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ETL Certified to FAA Specification

AC 150/5345-27 (Current Version) and

FAA Engineering Brief 67 (Current Version)

L-807 Wind Cone

Style I-A, I-B, II, Size 1 and Size 2

User Manual

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a.1 History of Change

PAGE	REV	DESCRIPTION	EC NO.	CHECKED	APPROVED	DATE
All	E	Updated parts and diagrams for APS	2987	JR	DM	11/17/10
All	F	Updated maintenance, parts and diagrams				3/30/08
All	G	Updated schematics, maintenance and parts sections		DR	ER	1/9/09
All	H	Added Rotating Power Supply Parts Added Kit install instructions	2297	DR	ER	11/06/09
	I	Added new diagrams, pictures and parts		DR	ER	09/14/10
10x-11x	J	Updated parts and schematics		DR	ER	05/24/11
All	K	Updated incandescent and LED info and parts.	3852/3822	DR	ER	04/23/13

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1.0 Safety

This section contains general safety instructions for installing and using ADB Airfield Solutions equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

1.1 To use this equipment safely

WARNING

Read installation instructions in their entirety before starting installation.

- Refer to the FAA Advisory Circular AC 150/5340-26, Maintenance of Airport Visual Aids Facilities, for instructions on safety precautions.
- Observe all safety regulations. To avoid injuries, always disconnect power before making any wiring connections or touching any parts. Refer to FAA Advisory Circular AC 150/5340-26.
- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

1.1.1 Additional Reference Materials

- C22.1 Canadian Electrical Code (latest rev)
- NFPA 70B, Electrical Equipment Maintenance.
- NFPA 70E, Electrical Safety Requirements for Employee Workplaces.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- OSHA 29 CFR, Part 1910, Occupational Health and Safety Standards.
- National and local electrical codes and standards.

1.1.2 Qualified Personnel

The term **qualified personnel** is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements.

Always use required personal protective equipment (PPE) and follow safe electrical work practices.

1.1.3 Intended Use

WARNING

Using this equipment in ways other than described in this manual may result in personal injury, death or property and equipment damage. Use this equipment only as described in this manual.

ADB Airfield Solutions cannot be responsible for injuries or damages resulting from nonstandard, unintended applications of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended uses and may result in serious personal injury, death or property and equipment damage. Unintended uses may result from taking the following actions:

- Making changes to equipment that are not recommended or described in this manual or using parts that are not genuine ADB Airfield Solutions replacement parts.
- Failing to make sure that auxiliary equipment complies with approval-agency requirements, local codes and all applicable safety standards.
- Using materials or auxiliary equipment that are inappropriate or incompatible with ADB Airfield Solutions equipment.
- Allowing unqualified personnel to perform any task.

1.1.4 Storage

CAUTION

If equipment is to be stored prior to installation, it must be protected from the weather and kept free of condensation and dust.

Failure to follow this instruction can result in injury or equipment damage.

1.1.4.1 Operation

WARNING

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

1.1.4.2 Material Handling Precautions

CAUTION

This equipment may contain electrostatic sensitive devices.

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you should bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

1.1.4.3 Action in the Event of a System or Component Malfunction

WARNING

- Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.
- Disconnect and lock out electrical power.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual.

1.1.4.4 Maintenance and Repair

WARNING

Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks.

- Only persons who are properly trained and familiar with ADB Airfield Solutions equipment are permitted to service this equipment.
- Disconnect and lock out electrical power.
- Always use safety devices when working on this equipment.
- Follow the recommended maintenance procedures in the product manuals.
- Do not service or adjust any equipment unless another person trained in first aid and CPR is present.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved ADB Airfield Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals and create safety hazards.
- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

1.1.4.5 Operation of Overloaded Regulators

WARNING

- Operation of a Regulator while overloaded at any step may result in equipment failure or equipment damage.

2.0 L-807 Introduction

WARNING
Read the instructions in their entirety before starting installation or attempting any maintenance.

2.1 Compliance with Standards

FAA: L-807 & L-807(L) AC 150/5345-27 (Current Edition) and the FAA Engineering Brief No. 67 “Light Sources other than Incandescent and Xenon for Airport Lighting and Obstruction Lighting Fixtures.” ETL Certified.

2.2 Uses

Provides visual surface wind direction and velocity information to pilots in flight or on the ground at airports and heliports.

2.3 Features

- The L-807 wind cone is a non-frangible designed wind cone available in three styles, lighted (internal or external) or unlighted, and in two sizes, eight- or twelve-foot wind socks.
- Pole is available with either a center hinge or bottom hinge. Center hinge allows easier pole lowering. Bottom hinge includes a swing-out support leg that allows the mast to be lowered to a convenient servicing height for light source replacement.
- The LED lighted wind cone assemblies may be powered directly from a 2.8-6.6 A or 8.5-20 A series circuit using only an isolation transformer. No power adapter is needed, significantly reducing CCR load. It may also be powered from a direct 95-264 VAC source. LED light output stays constant regardless of input current range (for series powered) or input voltage level (for voltage powered) wind cones.
- Any AC voltage-powered incandescent wind cone may be powered from a 6.6 A or 20 A series circuit using an ADB power adapter or from a direct 120 VAC source.
- Sealed bearings allow precision vane operation for true wind direction in all types of weather and wind conditions.
- Bearing covers are provided for additional bearing protection against dirt and moisture.
- The nylon fabric sock is treated for water repellency and resistance to rot and mildew.
- Standard colors are orange or orange/white banded and the colorfastness exceeds Method 5671 of Federal Standard 191. Other colors are available as a special order.
- An optional L-810(L) red LED obstruction light is available (see catalog sheet 2063). For wind cone configurations available with an LED L-810(L), see ordering code.

2.4 Lighting Assembly - LED

— The internally lighted wind cone provides an average illumination on the top and lateral surface of a fully extended windsock of 10- to 30-ft lamberts. The internally lighted 8-foot wind cone uses one LED optical assembly and the 12-ft uses three LED optical assemblies.

— The externally lighted wind cone provides a minimum illumination of 2 foot candles on the upper surface of the fully extended windsock. The externally lighted 8- and 12-foot wind cones use two LED optical assemblies.

— The wind sock is illuminated with orange LEDs and is used only on solid orange colored wind socks.

2.5 Lighting Assembly - Incandescent

— The internally lighted wind cone consists of two 100 W/ 120 VAC lamps for an 8-foot wind cone or three 100 W/ 120 VAC lamps for a 12-foot wind cone

— An incandescent lighted wind cone cage may be provided with an optional L-810(L) LED red obstruction light.

— The incandescent wind cone can be used on any solid colored or color-banded wind sock.

2.6 Operation

The operation of the wind cone is entirely dependent on the direction and relative velocity of the surface wind. Movement of the wind through the open throat of the cage and into the sock causes the tail to inflate. The tail of the inflated sock indicates true wind direction for velocities as low as three knots through a 360° circle about the vertical shaft.

2.6.1 FAA Wind Cone Classifications

Size 1:	8 foot
Size 2:	12 foot
Style I-A:	Externally Lighted
Style I-B:	Internally Lighted
Style II:	Unlighted

2.7 Electrical Supply

2.7.1 LED Current Driven

For 6.6 A or 20 A, 60 Hz circuits, a 150 W or 200 W L-830 transformer with appropriate primary input (i.e. 6.6 or 20 A) must be selected. Use 150 W or 200 W L-831 series for 50 Hz circuits.

L-807 LED	Fixture Load	Isolation Transformer	Isolation Load Transformer	CCR Load
Internally Lit, 8-ft				
Without L-810	79VA	150W	18VA	97VA
With LED L-810(L)	87VA	150W	20VA	107VA
Externally Lit, 8-ft				
Without L-810	87VA	200W	26VA	113VA
With LED L-810(L)	102VA	200W	27VA	129VA
Internally Lit, 12-ft				
Without L-810	96VA	20W	25VA	121VA
With LED L-810(L)	110VA	200W	23VA	133VA
Externally Lit, 12-f				
Without L-810	87VA	200W	26VA	113VA
With LED L-810(L)	102VA	200W	27VA	129VA

2.7.2 LED Voltage Driven

Input voltage:	95V AC (min.) - 264V AC (max.), 50/60Hz	
8-foot	**Internally Lit**	**Externally Lit**
Maximum input power:		
Without L-810	69VA	80VA
With LED L-810(L)	75VA	87VA
12 foot	**Internally Lit**	**Externally Lit**
Maximum input power:		
Without L-810	95VA	80VA
With LED L-810(L)	109VA	87VA

2.8 Dimensions

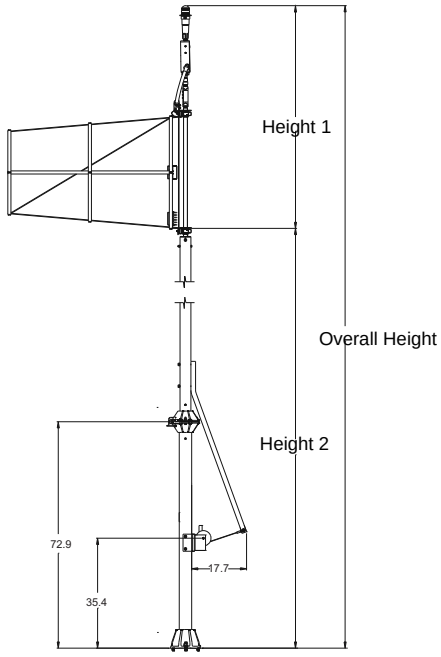
2.8.1 Internally Lighted

Wind Cone Type	Overall Height	Height 1	Height 2
Halogen 8 ft	232.25 in (589.9 cm)	40.25 in (102.2 cm)	192 in (487.7 cm)
Halogen 12 ft	250.25 in (635.6 cm)	48.25 in (122.5 cm)	192 in (487.7 cm)
LED 8 ft	245.2 in (622.8 cm)	53.2 in (135.1 cm)	192 in (487.7 cm)
LED 12 ft	263.4 in (669.0 cm)	71.4 in (181.4 cm)	192 in (487.7 cm)

