

TWR Lighting, Inc. **HARK**[®]

Enlightened Technology[®]

4300 WINDFERN RD #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 # AA3MDF-230V

SERIAL # _____

PURCHASE DATE _____

PURCHASED FROM _____

TWR Lighting, Inc. **HARK**

Enlightened Technology

AA3MDF-230V CONTROLLER

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TWR Lighting, Inc. HARK[®]

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AA3MDF-230V CONTROLLER

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TWR Lighting, Inc. HARK[®]

Enlightened Technology[®]

AA3MDF-230V CONTROLLER

1.0 GENERAL INFORMATION

The TWR Lighting[®], Inc. (TWR[®]) AA3MDF-230V Controller is for A2 lighting of towers 351' to 700' above ground level (AGL) in accordance with the FAA Advisory Circular 70/7460-1K. One (1) beacon should be placed at the top, and two (2) beacons should be placed at the ½ intervals with respect to overall tower height. Obstruction lights should be placed at the ¾ and ¼ intervals.

The flash rate of the beacons is 30 per minute. The beacons flash synchronized to one another. The 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.

Each beacon requires two (2) 700W 230V bulbs. TWR[®] recommends that you use only these bulbs. Each sidelight requires one (1) 116W 230V bulb (700W 230V and 116A21TS230V).

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

Power supplied to the controller shall be 230V AC single phase.

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

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AA3MDF-230V CONTROLLER

2.0 INSTALLATION INSTRUCTIONS

2.1 MOUNTING THE CONTROL CABINET

(Refer to Drawing 1240-R)

- 2.1.1 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 1240-R. Power wiring to the control cabinet should be in accordance with local methods and national electrical codes (NEC).
- 2.1.2 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 “N.” The black wire is connected to the socket terminal marked “Li,” and the red wire is connected to the socket terminal marked “Lo.” As above, the photocell should be positioned so that it does not “see” ambient light, which would prevent it from switching to the nightmode.
- 2.1.3 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 2.1.1.
- 2.1.4 The wiring from the photocell, the service breaker, the red incandescent beacon, 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 terminal strip and circuit breakers located at the bottom of the chassis. These connections are made as follows:

2.2 EXTERNAL PHOTOCELL WIRING

(Refer to Drawing 1240-R)

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

AA3MDF-230V CONTROLLER

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

2.3 POWER WIRING

(Refer to Drawing 1240-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 a two (2) pole common trip rated at 25 amps.

2.3.3 Connect incoming 230V AC to terminal block TB1, marked “L.”

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

2.3.5 Connect the AC ground to the aluminum mounting plate.

2.4 RED BEACON AND SIDELIGHT WIRING

(Refer to Drawings 1240-R, 261-31, and 261-22)

2.4.1 Connect the **BLACK** wire from beacon #1 to circuit breaker marked “B1.”

2.4.2 Connect the first **BLUE** wire from beacon #2 to circuit breaker marked “B2.”

2.4.3 Connect the second **BLUE** wire from beacon #3 to circuit breaker marked “B3.”

2.4.4 Connect the **RED** wire from sidelight group #1 to circuit breaker marked “S.”

2.4.5 Connect the **YELLOW** wire from sidelight group #2 to circuit breaker marked “S.”

2.4.6 Connect the **NEUTRAL** wire(s) to one (1) of the terminals on TB1, marked “N.”

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2.5 POWER SUPPLY

230V AC enters the controller from the circuit breaker panel. Line “L” sits at the PRD waiting to be switched. When the 6390-FAA photocell is activated, Line “L” energizes the coil of the PRD relay. This also can be accomplished by using the photocell by-pass switch (SW1).

2.6 SIDELIGHTS

LD4 is sent to the “S” circuit breaker, which powers both sidelight circuits.

2.7 BEACONS

Line LD1 is sent to the motorized flasher. Lines LD1, LD2, and LD3 are sent to the three (3) sets of contacts on the 33-S4F-220 motorized flasher. When the controller is turned on, these contacts will deliver the voltage to circuit breakers B1, B2, and B3, which will operate the beacons at 30 flashes per minute.

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3.0 THEORY OF OPERATION

3.1 BEACON NOT FLASHING

Check for pulsing 230V AC at the three (3) beacon circuit breakers. If any of the circuit breakers are tripped, there may have been a surge or could be a short in the tower wiring. This can be checked by looking for a short between each beacon terminal and ground. If OK, and 230V AC is not present, check the 33-S4F-220 motorized flasher to see if there is voltage. If OK, the coil is probably open. The motorized flasher will need to be replaced. If everything appears to be correct, but light still does not work, re-lamp that beacon.

3.2 SIDELIGHT OUT

Check for constant 230V AC at “S” circuit breaker. If blown, check for a short in the tower wiring. If not, and voltage is present, re-lamp that sidelight.

3.3 CONTROLLER ALWAYS “ON”

If lights stay on in the daytime, pull photocell out of the socket. If lights go out, replace the photocell. If not, check for welded contacts on the PRD. Replace if necessary.

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4.0 MAJOR COMPONENTS PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	VJ1412HWPL2	Controller Enclosure
1	6390-FAA (This replaces the 102FAA photocell)	120-240V Photocell
1	33-S4F-220	Motorized Flasher
1	CR353AC4AB1	Mechanical Load Contactor 230V AC (PRD)
4	S261-D10	10 amp Circuit Breaker (B1-B3, S)
1	V275LA20A	Metal Oxide Varistor 230V AC (MOV)
8	8WA1204	Terminal Blocks (TB1 and TB2)
2	8WA1808	End Stop
1	SSPIGTAIL	20' Photocell Pigtail
1	STJ01002	SW1 Switch

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AA3MDF-230V CONTROLLER

5.0 SUGGESTED SPARE PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	6390-FAA (This replaces the 102FAA photocell)	120-240V Photocell
2	S261-D10	10 amp Circuit Breaker (B1-B3, S)

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AA3MDF-230V 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:

- 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.

TWR Lighting, Inc. **MARK**[®]

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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.

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:

- x The contact name and phone number of the tower owner
- 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., 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).

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Warranty & Return Policy (continued)

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.

- 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.

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.

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.

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Warranty & Return Policy (continued)

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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AA3MDF-230V 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: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

TWR Lighting, Inc. HARK[®]

Enlightened Technology[®]

AA3MDF-230V 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: 4300 WINDFERN RD #100 HOUSTON TX 77041-8943

AA3-MDF CONTROLLER
(230V 50/60HZ)

PROD DEPT

SERV DEPT

ENGINEER

J.L. BUSTAMANTE

SCALE N.T.S.

DATE 03/19/2007

DWG. NO. 1240-R

1 OF 1 SHEET SIZE B

1 OF 1 SHEET QTY.

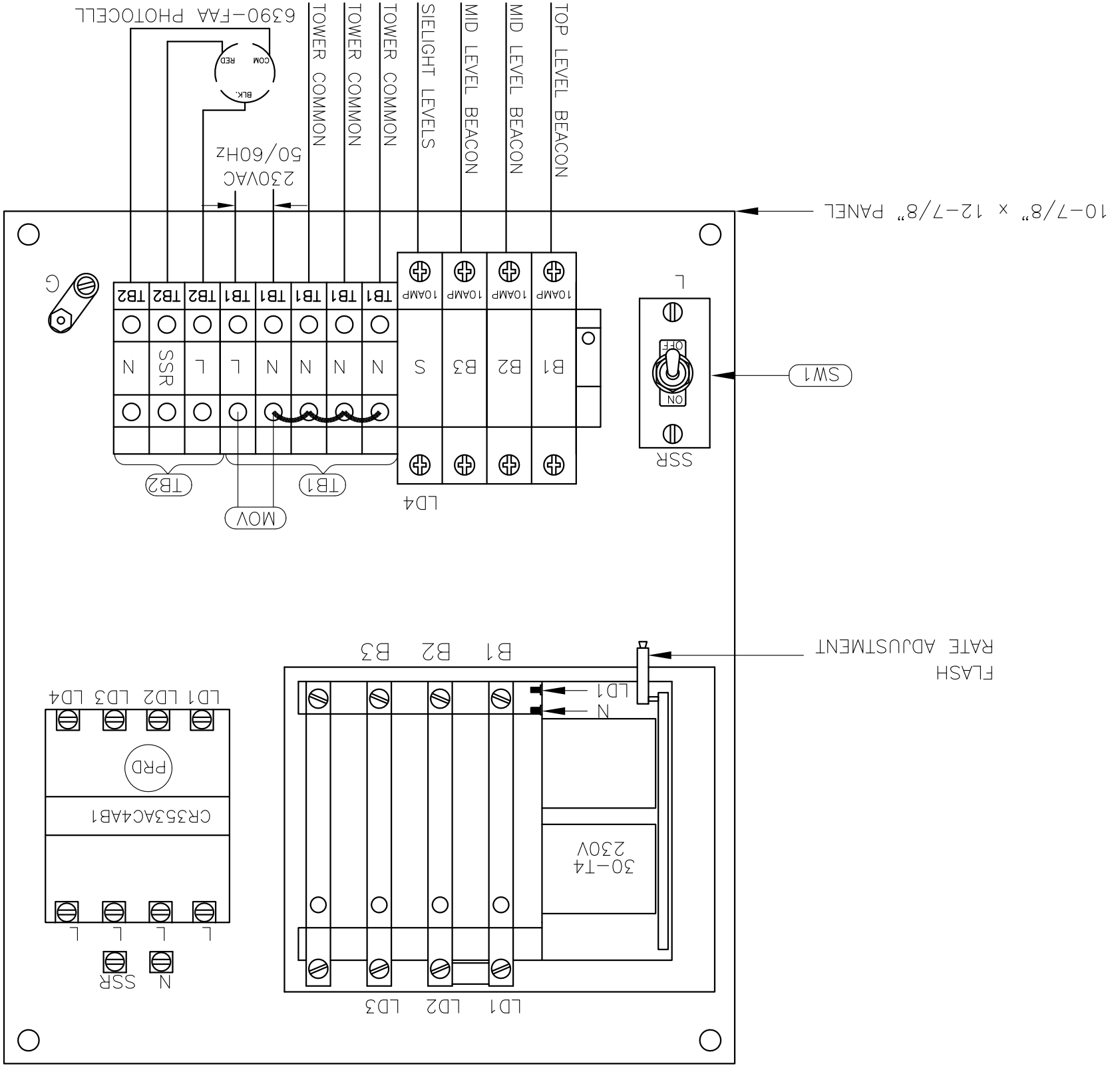
1240-R

FAA requirements as published in Advisory Circular 150/545-43.

