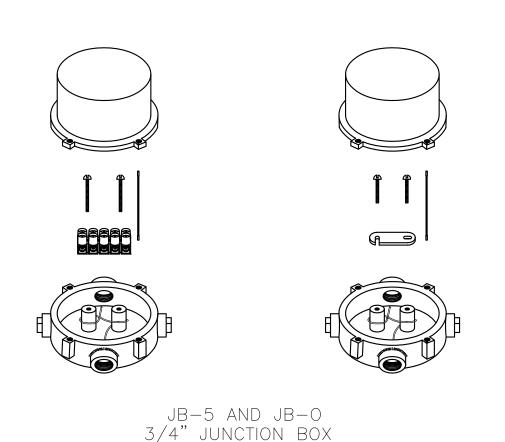
The use of non-OEM parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of complying will FAA requirements as published in Advisory Circuit 1903634-61.

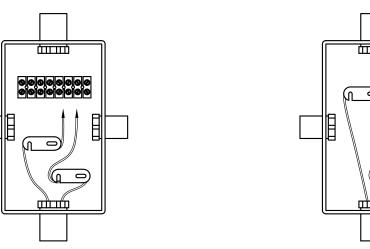
12/17/15 (D) INPUT 120-240VAC

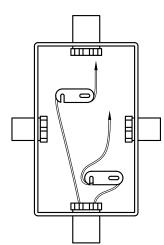












JB-8 AND JB-8SR 1" JUNCTION BOX

#### USING THIS JUNCTION BOX METHOD SPACING IS 100 FEET MAXIMUM.

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 10 THHN	16 10	26 17	0.0117 0.0184	2.50 4.10
8 THHN	6	9	0.0373	6.70
6 THHN	4	7	0.0519	10.30
4 THHN	2	4	0.0845	16.20

## NOTES:

- 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.

			JUNCTION AND STRAIN RELIEF BOXES				
			PROD DEPT SERV DEPT ENGINEER	TWR	<b>Lighti</b> Enlightened	ing," Inc.	
			drawn by G.D. SEBE		SHEE	T SIZE SHEET QTY. B 1 OF 1	
			DATE 07/2	6/93 SCALE N.T.S.	DWG.	NO. 100089	
9/29/00 (	A) : UPDATEC	NOTES	invalidate the assurance of co NOTICE: The drawings and photographic	mplying with FAA requirements images contained herein are the sole prop	as published in Advisory Ci perty of TWR Lighting, Inc. All infor		
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