2.8.2 Externally Lighted

Wind Cone Type	Overall Height	Height 1	Height 2	Height 3	Height 4
LED 8 ft	245.2 (622.8)	11.2 (28.5)	23.9 (60.7)	18 (45.7)	192 (487.7)
LED 12 ft	267.5 (679.5)	15.5 (61.2)	24.1 (127)	36 (91.4)	192 (487.7)

Figure 1: L-807 Heights



2.8.3 Packing

Description	Quantity Per Box	Dimensions (H x W x D)	Weight lb/kg
8-ft. Wind Cone Lighted	1 Pole	16.6 x 10 x 10 in / 502.9 x 25.4 x 25.4 cm	150 lb / 68 kg
	1 Basket	20 x 20 x 15 in / 50.8 x 50.8 x 38.1 cm	47 lb / 21.3 kg
8-ft. Wind Cone Unlighted	1 Pole	16.6 x 10 x 10 in / 502.9 x 25.4 x 25.4 cm	135 lb / 61.2 kg
	1 Basket	20 x 20 x 15 in / 50.8 x 50.8 x 38.1 cm	42 lb / 19.1 kg
12-ft. Wind Cone Lighted	1 Pole	16.6 x 10 x 10 in / 502.9 x 25.4 x 25.4 cm	150 lb / 68 kg
	1 Basket	45 x 42 x 6 in / 114.3 x 106.7 x 15.2 cm	47 lb / 21.3 kg
	Hardware	20 x 20 x 15 in / 50.8 x 50.8 x 38.1 cm	45 lb / 20.4 kg
12-ft. Wind Cone Unlighted	1 Pole	16.6 x 10 x 10 in / 502.9 x 25.4 x 25.4 cm	135 lb / 61.2 kg
	1 Basket	45 x 42 x 6 in / 114.3 x 106.7 x 15.2 cm	42 lb / 19.1 kg
	Hardware	20 x 20 x 15 in / 50.8 x 50.8 x 38.1 cm	45 lb / 20.4 kg

2.9 L-807 Wind Cone: Required Equipment

Refer to Table 1 for required equipment that is supplied. Refer to Table 2 for required equipment that is not supplied. Refer to the *Parts* section for ordering information.

Table 1: Required Equipment Supplied

Description	Quantity
L-807 wind cone assembly	1
Instruction manual	1 per order

Table 2: Required Equipment Not Supplied

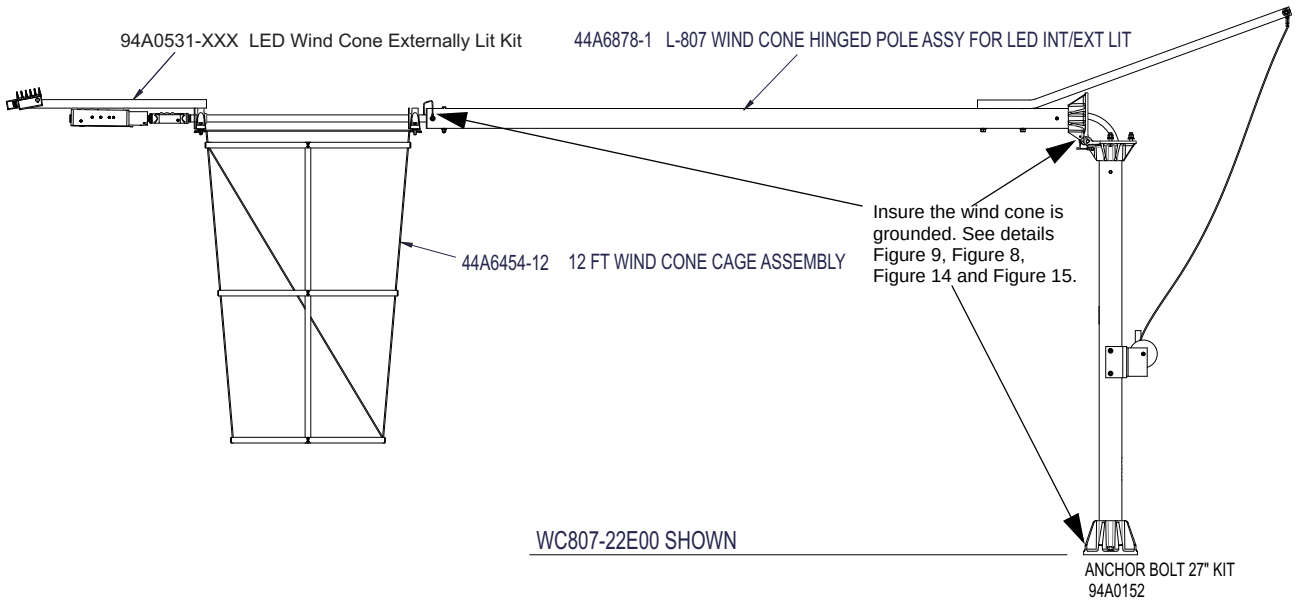
Description	Quantity
Wrenches for 3/8 inch, 1/2 inch, and 5/8 inch hex screws and nuts	3
Allen hex keys for 5/64 inch, 3/16 inch and 1/4 inch	3
Medium size blade screwdriver	1
Cloth for cleaning lamps	As required
Grease gun	1
Saw Horse	1

2.10 Lighted Wind Cones

2.10.1 Externally Lighted Wind Cones

The externally lighted LED assembly consists of a cluster of two LED light engine assemblies.

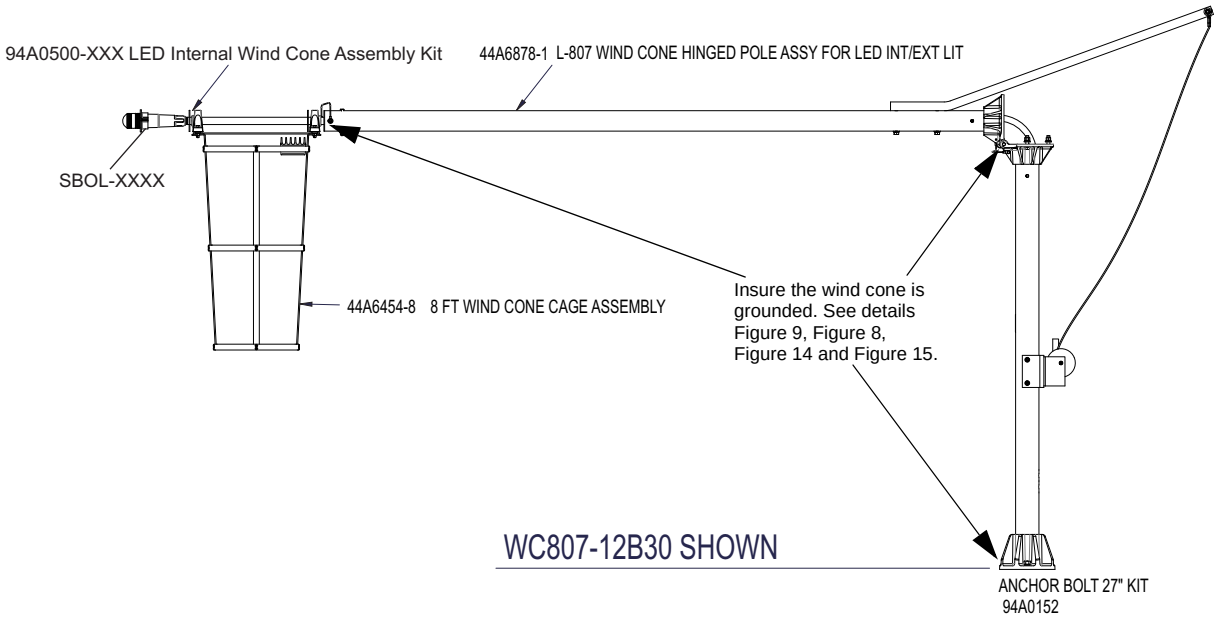
Figure 2: Externally Lighted L-807 Wind Cone with Obstruction Light (Side View)



2.10.2 Internally Lighted Wind Cone

The internally lit LED assembly design consists of one (for 8-foot) and three (for the 12-foot) LED light engine assemblies that are mounted directly on the throat ring of the wind cone's cage assembly. LED light engines are pre-focused at the factory.