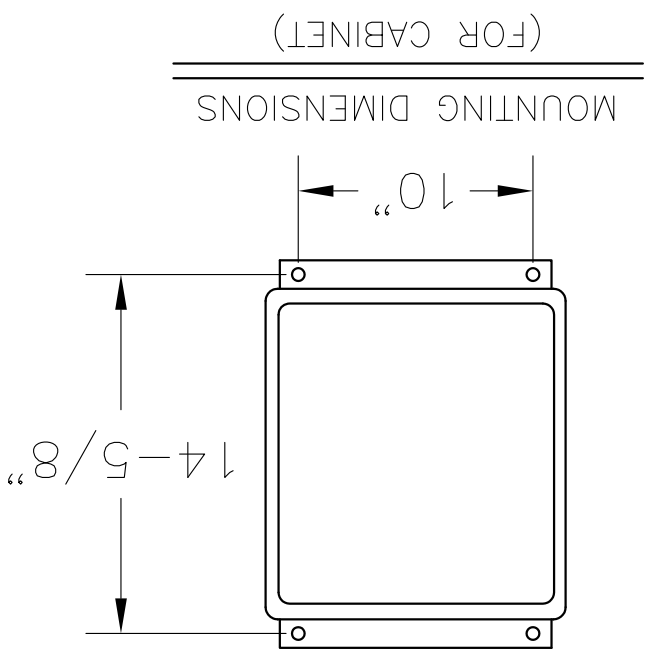
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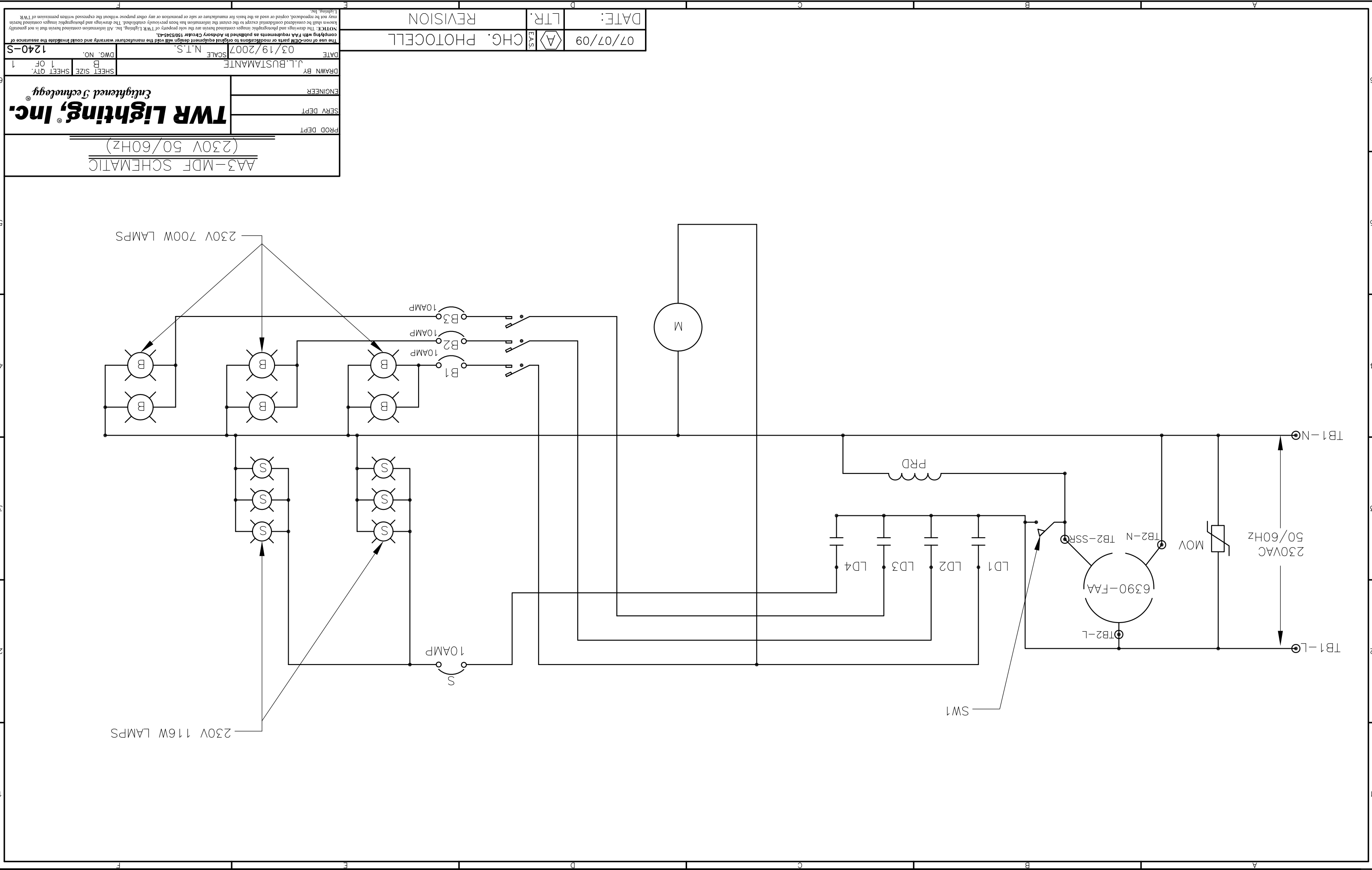
07/07/09 DATE: LTR. REVISION

CHG. PHOTOCELL



- NOTES:
1. PLUG 6390-FAA PHOTOCELL INTO 43109 TWIST LOCK RECEPTACLE AND TWIST TO LOCK.
 2. WIRES ARE CONNECTED LETTER TO LETTER. (EXAMPLE) N TO N TO N.





AA3-MDF SCHEMATIC
(230V 50/60Hz)

PRD DEPT
SERV DEPT
ENGINEER

DRAWN BY J.L.BUSTAMANTE
SHEET SIZE B
SHEET 1 OF 1

DATE 03/19/2007
SCALE N.T.S.
DWG. NO. 1240-S

DATE: 07/07/09
L.T.R. CHG. PHOTOCELL

REVISION

NOTICE: The drawings and photographs 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 photographs contained herein comply with FAA requirements as published in Advisory Circular 150/345-43.

The use of non-FAA parts or modifications to original equipment design will void the manufacturer warranty and could invalidate the assurance of Lighting, Inc.

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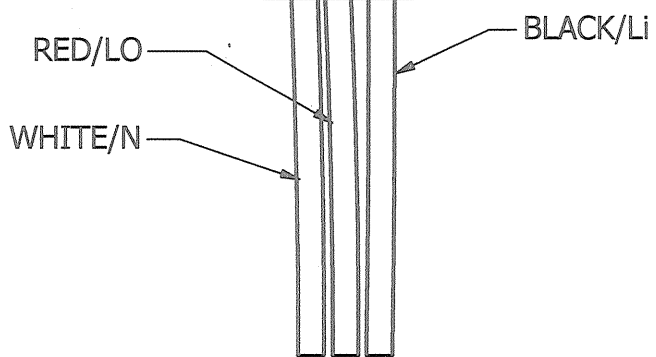
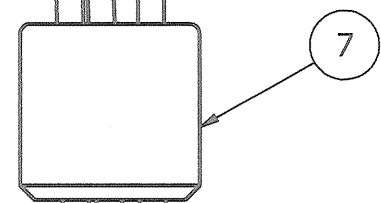
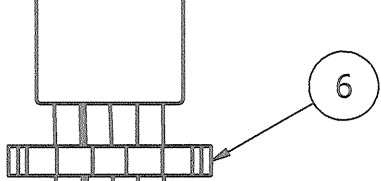
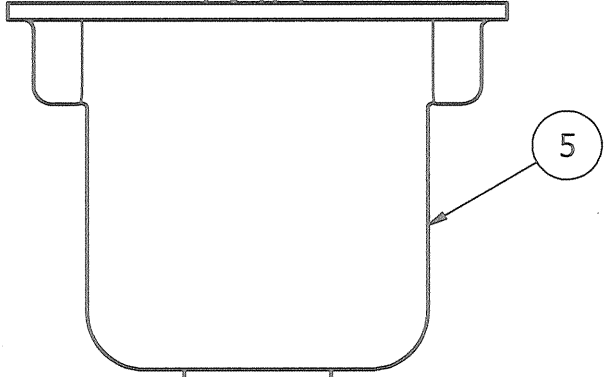
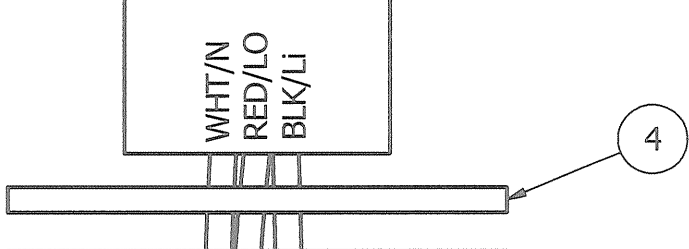
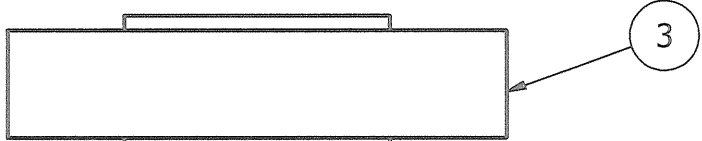
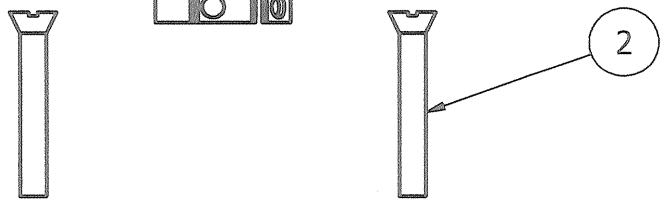
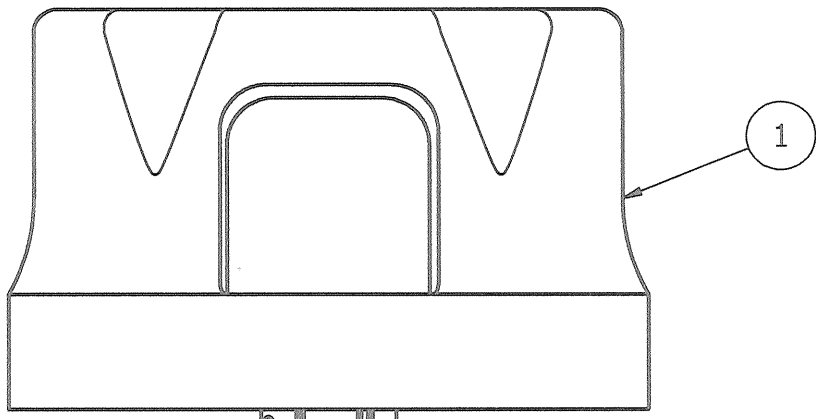
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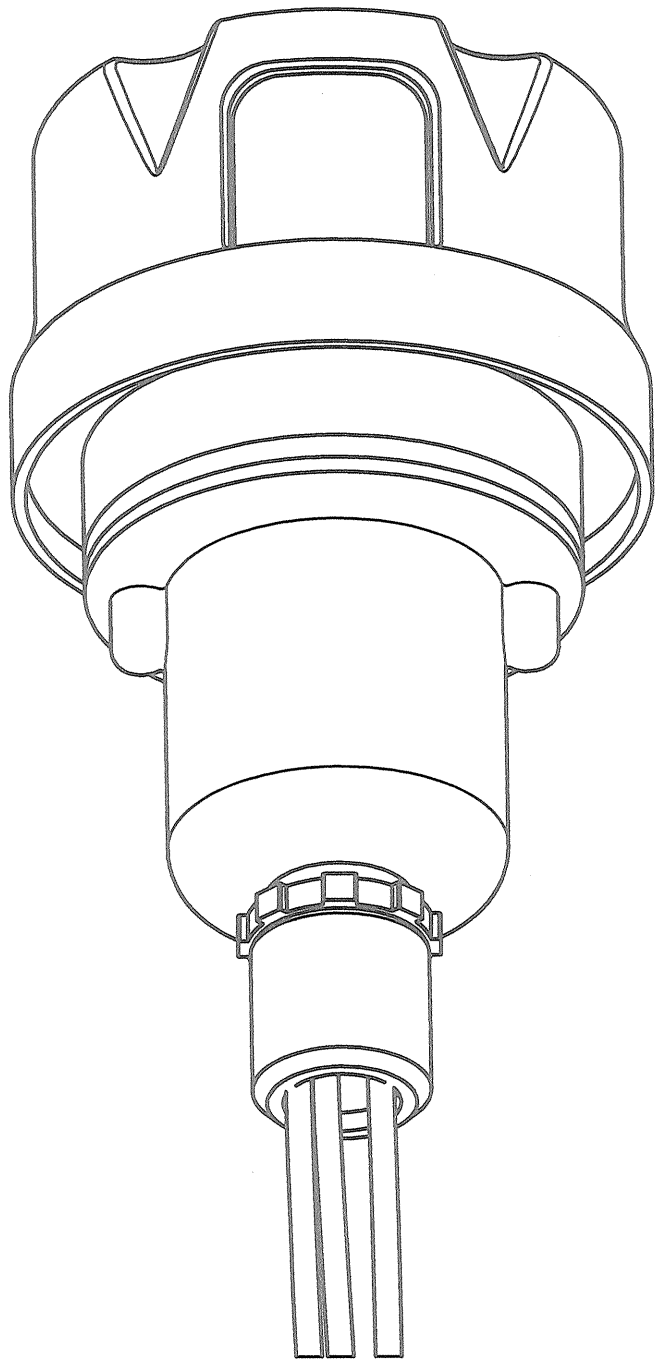
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PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	PHOTOCELL
2	2	6-32 x 1" SCREW
3	1	RECEPTACLE SOCKET
4	1	RECEPTACLE GASKET
5	1	RECEPTACLE HOUSING
6	1	1/2" CONDUIT LOCKNUT
7	1	3/4" TO 1/2" REDUCER



EXPLODED VIEW



ASSEMBLY

NOTES:

- ITEM #7 CAN BE USED TO REDUCE 3/4" CONDUIT TO 1/2" CONDUIT AT THE HOUSING OR AT THE CONTROLLER ITSELF.
- 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

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

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

4

3

2

1

BILL OF MATERIALS

ITEM NO.	TWR PART NO.	DESCRIPTION
1	BEACON	300 MM BEACON RED
2	620PS40P	620 WATT 120 VOLT LAMP
3	OL1	3/4" OBSTRUCTION LIGHT
4	116A21TS	116 WATT 120 VOLT LAMP
5	GCB295SA	3/4" CORD CONNECTOR
6	JB5	3/4" JUNCTION BOX
7	JB0	3/4" STRAIN RELIEF BOX
8	JB8	1" JUNCTION BOX
9	JB8SR	1" STRAIN RELIEF BOX
10	UNY205	3/4" UNION
11	UNY305	1" UNION
12	T27CG	3/4" CONDULET W/COVER AND GASKET
13	T37CG	1" CONDULET W/COVER AND GASKET
14	EL3490	3/4" 90° SHORT ELBOW
15	EL3430	3/4" 30° ELBOW
16	EL190	1" 90° ELBOW
17	5012902	3/4" BREATHER
18	SS10012	WRAPLOCK
19	PIPDOP	4 oz PIPE DOPE
20	A314	3/4" CONDUIT LOCKNUTS
21	A315	1" CONDUIT LOCKNUT
22	RE32	1" TO 3/4" REDUCER
23	CPLG34	3/4" GALVANIZED COUPLING
24	N34T3	3/4" x 3" NIPPLE
25	HC402	3/4" NO THREAD CONNECTOR
26	CONDUIT34	3/4" CONDUIT (FOR OL)
27	SLPIGAL25	25" SIDELIGHT PIGTAIL
28	AA2/3	B
29	AA2/3	B
30	CONDUIT1	1" CONDUIT (1/2 TOWER HT. + 30"/9M)
31	6THHNWHT	#6 THHN WHT. WIRE (TOWER HT.+40'/12M)
32	6THHNWHT	#6 THHN WHT. WIRE (1/2 TWR HT.+40'/12M)
33	8THHNBLK	#8 THHN BLK. WIRE (TOWER HT.+40'/12M)
34	10THHNRED	#10 THHN RED WIRE (3/4 TWR HT.+40'/12M)
35	10THHNBLUE	#10 THHN BLUE WIRE (1/2 TWR HT.+40'/12M)
36	10THHNBLUE	#10 THHN BLUE WIRE (1/2 TWR HT.+40'/12M)
37	12THNRLW	#12 THHN RLW. WIRE (1/4 TWR HT.+40'/12M)

ITEM NUMBERS #29-#37 ARE NOT INCLUDED IN THE KIT BUT ARE AVAILABLE UPON REQUEST, AND REQUIRED FOR INSTALLATION.