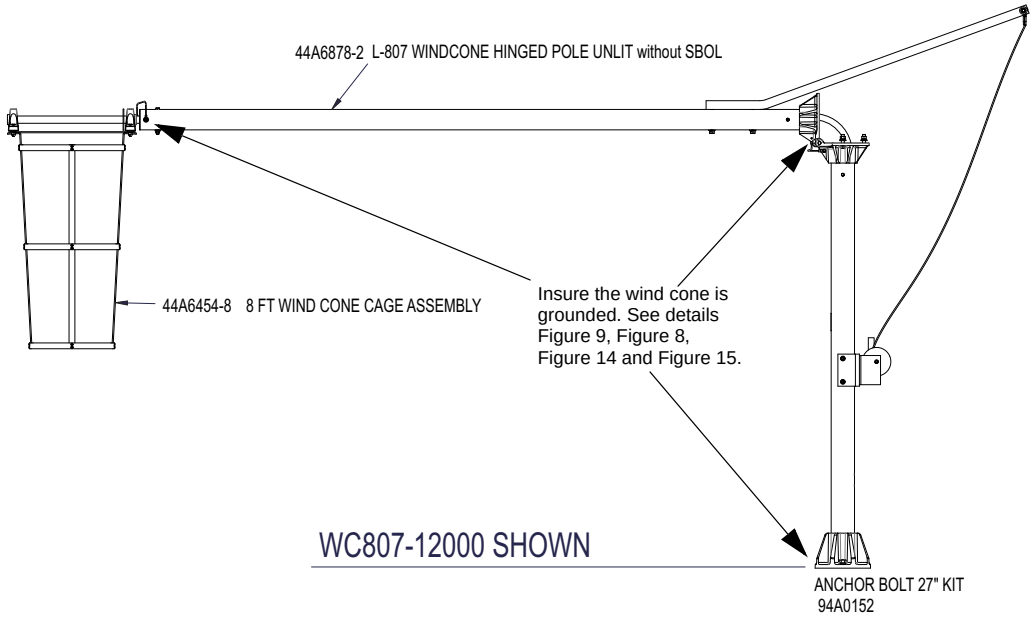
Figure 3: Internally Lighted L-807 Wind Cone with Obstruction Light (Side View)



2.11 Unlighted Wind Cones

The unlighted L-807 wind cones may include the L-810 obstruction light as an option. A pipe cap is provided for unlighted wind cone assemblies without the L-810 option to cover the top opening on the bearing and cage shafts.

Figure 4: Unlighted L-807 Wind Cone



3.0 L-807 Wind Cone Installation

WARNING

Read the instructions in their entirety before starting installation.

Check interlock systems periodically to ensure their effectiveness.

Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.

Use tools with insulated handles when working with electrical equipment.

Allow only qualified personnel to perform the following tasks. Observe and follow the safety instructions in this document and all other related documentation.

This section describes instructions for installing the L-807 wind cone.

3.1 Unpacking

The equipment is shipped ready for installation. Handle equipment very carefully to prevent component damage. Unpack the carton upon receipt and check the contents and their condition. Note any exterior damage to the carton that might lead to detection of equipment damage.

If you note any damage to any equipment, file a claim with the carrier immediately. The carrier may need to inspect the equipment.

3.2 Tools/Equipment/ Supplies Needed

The following are the tools, equipment, and supplies needed to install the L-807 wind cone:

- Wrenches for 3/8 in., 1/2 in., and 5/8 in. hex screws and nuts
- Allen hex keys for 5/64 in., 3/16 in. and 1/4 in.
- Medium size blade screwdriver
- Cloth for cleaning lamps
- Grease gun
- Sawhorse

3.3 Mounting the Foundation

When installed on a structure or building, the wind cone must be tethered. Also see FAA AC 150/5340-30 for addition mounting information.

Refer to the guidelines below when mounting the wind cone on the base.

See Figure 5. Put the L-807 wind cone on a concrete base.

NOTE: The concrete base is at least six 90-lb bags entrained with ¾ aggregates producing 3000 psi (20,684 KN•m2) after 20 days.

Slope the top of the concrete base downward from the 8-in. (203.2 mm) diameter bolt circle for drainage.

Place the 1-inch (25.4 mm) diameter electrical conduit in the hole in the center of the wind cone base. (Also see Figure 7.)

Use the four equally spaced 1-in. (25.4 mm) diameter anchor bolt holes in the bolt circle as centers for locating the four 5/8-in. (15.875 mm) x 27-in. (685.8-mm) long anchor bolts. (Also see Figure 7.)

NOTE: The wind cone foundation in Figure 5 is given as only a general guide. The engineer or contractor has the responsibility to determine the dimensions and type of foundation demanded by the soil conditions at the installation site.

Figure 5: Locating the Center Hinge-Pole Anchor Bolts

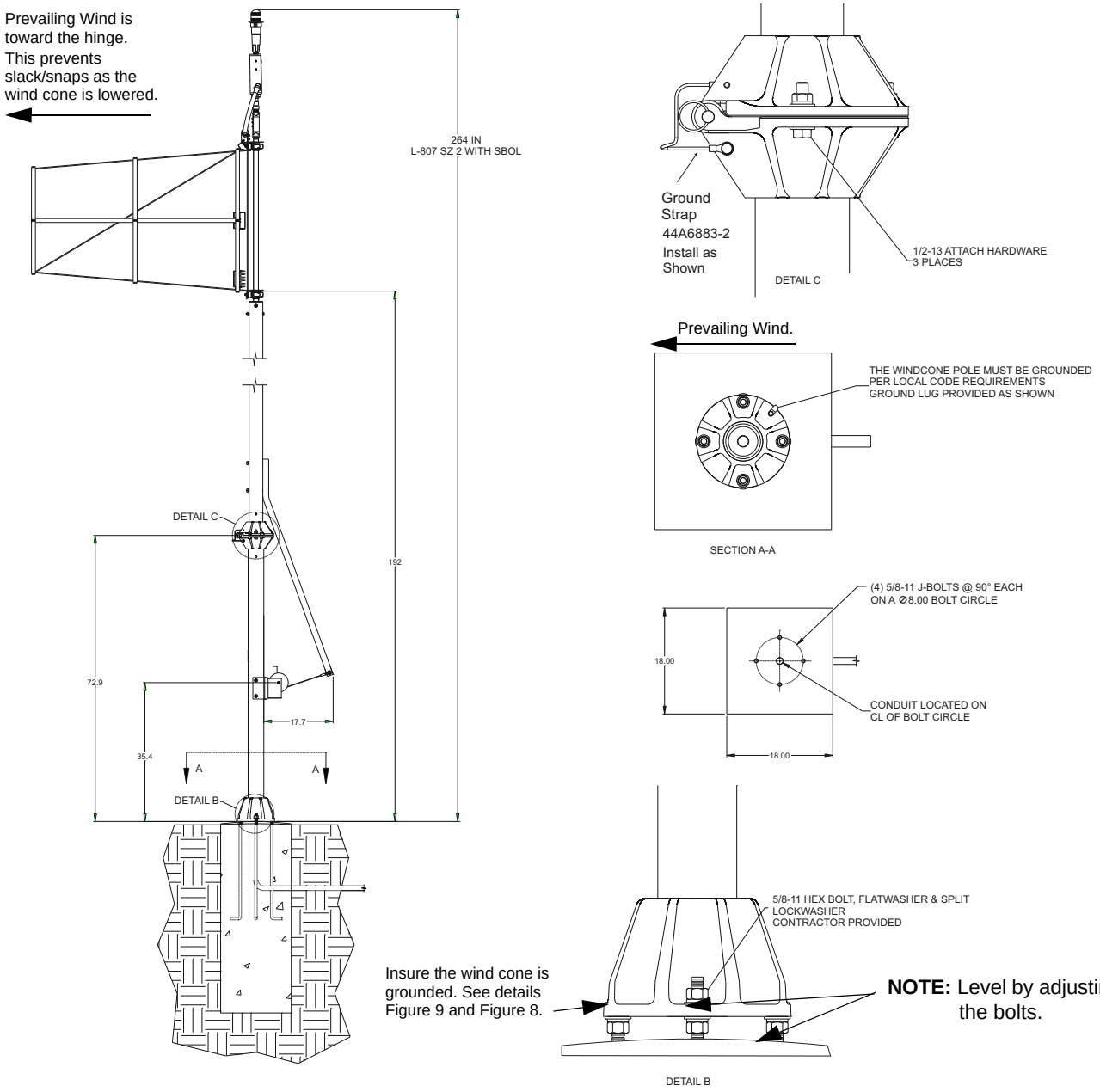


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Figure 6: 44A6683-2

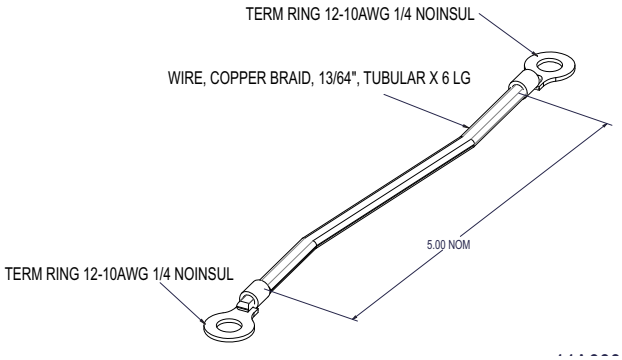
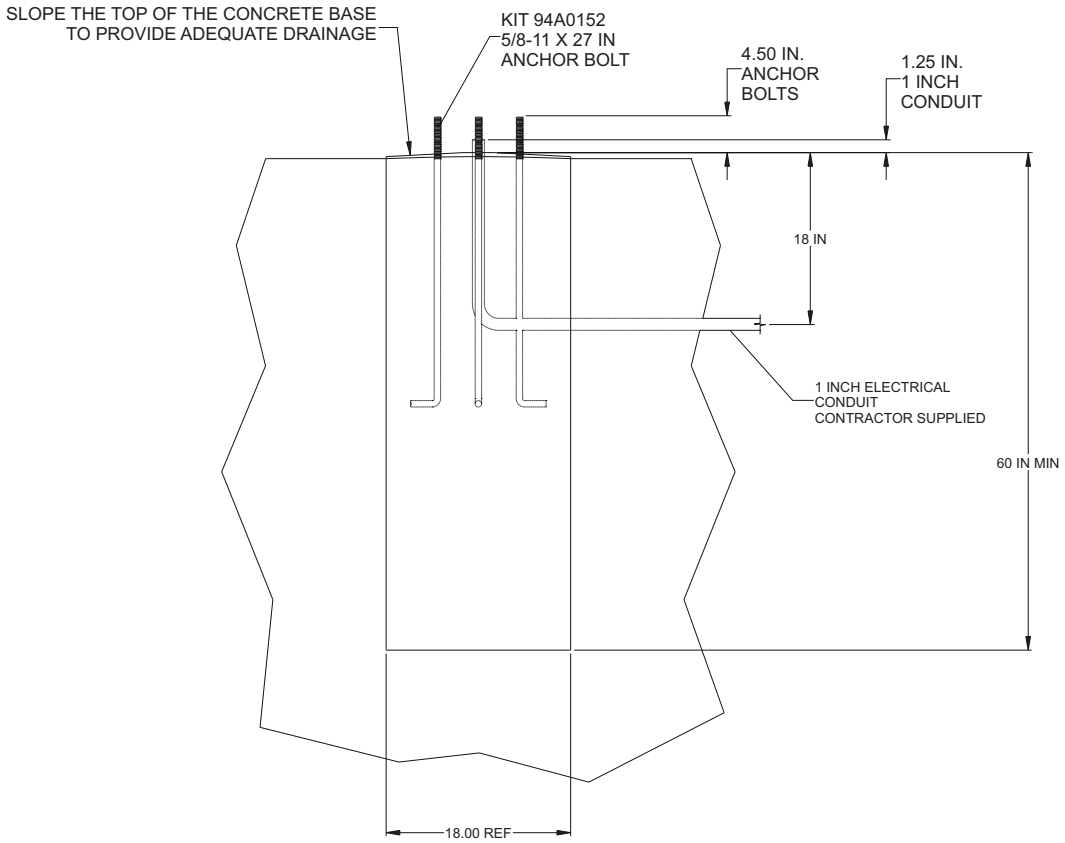


Figure 7: Installing the Pole Support Base



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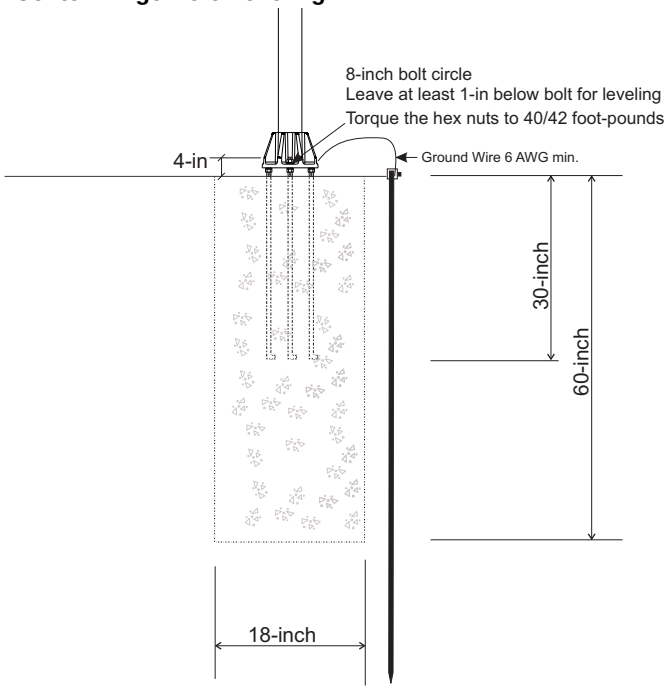
Insure there is room to adjust the nuts to level the pole. Use the eight nuts to level the pole.

Figure 8: Center Hinge-Pole Leveling



3.4 Assembly Procedures

This subsection describes procedures for installing the assemblies listed below.

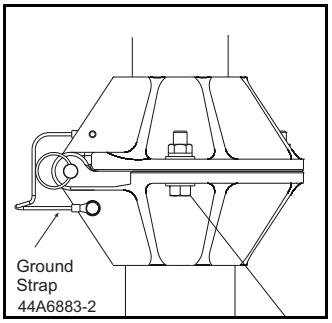
- L-807 wind cone
- Sock lighting assembly
- Optional sock lighting assembly and obstruction light
- Optional obstruction light only

3.4.1 L-807 Center Hinge-Pole Assembly

NOTE: Check the packing list with the parts list to verify that all parts are present before proceeding. Refer to the *Parts* section for part numbers.

To assemble the L-807 wind cone, perform the following procedure:

Install the pole assembly by performing the following procedure:



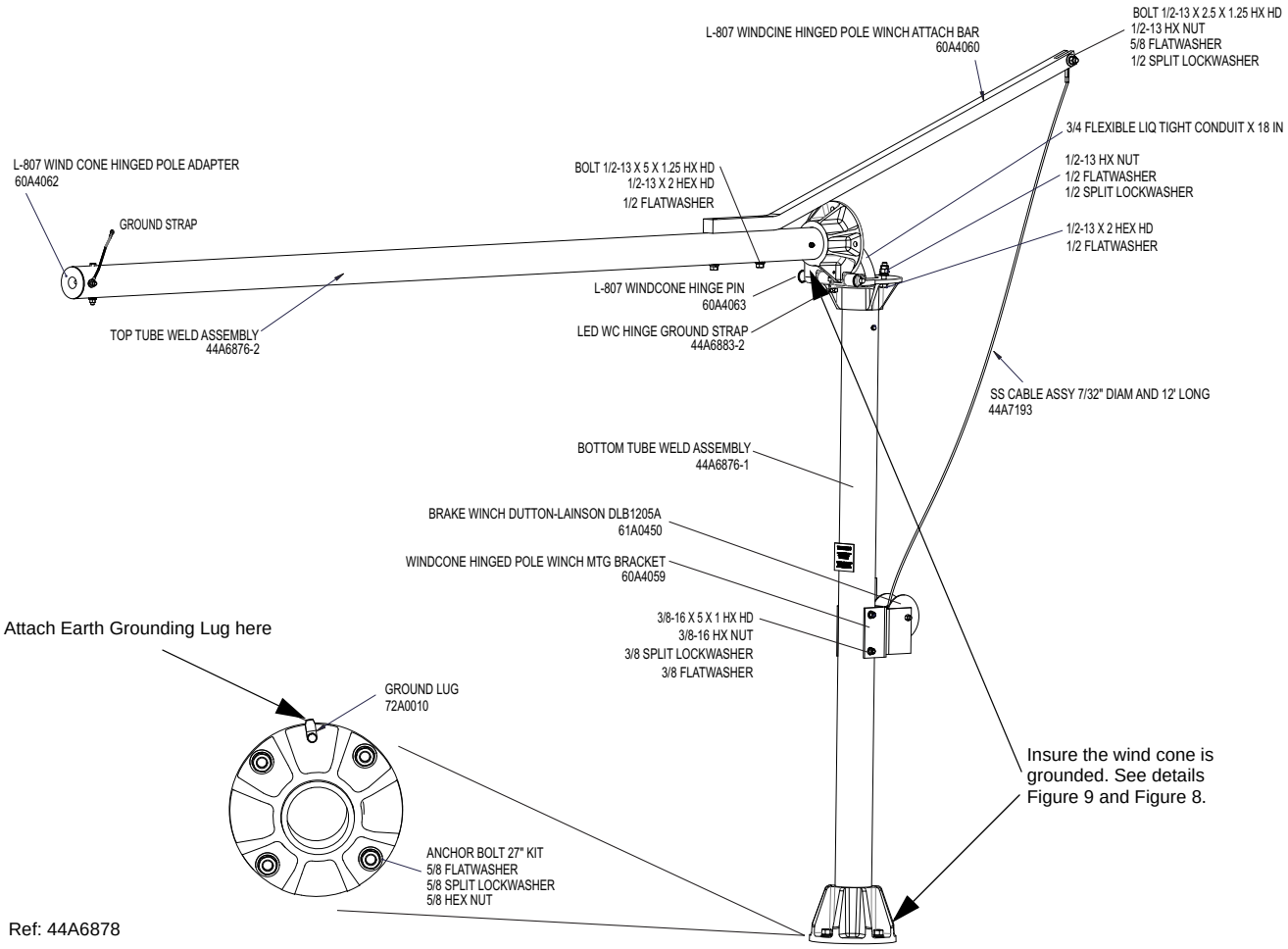
NOTE: Coat threads with anti-seize paste

1. See Figure 9. Bolt the L-807 lower hinge-pole base onto the foundation.
2. Level the base and tighten the mounting bolts.

CAUTION

See Figure 7. If the concrete pad is sloped, for example, to drain water away from the anchor bolts, place contractor-supplied shims under the plate to prevent the plate from being stressed during installation on the pad. Failure to use shims, if the pad is sloped or tapered, could cause the base plate to crack immediately, or in the future, after tightening the four mounting hex nuts on the anchor bolts.

Figure 9: Assembling Wind Cone – typical all center hinge-pole styles



Installation

3. Connect the center hinge-pole top and bottom assemblies.
4. Pull the wires up through the flexible conduit and through the top of the hinge-pole assembly. With the pole lowered, there should be 8 to 10-inches (200 mm - 254 mm) of slack in the cable.
5. Assemble the winch and cable assembly.

   NOTE: Use the appropriate wiring information in “Schematics ” on page 32 for external wiring guidance. The wind cone hinge ground strap must be installed. The wind cone must be Earth grounded at the base. See “Grounding the Wind Cone Pole” on page 24.
6. Prepare the wind cone assembly. See: “Assembling Wind Cone Sock Cage” on page 15.

3.4.2 L-807 Bottom Hinge-Pole Assembly

NOTE: Check the packing list with the parts list to verify that all parts are present before proceeding. Refer to the *Parts* section for part numbers.