ITEM NO.	TWR PART NO.	DESCRIPTION
29	CONDUIT34	3/4" CONDUIT (1/2 TOWER HT.)
30	CONDUIT1	1" CONDUIT (1/2 TOWER HT. + 30"/9M)
31	6THHNWHT	#6 THHN WHT. WIRE (TOWER HT.+40'/12M)
32	6THHNWHT	#6 THHN WHT. WIRE (1/2 TWR HT.+40'/12M)
33	8THHNBLK	#8 THHN BLK. WIRE (TOWER HT.+40'/12M)
34	10THHNRED	#10 THHN RED WIRE (3/4 TWR HT.+40'/12M)
35	10THHNBLUE	#10 THHN BLUE WIRE (1/2 TWR HT.+40'/12M)
36	10THHNBLUE	#10 THHN BLUE WIRE (1/2 TWR HT.+40'/12M)
37	12THNRLW	#12 THHN RLW. WIRE (1/4 TWR HT.+40'/12M)

* = ITEMS NOT SHOWN

NOTES:

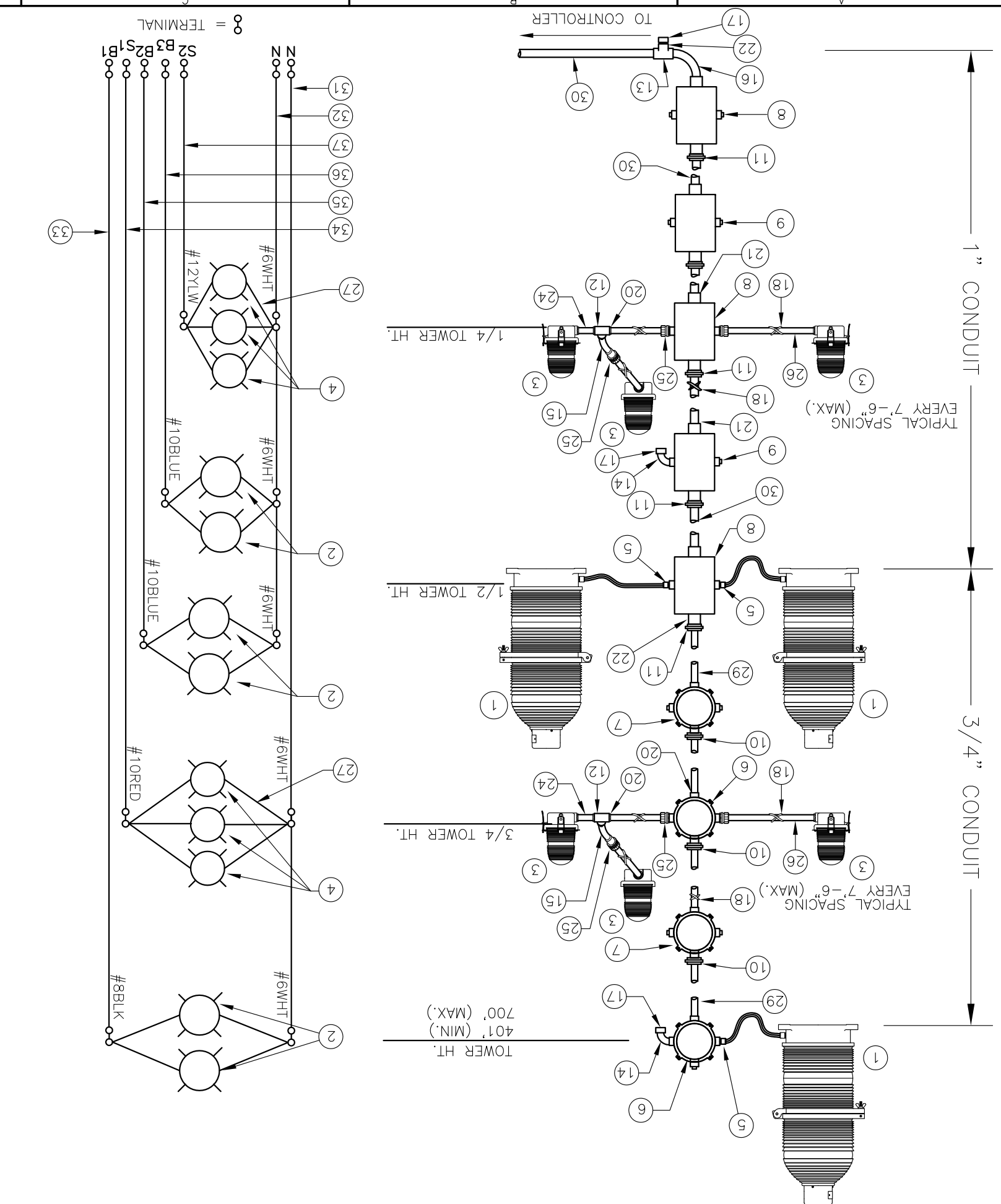
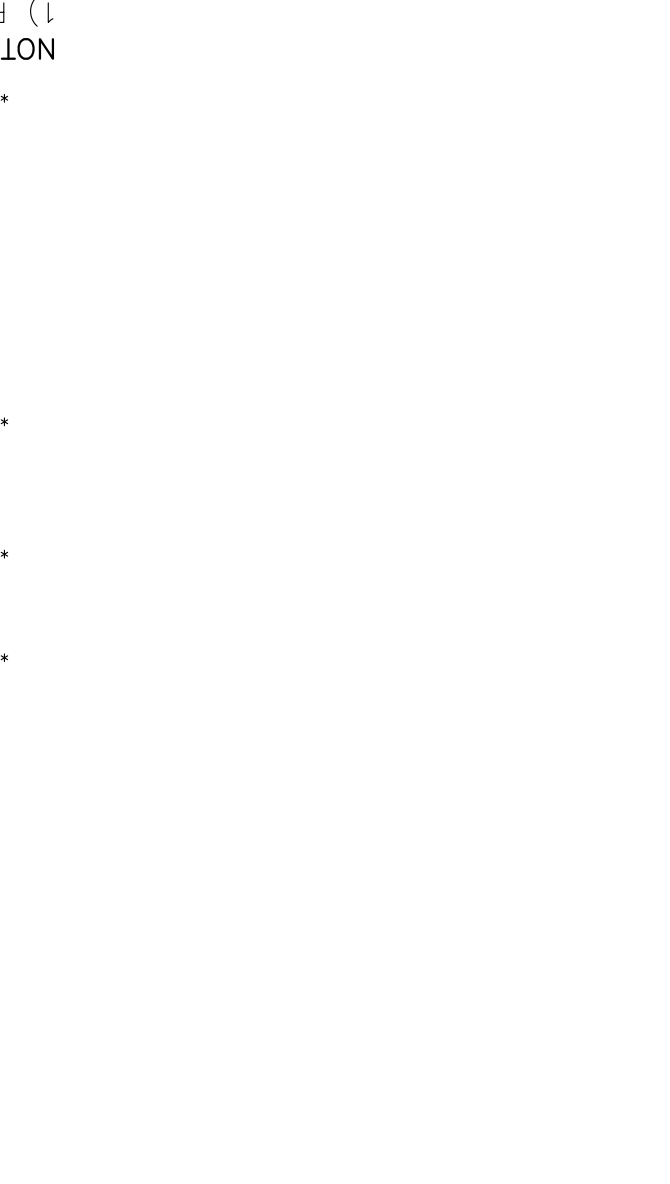
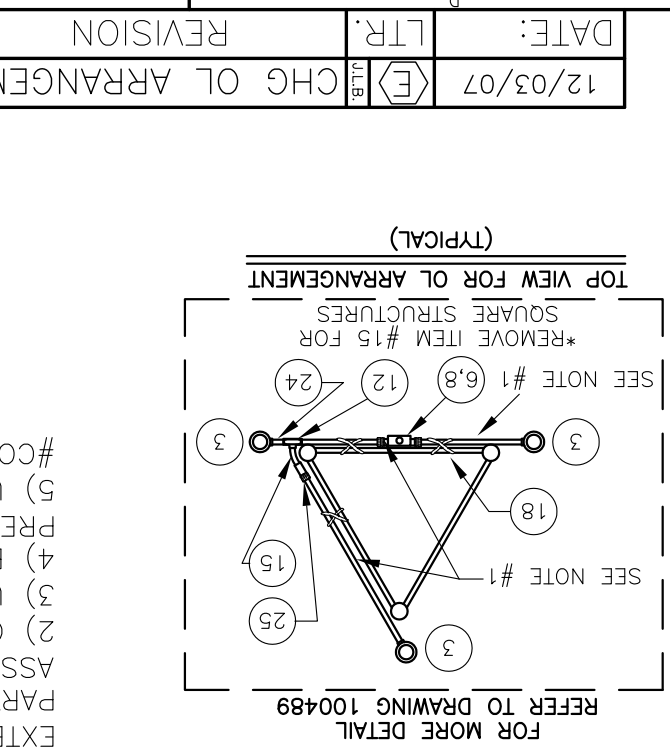
- 1) PART #CONDUIT34 CUT TO LENGTH FOR PROPER EXTENSION OF OL1 (6"-12") FROM STRUCTURE. ATTACH PART #HC402 TO UNTHREADED CONDUIT TO COMPLETE ASSEMBLY.
- 2) CONDUIT SIZE BASED ON USING TYPE THHN WIRE.
- 3) USE RIGID GALVANIZED STEEL CONDUIT.
- 4) BREATHERS ALLOW FOR CIRCULATION OF AIR TO PREVENT CONDENSATION.
- 5) USE COUPLING THAT IS PROVIDED WITH PART #CONDUIT34 TO ATTACH ITEM EL3430 TO PART #HC402.