Install the pole assembly by performing the following procedure:

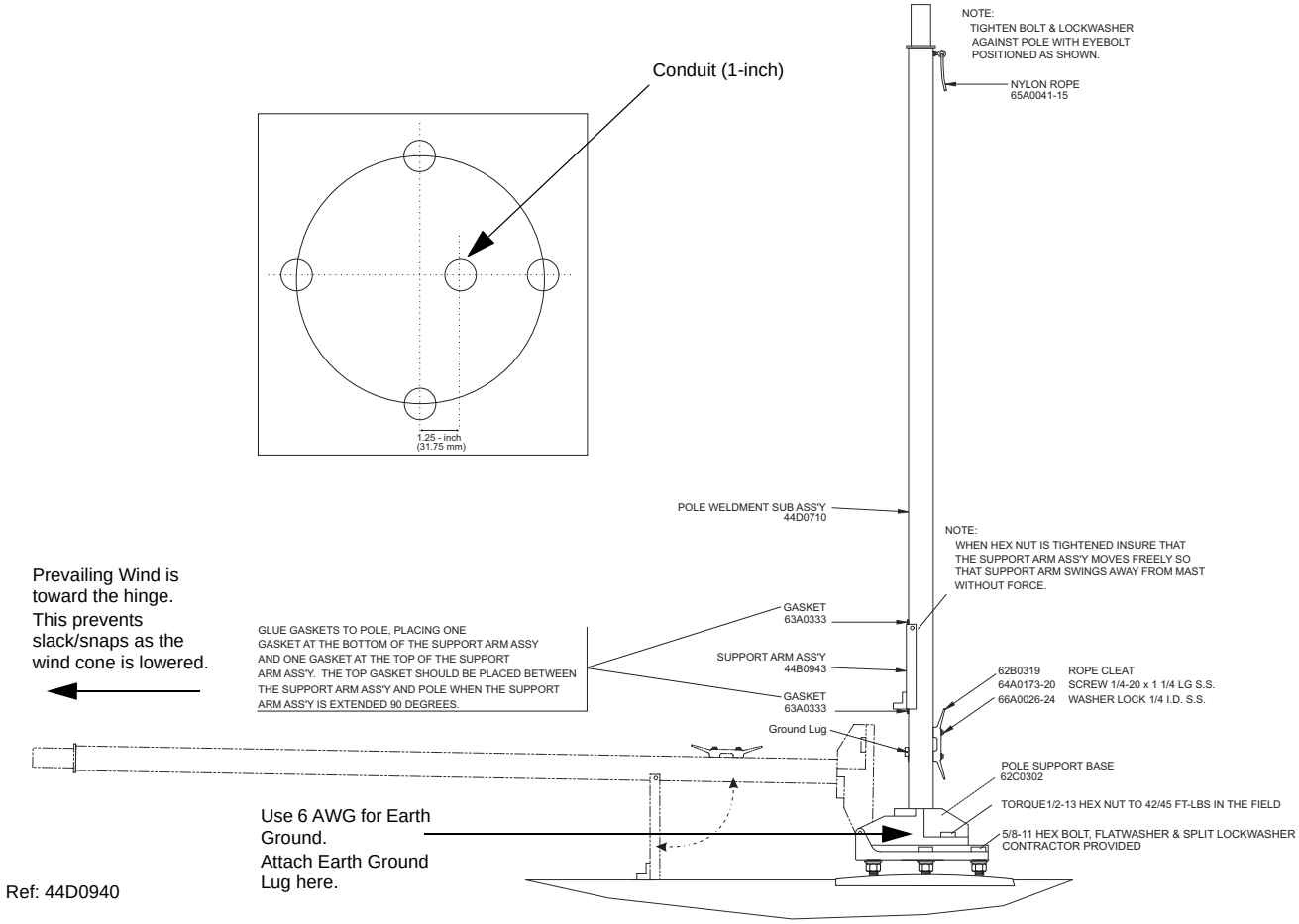
NOTE: Coat threads with anti-seize paste.

1. See Figure 10. Bolt the L-807 bottom hinge-pole base onto the foundation.
2. Level the base and tighten the mounting bolts.

CAUTION

See Figure 7. If the concrete pad is sloped, for example, to drain water away from the anchor bolts, place contractor-supplied shims under the plate to prevent the plate from being stressed during installation on the pad. Failure to use shims, if the pad is sloped or tapered, could cause the base plate to crack immediately or in the future after tightening the four mounting hex nuts on the anchor bolts.

Figure 10: Assembling Wind Cone – bottom hinge-pole styles



3. Pull the wires up through the flexible conduit and through the top of the pole assembly. Leave several feet of wire to connect the wind cone cage assembly and lights.
4. Connect the tether, if used.
5. Connect the raising cord and hardware.

NOTE: Use the appropriate wiring information in “Schematics ” on page 32 for external wiring guidance. The wind cone must be Earth grounded at the base. See “Grounding the Wind Cone Pole” on page 24.

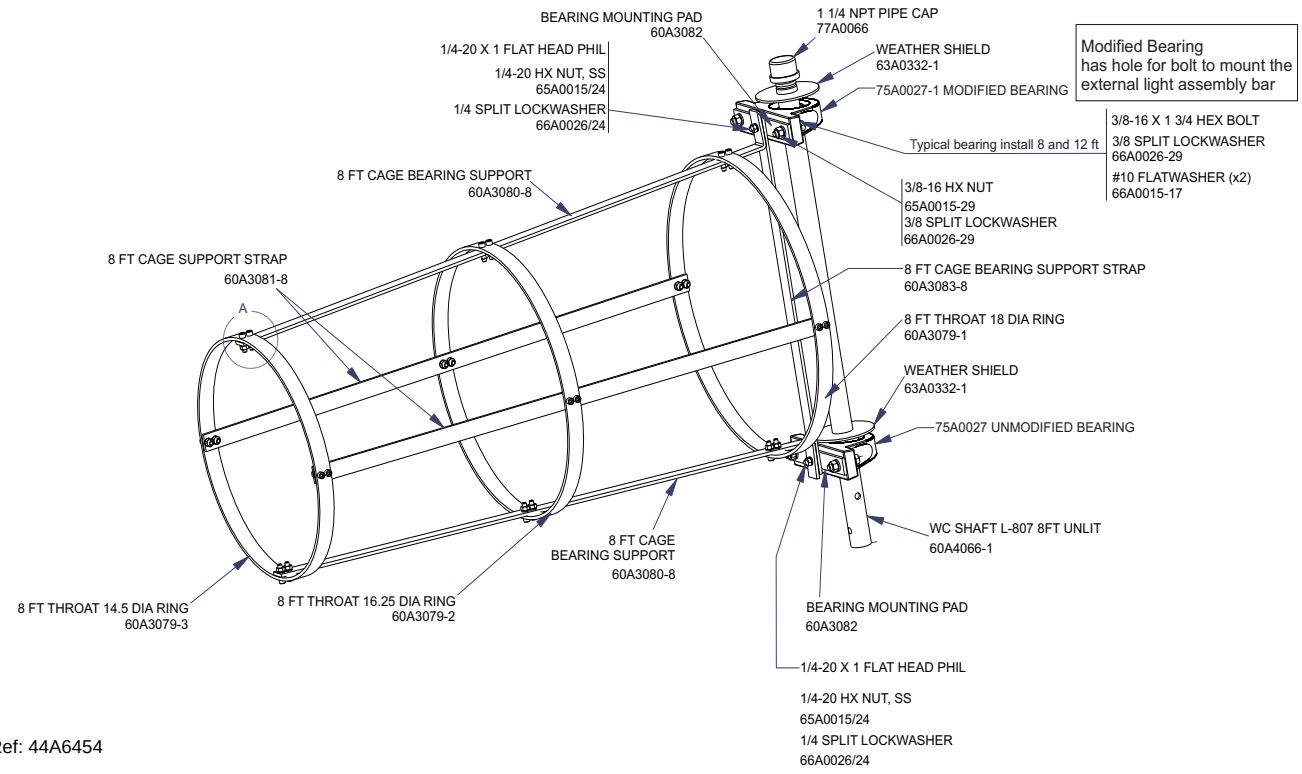
6. Raise the pole and then lower it, to insure proper operation.
7. Prepare the wind cone assembly. See: “Assembling Wind Cone Sock Cage” on page 15.

3.4.2.1 Assembling Wind Cone Sock Cage

The sock cage assembly is comprised of the following items: throat ring, mid ring, trail ring and associated connector straps. Assembling these items together is accomplished by using the ¼-20 x 7/8 Long, Socket Button Head screws, ¼ lock washer, and ¼-20 hex nut, mounting hardware supplied.

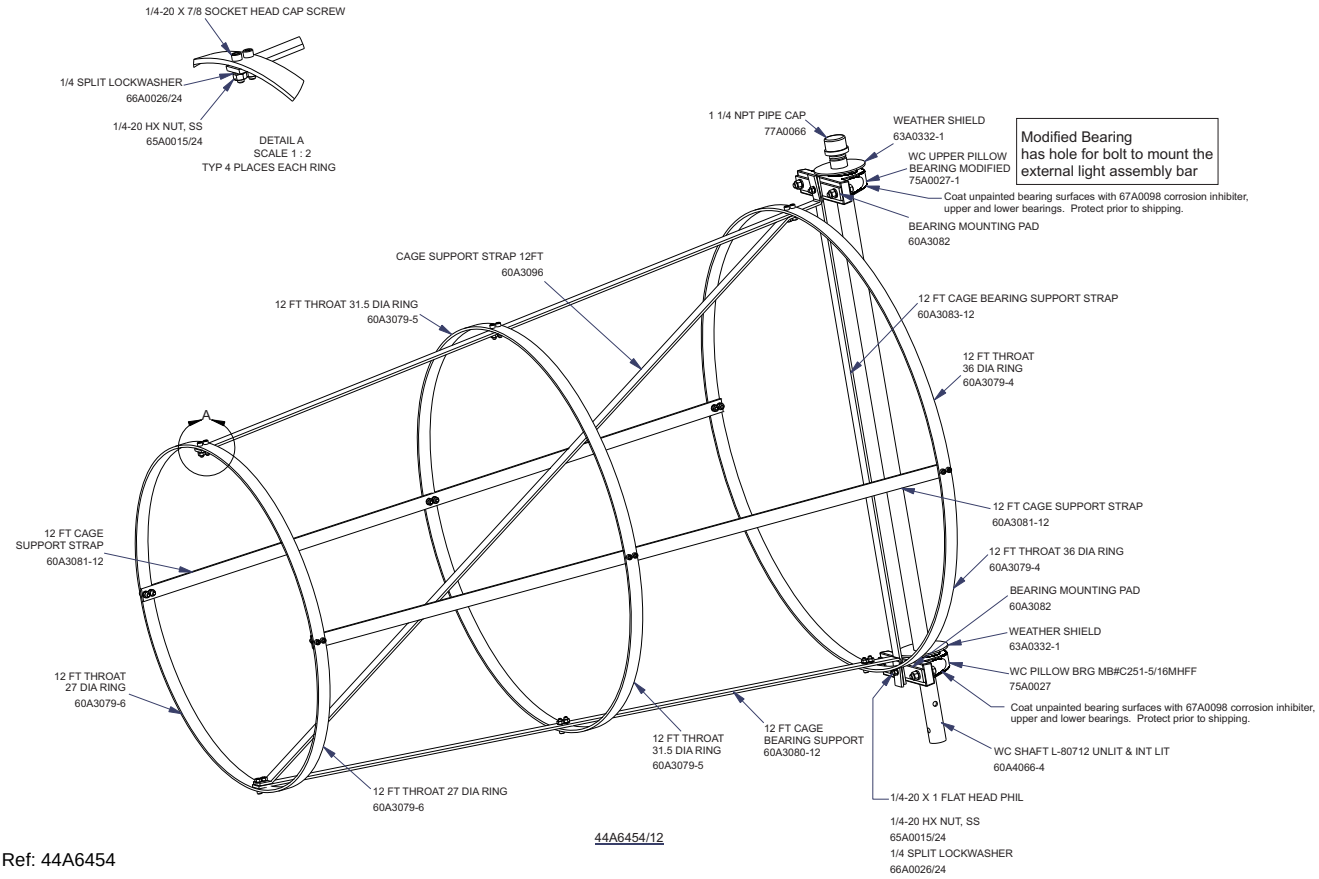
1. Fasten the two bearing L-shaped support straps to the throat ring (the largest diameter ring) using the pre-drilled holes in the ring and the strap. Install the “L- end” of the two straps to the throat ring 180 degrees apart. Turn the short leg of the strap outward. Tighten all screws and nuts.
2. Fasten the mid ring (next smallest diameter ring) to the next set of holes in the bearing support straps away from the throat ring. Tighten all screws and nuts.
3. Fasten the trail end ring (smallest diameter ring) to the far end of the strap. Tighten all screws and nuts.
4. Fasten the other two straight support straps to all three rings by using the remaining holes in each of the rings. Tighten all screws and nuts.
5. Next fasten the bearing mounting plate at right angles to the bearing support strap and fasten these to items to the L-shaped support strap using a ¼-20 flat head screw and hex nut. Tighten the flat head screw and nut. Place the bearing on the mounting pad with the shaft collar where the set screws are located, pointing toward the center line of the cage, and fasten with the 3/8-16 screw, heavy flat washer, and 3/8-16 hex nut. Tighten all hardware.

Figure 11: L-807 - 8 ft WC Cage Assembly Diagram



Ref: 44A6454

Figure 12: L-807 - 12 ft WC Cage Assembly Diagram



Ref: 44A6454

3.4.2.2 Assembling the Cage Assembly to the Shaft

1. See Figure 11
2. Slide the first bearing onto the shaft followed by a weather shield onto the shaft. Push the seal down against the bearing. Slide the next bearing followed by a weather shield. Push the shield down against the bearing. Separate the two bearings so that the wind cone cage assembly can be fastened to the L-Shaped straps on the cage assembly. Using the mounting hardware supplied, fasten the cage assembly to the bearings. Tighten all screws and nuts.
3. Position the cage assembly so the first bearing is within 1/8 inch of the weather shield that is installed on top of the pole adapter. Tighten the set screws found in the bearing collar against the shaft.

3.5 Internally Lighted LED Wind Cone Kit Installation

This subsection describes installation procedures for the internally lighted wind cone using LED's powered by either a series circuit or an external voltage source. The L-810 and the LED light engines are to be connected using the appropriate wiring schematic within the rotating power supply. See Figure 19, Figure 20 and Figure 13.

To install the LED internally lighted wind cone kit, perform the following:

3.5.1 Installing Rotary Power Assembly

1. Assemble the wind cone by completing steps 1 through 6 in sub-section "Assembly Procedures" on page 12. See Figure 9.

NOTE: Do not install the Rotary Power Assembly onto the shaft until the shaft has been installed through both bearings and the bearings have been attached to the wind cone cage. Insure that the bearing weather seals are installed correctly when the bearings are installed on the shaft.

Figure 13: Installing Internally Lighted LED Rotary Power Assembly and LED Light Engine Assemblies

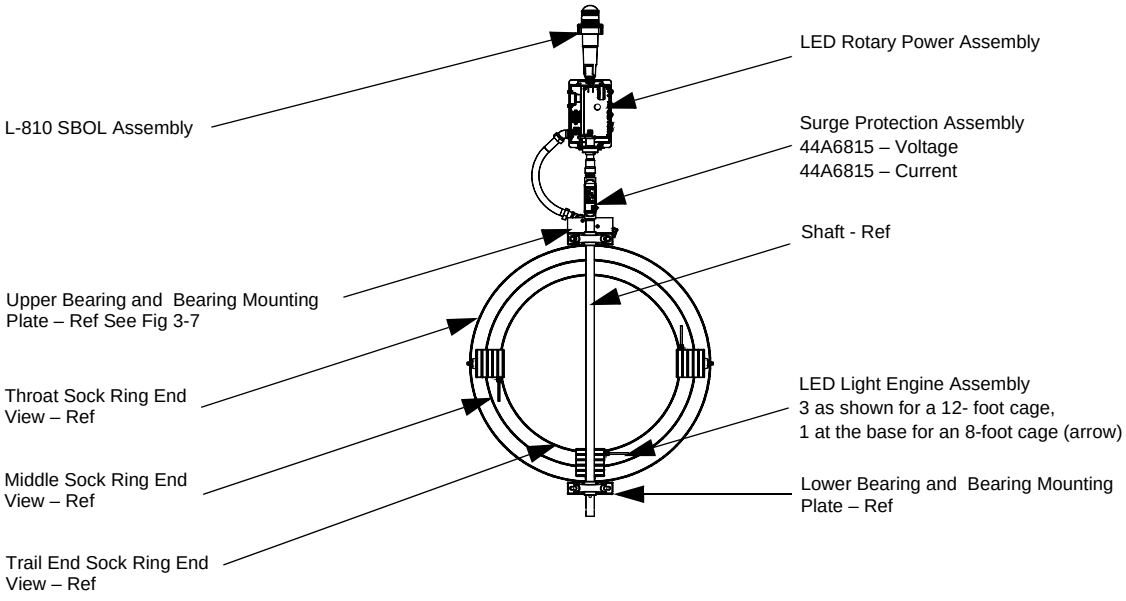
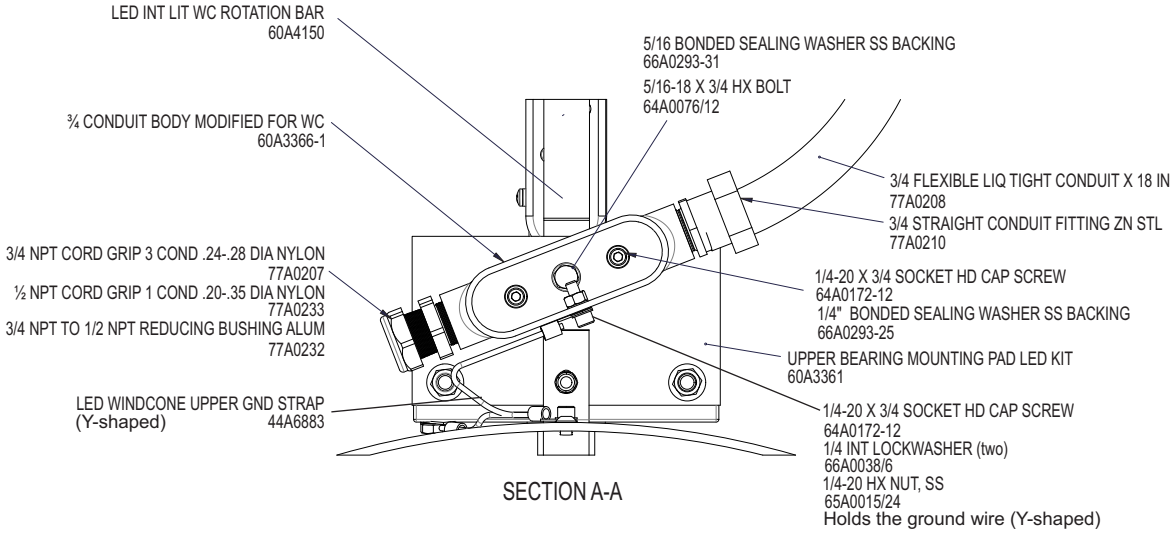
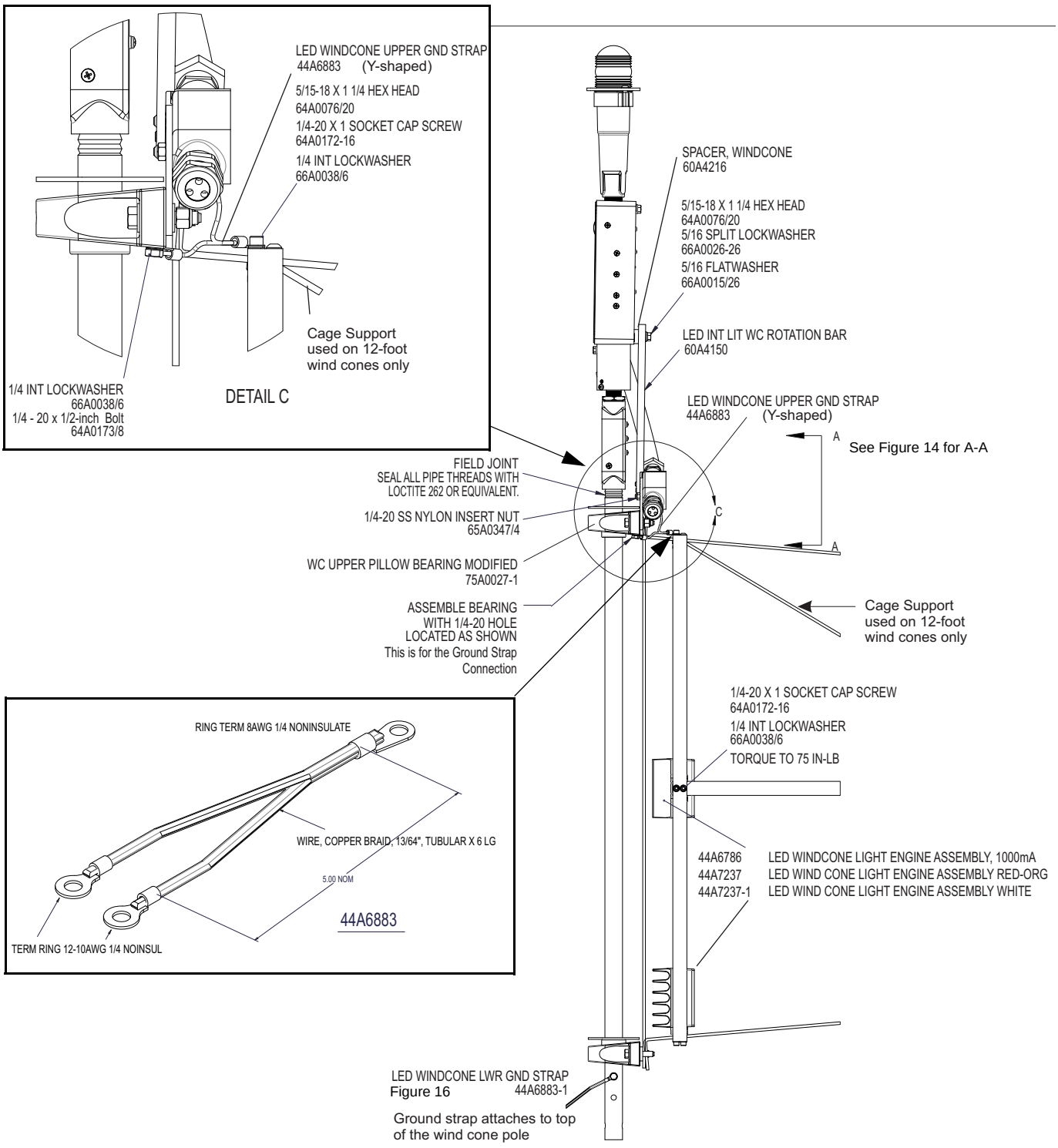