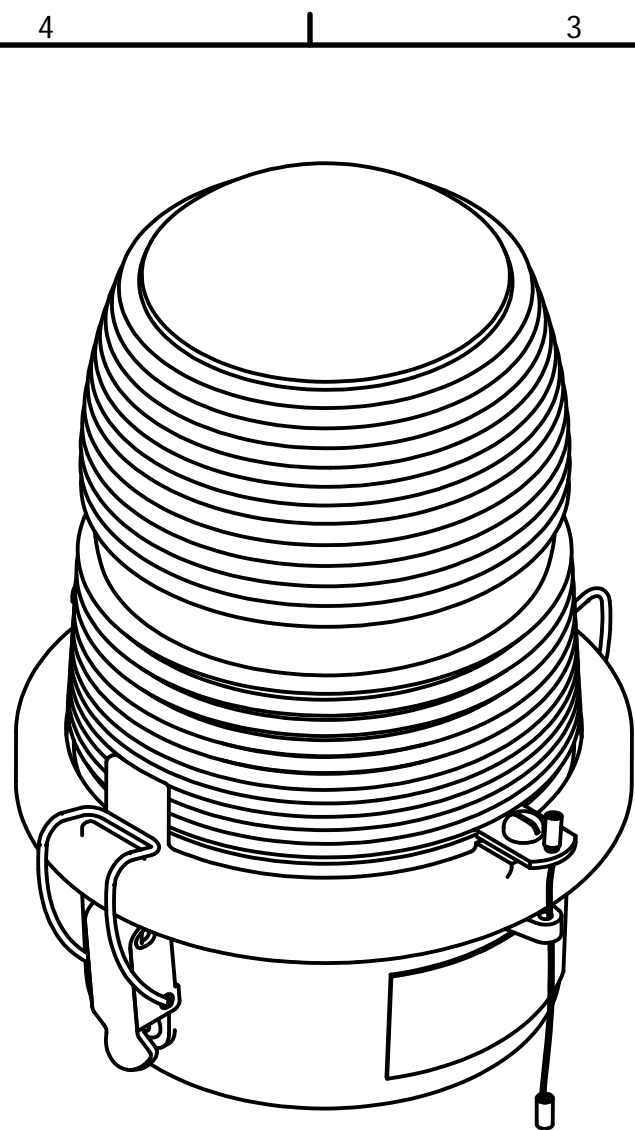
LK2A2/3B TOWER LIGHT KIT W/BOOST
(TOWERS 401'/122M TO 700'/213M)

PROD DEPT
SERV DEPT
ENGINEER
DRAWN BY E.A.SALAZAR
SCALE N.T.S.
DATE 12/15/92
DWG. NO. 261-32B
SHEET SIZE B
SHEET QTY. 1 OF 1

TWR Lighting, Inc. MARK
Enlightened Technology

12/03/07 DATE: 12/03/07
CHG OL ARRANGEMENT
LTR. J.L.B.
REVISION



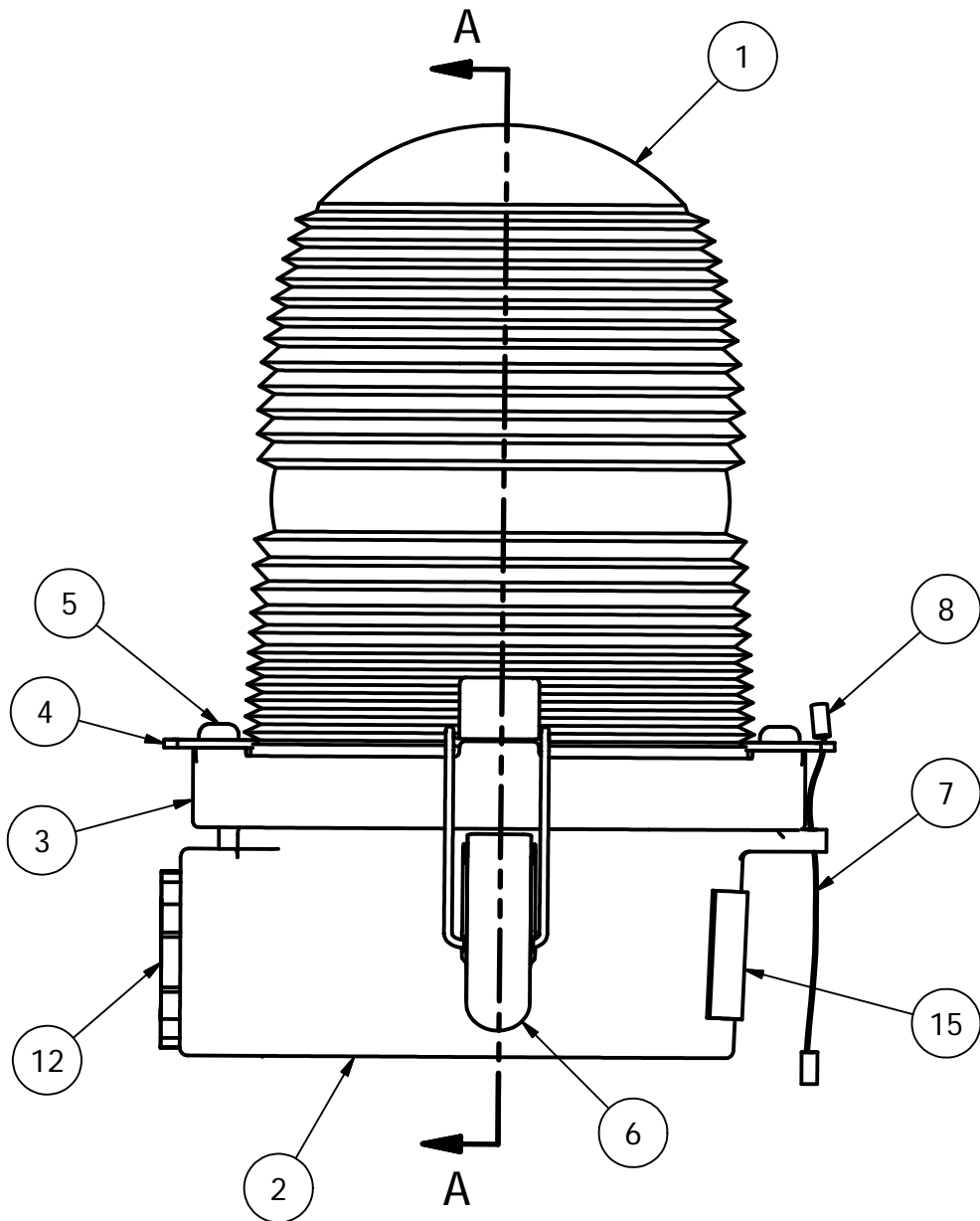


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	AP35222	RED SIDELIGHT GLASS
2	1	105C	SINGLE SIDELIGHT BODY
3	1	106C	LENS HOLDER RING
4	2	12V245	OL LENS CLIP
5	2	832X14PH	8-32 X 1/4" PH SS SLOT SCREW
6	2	HC255SS	SIDELIGHT LATCH
7	1	7X7SS	1/16 HOL 7X7 S.S. WIRE
8	2	A1A	STAKON CRIMP
9	1	OLG	OL GASKET
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.)

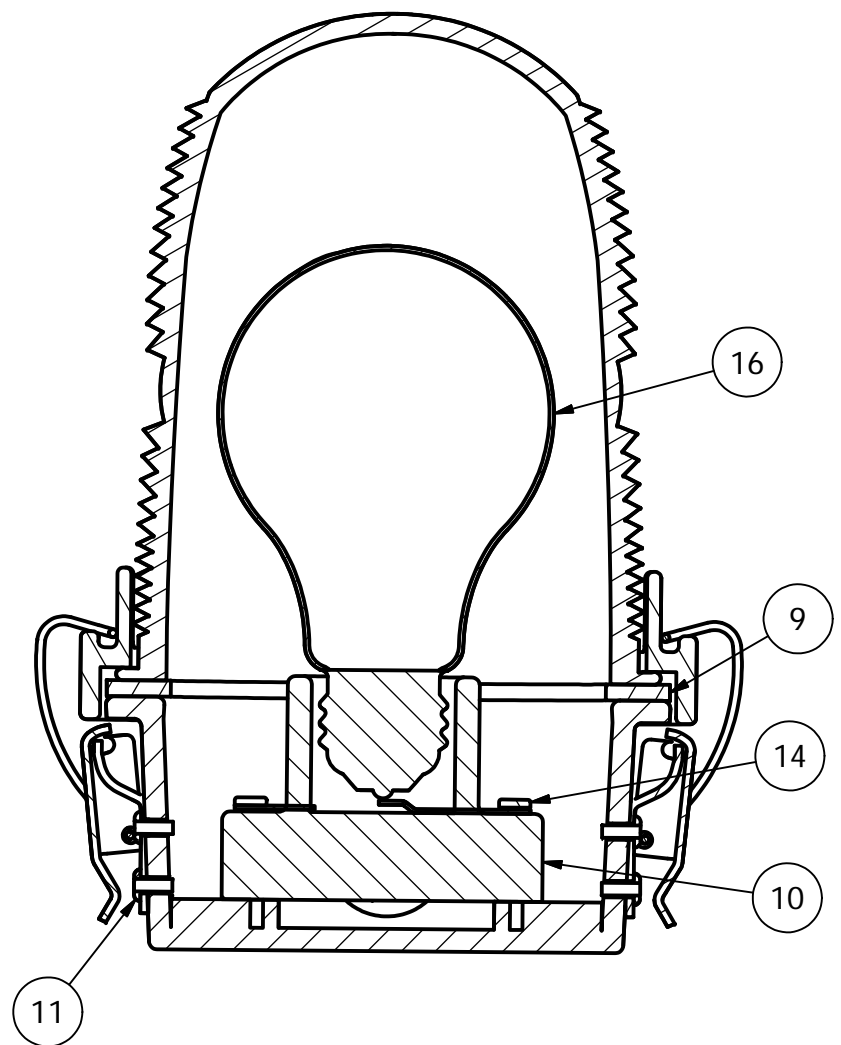
* = PART NOT SHOWN
 ~ = PART SOLD SEPARATELY

NOTE:

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

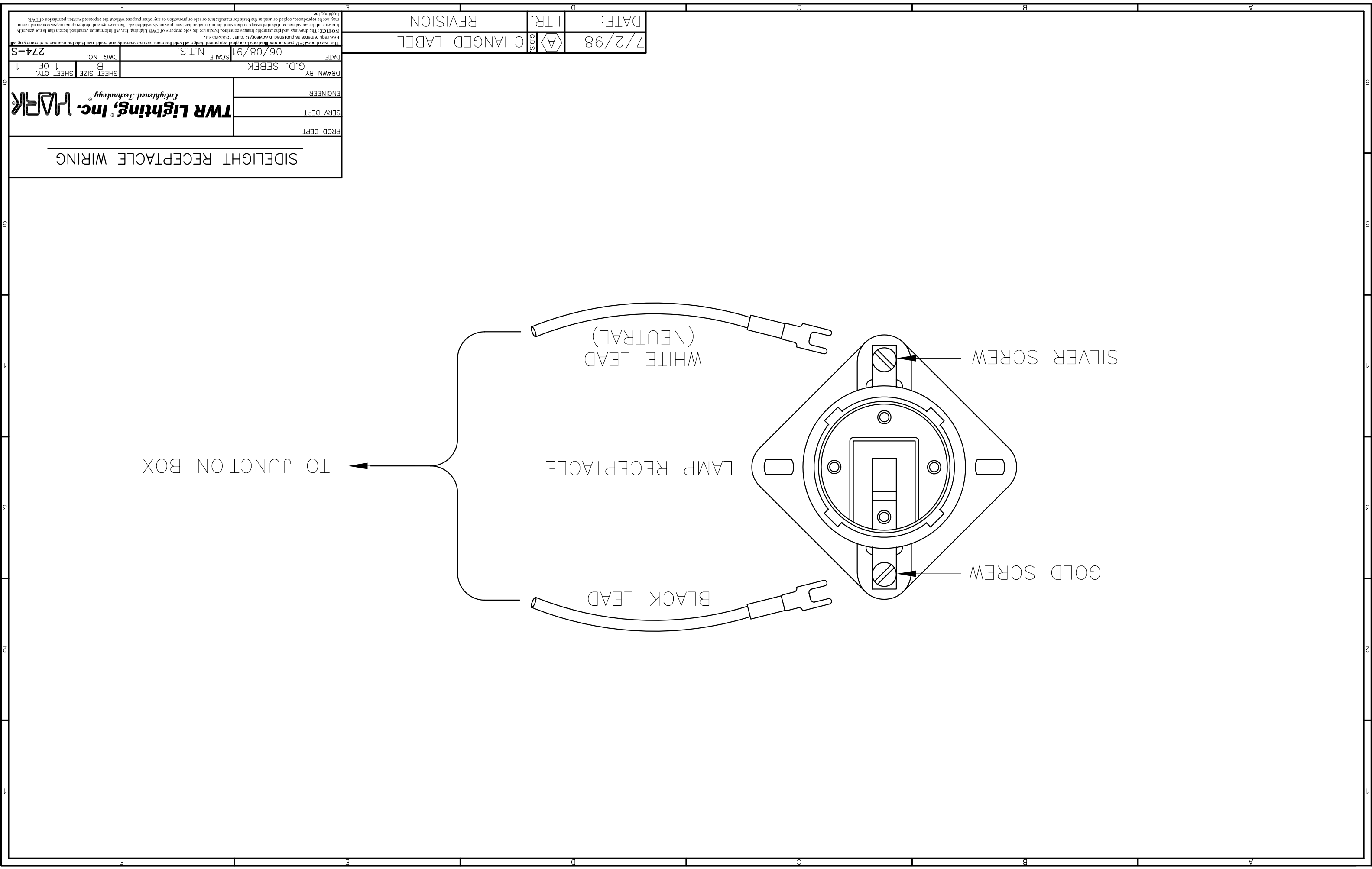


SECTION A-A



DRAWN	vhernandez	2/13/2012
CHECKED		
QA		
MFG		
APPROVED		

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
SCALE	SHEET 1 OF 1	
2/3		



SIDELIGHT RECEPTACLE WIRING

PROD DEPT

SERV DEPT

ENGINEER

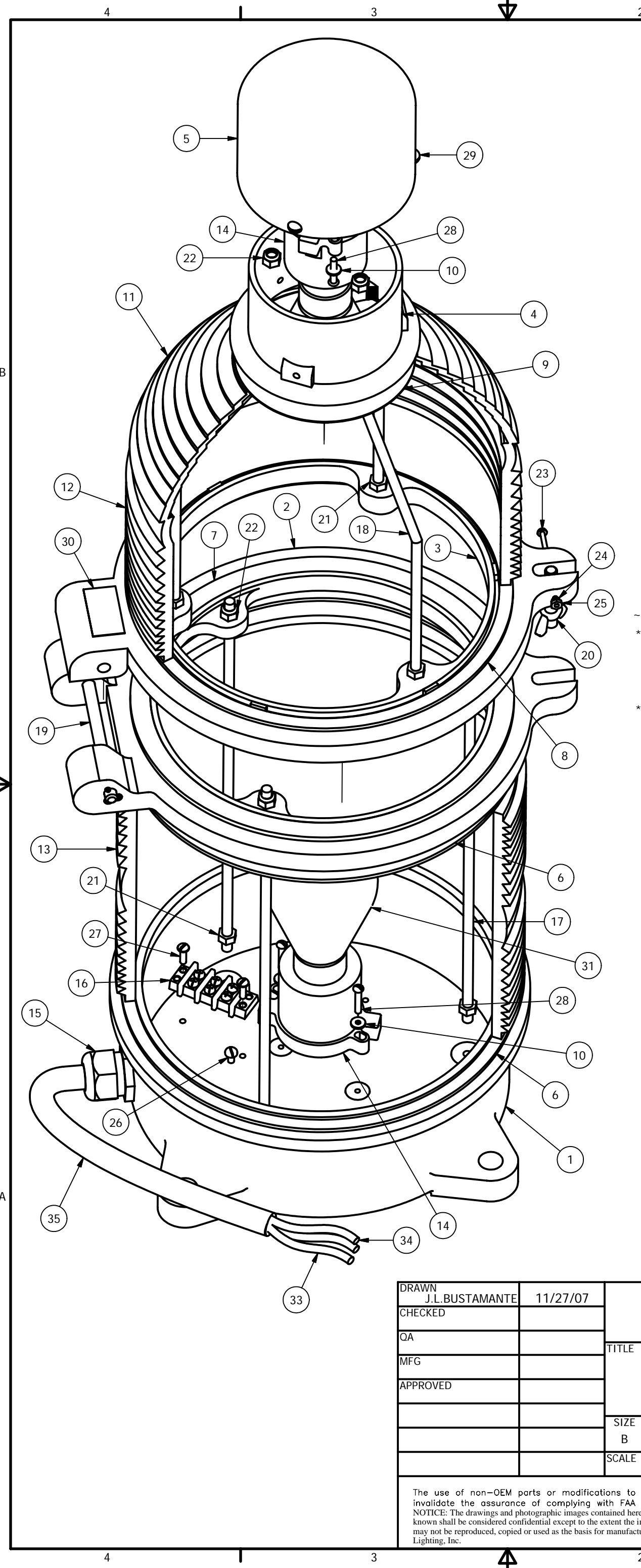
DRAWN BY G.D. SEBEK

DATE 06/08/91 SCALE N.T.S.

274-S

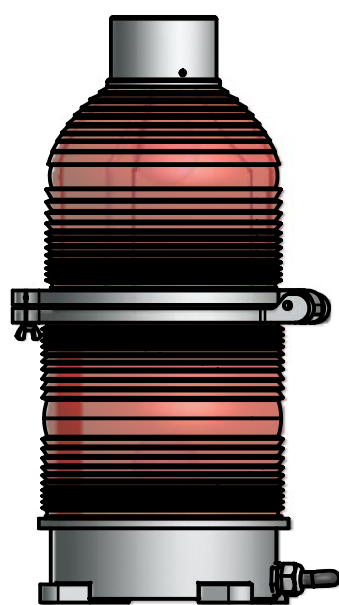
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DATE: 7/2/98	LTR.	CHANGED LABEL
REVISION		