Figure 14: Installing Internally Lighted Special Bearing Mounting Plate



2. Mount the special Bearing Mounting Plate (See Figure 14) supplied with the Internal Light Kit along with the L-Shape Cage Strap, to the top of the throat ring.

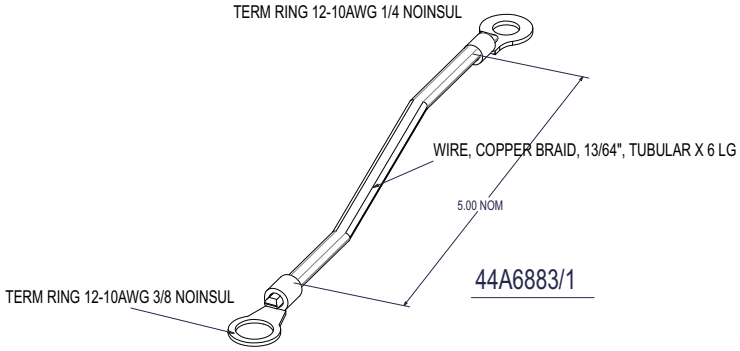
Figure 15: Internally Lit Wind Cone Assembly Details



3. Pull wires through the wind cone pole so that you can feed a sufficient length of wire into the Rotating Power Enclosure. Leave some slack required to raise and lower the wind cone. See Figure 27 through Figure 35 for wiring details.

4. Remove the access lids from the Rotating Power Enclosure (RPE) Assembly and the conduit fitting (See Figure 14). Screw the RPE assembly onto the top of the shaft and make connections according to the schematics for the LED voltage or current driven unit. If needed, attach the L-810 SBOL Assembly to the top of the Rotating Power Enclosure and make connections per the wiring schematics.

Figure 16: Ground Strap 44A6683-1



3.5.2 Installing the Internal LED Light Assembly

5. Install each of the LED Light Assemblies on the Throat Ring of the sock cage. The light assemblies are to be installed at 90, 180, and 270 degrees on the circumference of the throat ring for 12-foot and just one at the base for and 8-foot wind cone (Ref Figure 15).
6. First, start at the 90 degree position and remove the two screws that secure the cage support strap to the throat ring. Mount the light engines by placing the hub on the side of the LED engine enclosure against the cage support strap and the throat ring. Use the two removed screws to mount the LED Engine Assembly. Tighten the screws.

NOTE: The hub on the side of the LED Light Engine enclosure indexes and aims each of the LED Engines correctly.

Repeat this process for each of the LED Light Engine Assemblies.

Second, after all of the light engines have been installed, route each of the cables from the enclosure along the edge of the throat ring up to the conduit fitting at the top of the cage. Use supplied wire tie wraps to secure the cables to the throat ring. Insert the cable through the 3-hole grommet in the end conduit fitting.

7. Connect the cable leads per the wiring schematics. See Figure 27 through Figure 35 for wiring details.
8. Complete installation of wind cone pole. Refer to “L-807 Center Hinge-Pole Assembly” on page 12 or the “L-807 Bottom Hinge-Pole Assembly” on page 14.

3.6 Externally Lighted LED Wind Cone Kit Installation

This subsection describes installation procedures for the externally lighted wind cone using LED's powered by either a series circuit or an external voltage source. The L-810 and the LED light engines are to be connected using the appropriate wiring schematic within the rotating power supply.

To install the LED externally lighted wind cone kit, perform the following:

3.6.1 Installing Rotary Power Assembly

1. Assemble the wind cone by completing steps 1 through 16 in sub-section "Assembly Procedures" on page 12. See Figure 9.

NOTE: Do not install Rotary Power Assembly onto the shaft until the shaft has been installed through both bearings and the bearings have been attached to the wind cone cage. Insure that the bearing weather seals are installed correctly when the bearings are installed on the shaft.

Figure 17: Installing Externally Lighted LED Rotary Power Assembly and LED Light Engine Assemblies