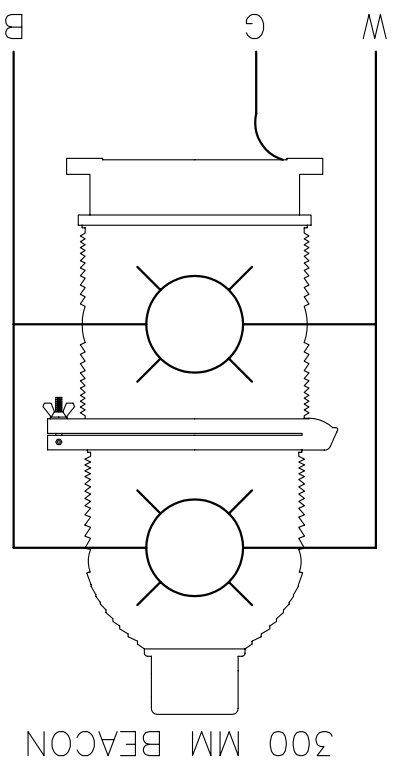
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	100C	BEACON BASE
2	1	101C	LOWER HINGE
3	1	102C	UPPER HINGE
4	1	103C	CANOPY CAP
5	1	104C	CANOPY FLANGE
6	2	100G	GASKET BEACON BASE
7	1	101G	GASKET MIDDLE BEACON
8	1	102G	GASKET, TOP HINGE
9	1	103G	GASKET TEFLON, TOP
10	4	104G	WHITE TEFLON WASHER
11	1	AP3557	CAP LENS RED
12	1	AP3556	MIDDLE LENS RED
13	2	AP3555	BOTTOM LENS RED
14	2	TWR23-546	BEACON LAMP RECEPTACLE
15	1	CGB295SA	3/4" CORD CONNECTOR .62 TO .75
16	1	TERMBLK3	TERMINAL BLOCK 3-PART
17	3	BTRS-1	BEACON TIE ROD STRAIGHT
18	3	BTRB	BEACON TIE ROD BENT
19	1	BHP	BEACON HINGE PIN W/ COTTER PIN
20	1	BLP	BEACON LATCH PIN
21	6	516NUT	5/16-15 HEX NUT
22	6	516NUTN	5/16-18 NUT W/NYLON INSERT
23	1	632X2RH	6-32 X 2 SS RH SLOT SCREW
24	1	632LW	6-32 LOCK WASHER
25	1	632NUT	6-32 NUT HEX
26	1	1032x38BH	10-32 X 3/8 PILLIPS PAN HEAD
27	2	1032x58PH	10-32 X 5/8 PH SLOT SCREW
28	4	1032X1RH	10-32 X 1 SS RH SCREW
29	3	1420X58RH	14-20 X 5/8 RH SLOT SCREW
30	1	100328	BEACON SERIAL NUMBER LABEL
31	2	---	BEACON LAMP
* 32	7	TYZ23M	HI TEMP TY WRAPS T&B TEFZEL
33	4'	16HTWH	#16 HI-TEMP WIRE SRML WHITE
34	4'	16HTBL	#16 HI-TEMP WIRE SRML BLACK
35	5'	CSO14/3	S.O. CORD 14AWG/3 CONDUCTOR
* 36	11	YAV14-H34F	(STAKON) BURNDY HEAVY DUTY

* = ITEMS NOT SHOWN
 ~ = PART SOLD SEPARATELY

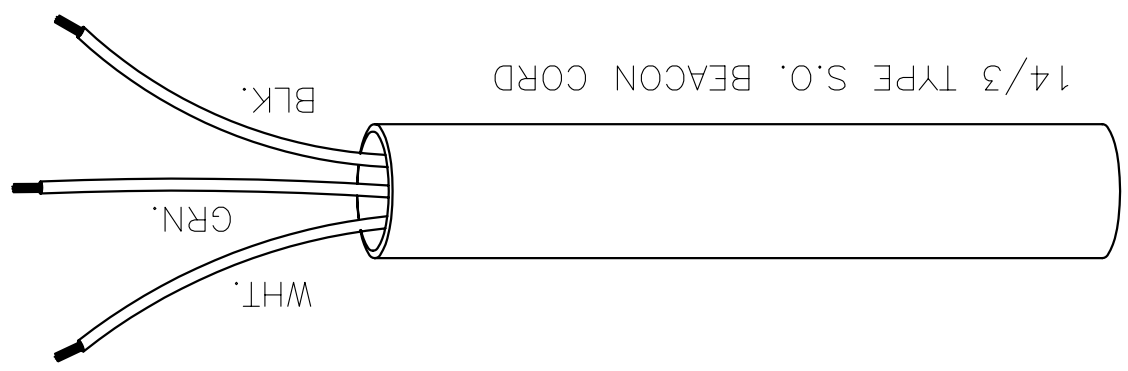


DRAWN J.L.BUSTAMANTE	11/27/07	TWR Lighting, Inc. <i>Enlightened Technology</i>		
CHECKED				
QA		TITLE 300 MM BEACON ASSEMBLY DETAIL		
MFG				
APPROVED		SIZE B	DWG NO 275-B	REV E
		SCALE	SHEET 1 OF 1	

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. 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.



- 1) WHITE WIRE IS NEUTRAL TO BOTH LAMPS.
- 2) BLACK WIRE IS LINE TO BOTH LAMPS.
- 3) GREEN WIRE IS EARTH GROUND.



300 MM BEACON WIRE

PROD DEPT _____
 SERV DEPT _____
 ENGINEER _____

TWR Lighting, Inc.
Enlightened Technology

SHEET SIZE B
 SHEET QTY. 1 OF 1

DRAWN BY G.D. SEBEK
 DATE 6/10/91
 SCALE N.T.S.
 DWG. NO. 273-B

The use of non-USA parts or materials in original equipment design will void the manufacturer's warranty and could invalidate the assurance of compliance as outlined in Advisory Circular 150/5345-43.
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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-unit parts or materials to original equipment design will void the manufacturer's warranty and could invalidate the assurance of compliance with FAA requirements as published in Advisory Circular 150/5245-43.
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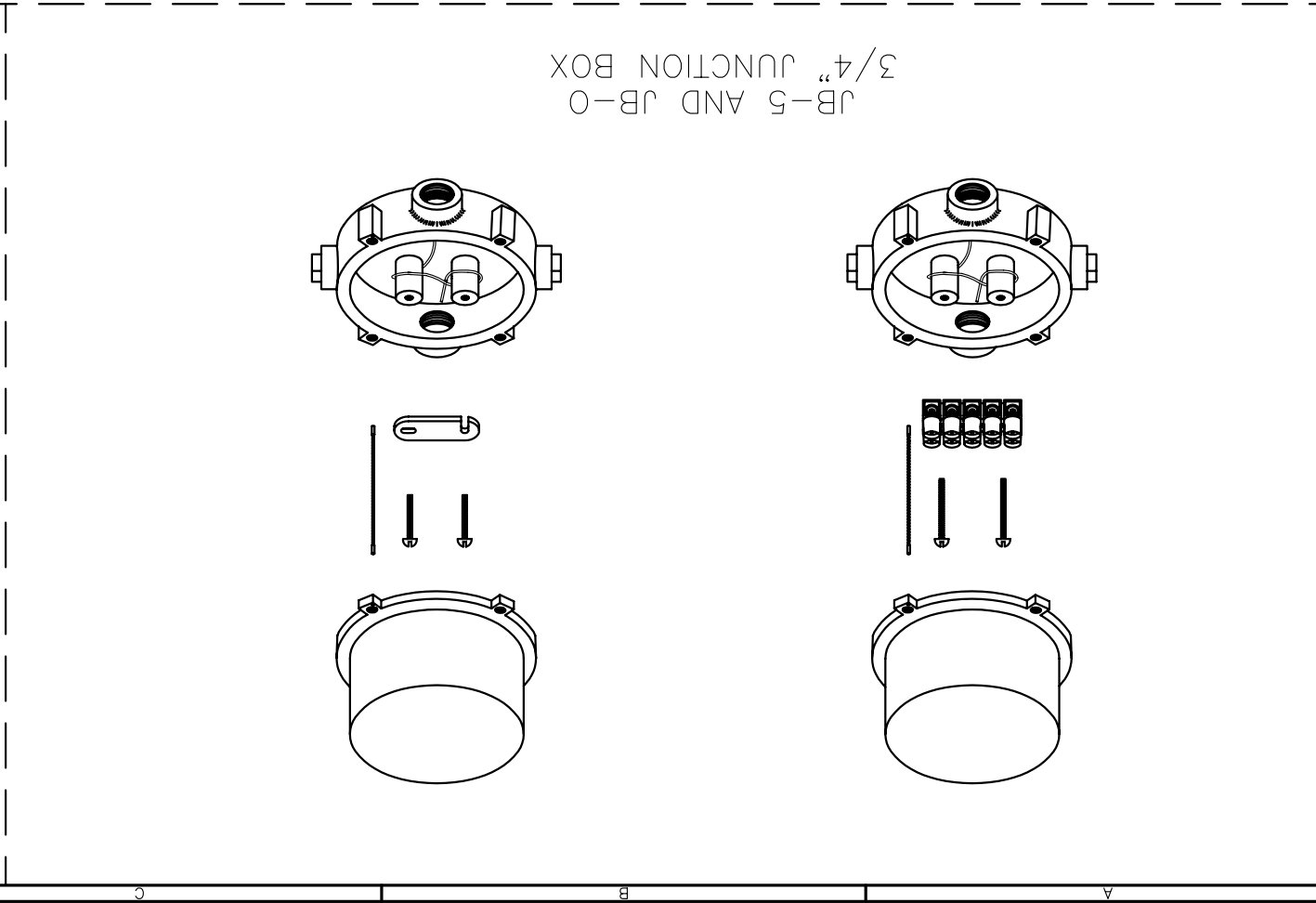
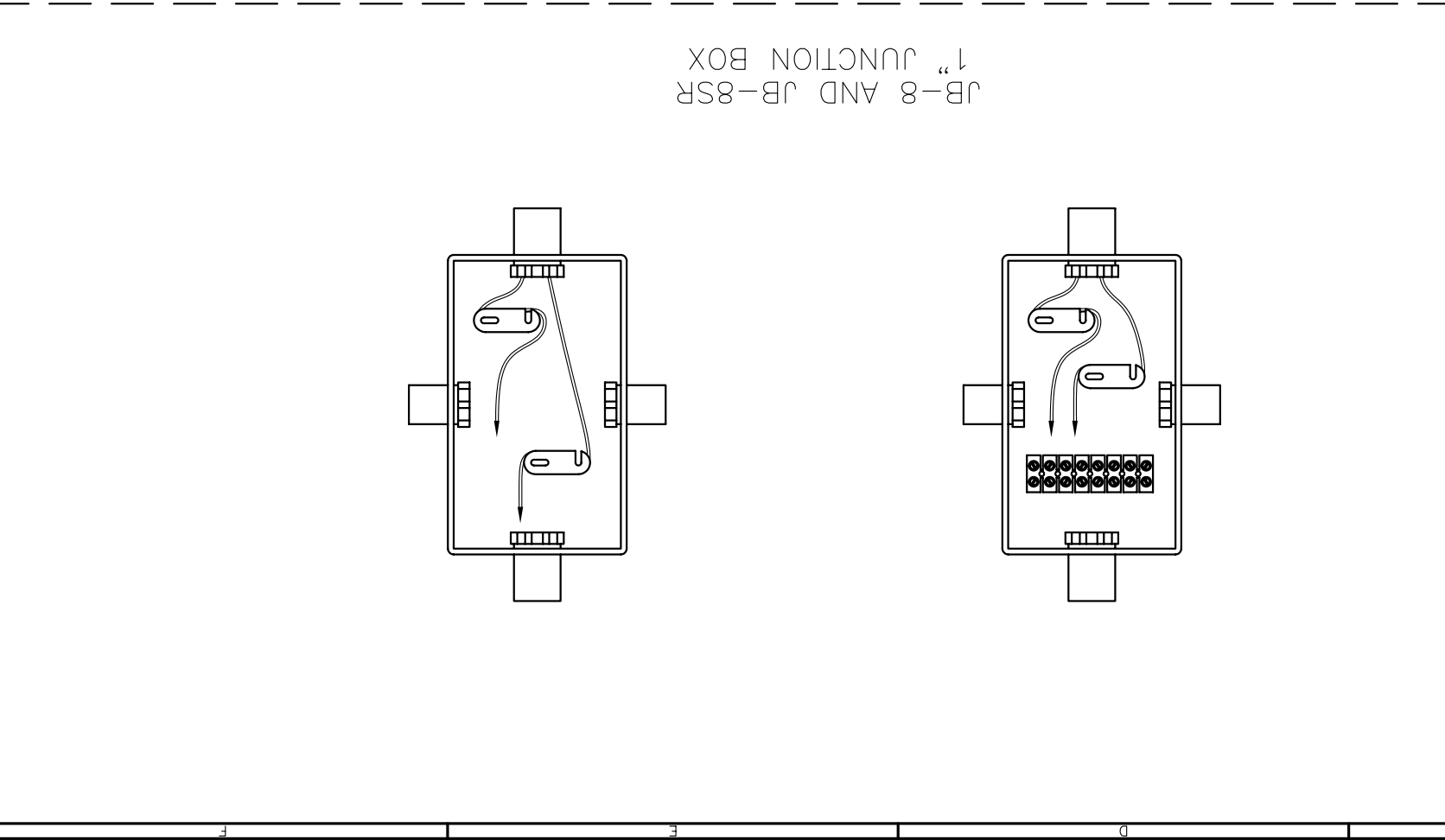
NOTES:

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.

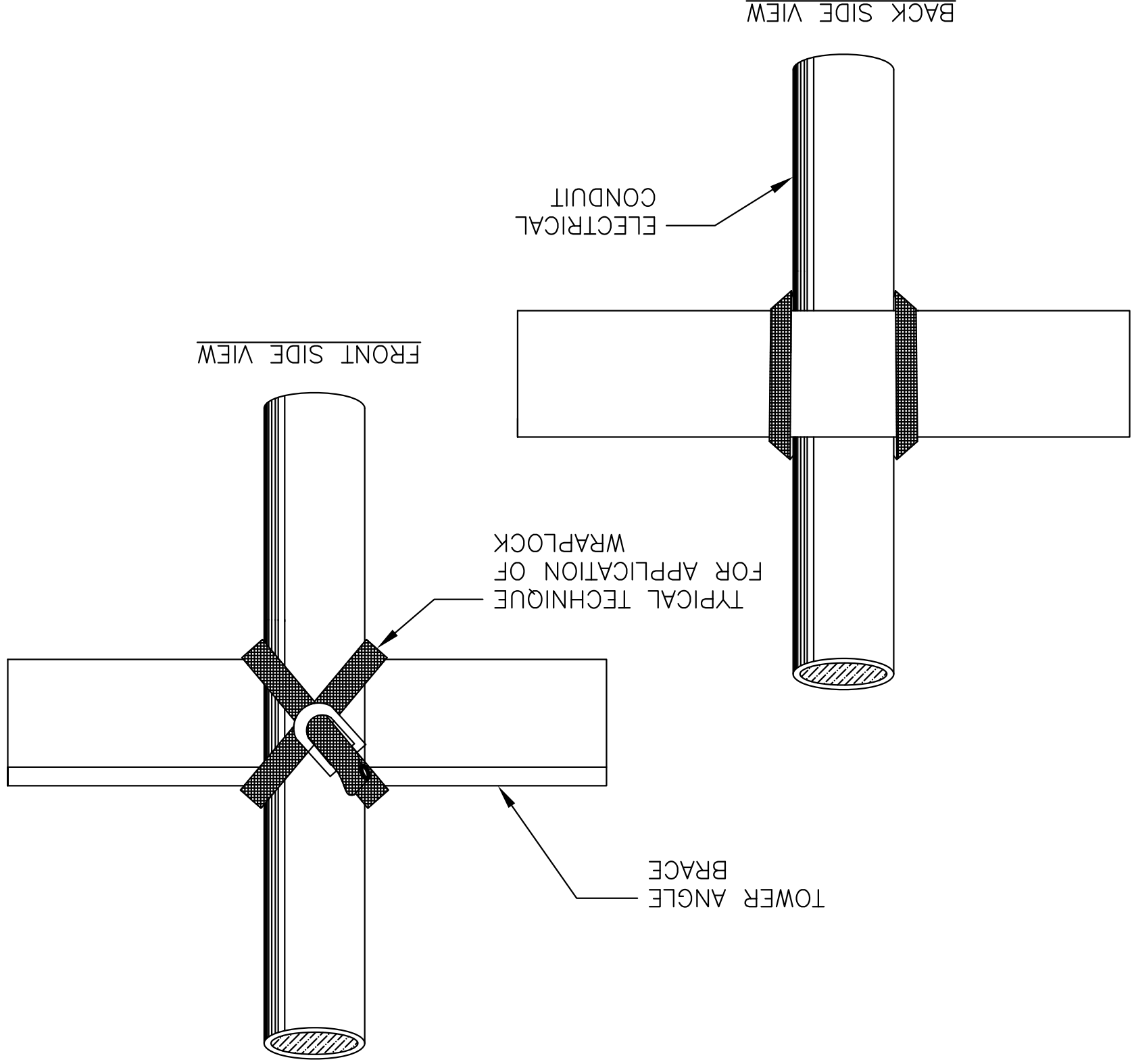
3) SKETCH ILLUSTRATES METHOD OF STRAIN RELIEVING A SINGLE CONDUCTOR. SEVERAL CONDUCTORS MAY BE GROUPED TOGETHER.

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



AWG	MAX. NUMBER WIRES IN 3/4" CONDUIT	MAX. NUMBER WIRES IN 1" CONDUIT	WIRE AREA SQ. INCHES	WEIGHT PER 100 FEET
12 THHN	16	26	0.0117	2.50
10 THHN	10	17	0.0184	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

USING THIS JUNCTION BOX METHOD SPACING IS 100 FEET MAXIMUM.



DIRECTIONS FOR USING Wraplock
 CUT OFF BAND TO PROPER LENGTH.
 (SEE TABLE ON COVER OF BOX)

1. — PASS ONE END THROUGH YOKE AND BEND BACK ABOUT 1 1/2" AND FLATTEN DOWN.
2. — PASS BAND AROUND WORK AND THROUGH YOKE.
3. — REPEAT AND PASS END THROUGH A SECOND TIME, DRAW UP FREE END SNUGLY WITH PLIERS.
4. — INSERT FREE END IN SLOT OF RATCHET. TURN DOWN UNTIL CLAMP IS TIGHT.
5. — BACK OFF SLIGHTLY TO REMOVE RATCHET. CLAMP IS NOW SECURELY LOCKED.
6. — TO REMOVE Wraplock UNCOIL END WITH RATCHET. PRESS DOWN AT POINT WHERE BAND METAL HAS BEEN FORCED THROUGH CURVED PART OF YOKE.

WRAPLOCK FASTENING DETAIL

ENGINEER

APPROVED

APPROVED

APPROVED

DRAWN BY M. PETERMAN
 SHEET SIZE B
 SHEET QTY. 1 OF 1

DATE 05/01/2014
 SCALE N.T.S.
 DWG. NO. 100984

TWR Lighting, Inc. MARK
Lightened Technology

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