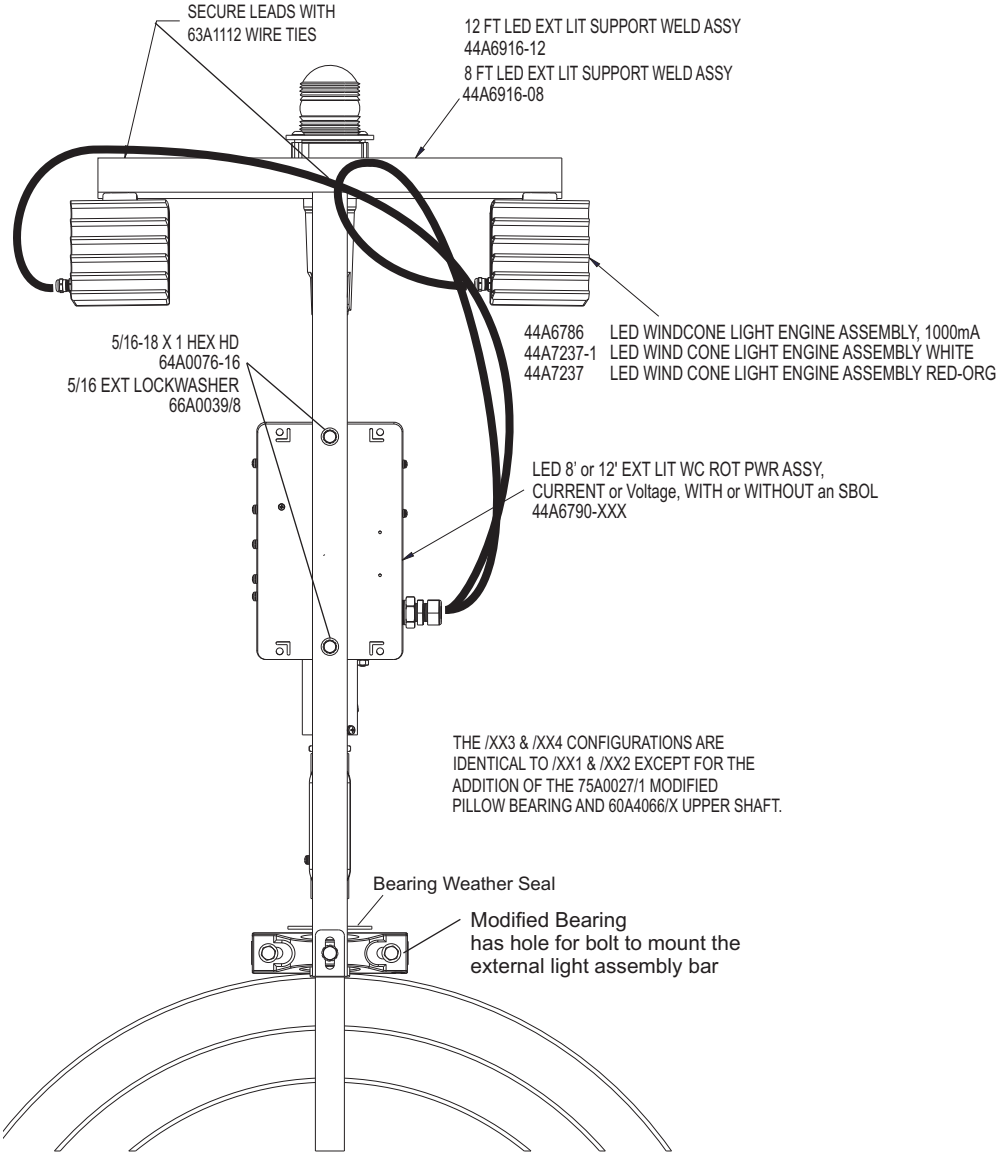
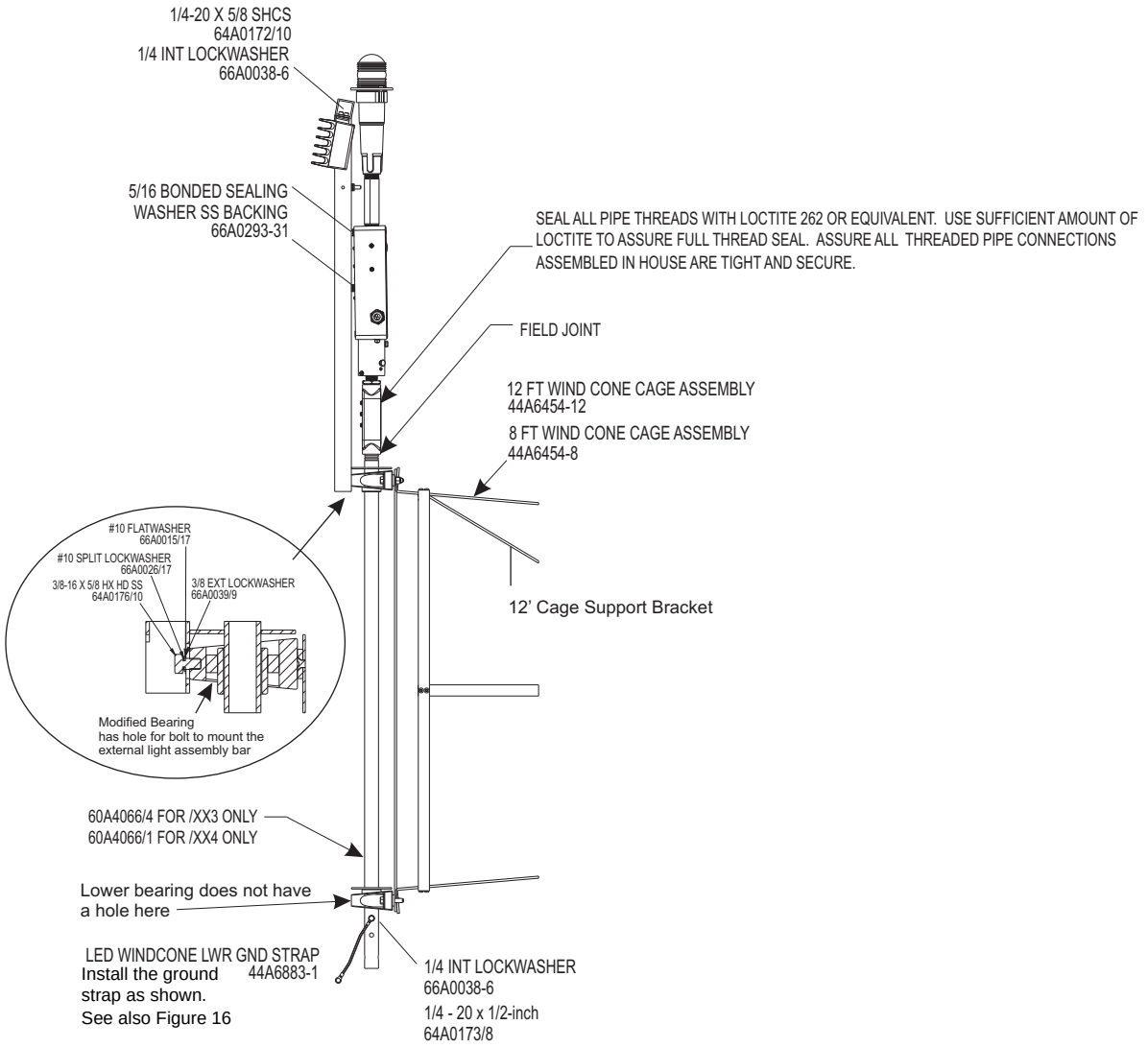


Figure 18: Installing Externally Lighted Assembly Details



2. Mount the Bearing Mounting Plate (See Figure 18) supplied with the External Light Kit along with the L-Shape Cage Strap, to the top of the throat ring.
3. Pull wires through the wind cone pole so that you can feed a sufficient length of wire into the Rotating Power Enclosure. Leave some slack required to raise and lower the wind cone. See Figure 27 through Figure 35 for wiring details.
4. Remove the access lids from the Rotating Power Enclosure (RPE) Assembly and the conduit fitting (See Figure 17). Screw the RPE assembly onto the top of the shaft and make connections according to the schematics for the LED voltage or current driven unit. If needed, attach the L-810 SBOL Assembly to the top of the Rotating Power Enclosure and make connections per the wiring schematics.

3.6.2 Installing the External LED Light Assembly

5. Install each of the LED Light Assemblies on the external support bars. The light assemblies are to be installed at facing the wind cone cage assembly.
6. Use the two screws shown in Figure 18 to mount the LED Engine Assembly. Tighten the screws.

NOTE: The hub on the bottom of the LED Light Assembly enclosure indexes and aims each of the LED Engines correctly.

Repeat this process for each of the LED Light Engine Assemblies.
Insure that the Lower Ground Strap is connected as shown in Figure 17.

Installation

Second, after all of the light engines have been installed, route each of the cables from the enclosure along the external support bar to the conduit fitting at the top of the cage. Use supplied wire tie wraps to secure the cables to the support bar. Insert the cable through the 2-hole grommet in the end conduit fitting.

7. Connect the cable leads per the wiring schematics. See Figure 27 through Figure 35 for wiring details.
8. Complete installation of wind cone pole. Refer to “L-807 Center Hinge-Pole Assembly” on page 12 or the “L-807 Bottom Hinge-Pole Assembly” on page 14.

3.7 Assembling Wind Cone Shaft into Wind Cone Pole

NOTE: If you are assembling an externally lighted wind cone, place a saw horse near where the end of the shaft will be located to help support the shaft before inserting the shaft with cage assembly into the pole.

1. Insert the shaft adapter into the end of the pole and align the 2-sets of cross drilled holes in the adapter with the mating holes in the pole. Align the cross drilled holes and insert the 3/8 – 16 hex bolts. Torque hex bolts and hex nuts to 236 In-bs (19.7 Ft-lbs).
2. Install the first weather seal over the shaft and it push down against the pole adapter that is fastened to open end of the pole.

Figure 19: Wind Cone Cage Assembly on the Pole Assembly

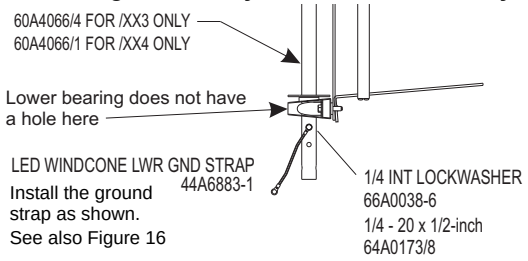
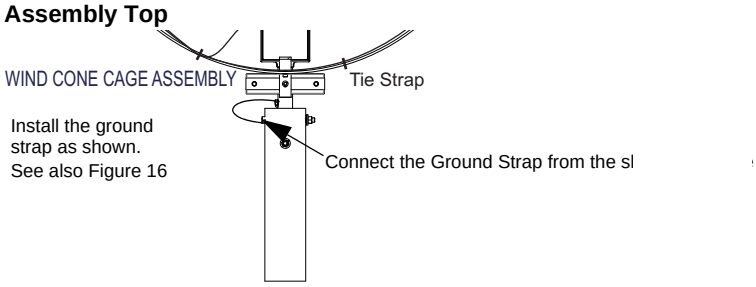


Figure 20: Pole Assembly Top



3.8 Attach the Windsock

1. Slip the wind sock over the cage assembly and align the drain grommets in the wind sock to face down when the wind cone assembly is raised to the vertical position. Attach the sock to the throat ring by inserting plastic tie-wraps through the grommets in the sock throat and then around the cage throat ring. Pull the tie-wraps tight and trim off excess tie-wrap.

NOTE: The bearings are greased at factory. If greasing becomes necessary use only a small amount as over-greasing will make the bearings sluggish and will require more wind to cause the sock cage to vane when the wind blows. A rust-inhibited, water-resistant, lithium-based grease is recommended. In extremely cold climates, wind cone movement may become sluggish. Replace grease with low temperature lubricant. On unlighted cones without the L-810 obstruction light, install pipe cap on the end of the bearing shaft and the bearing cage shaft.

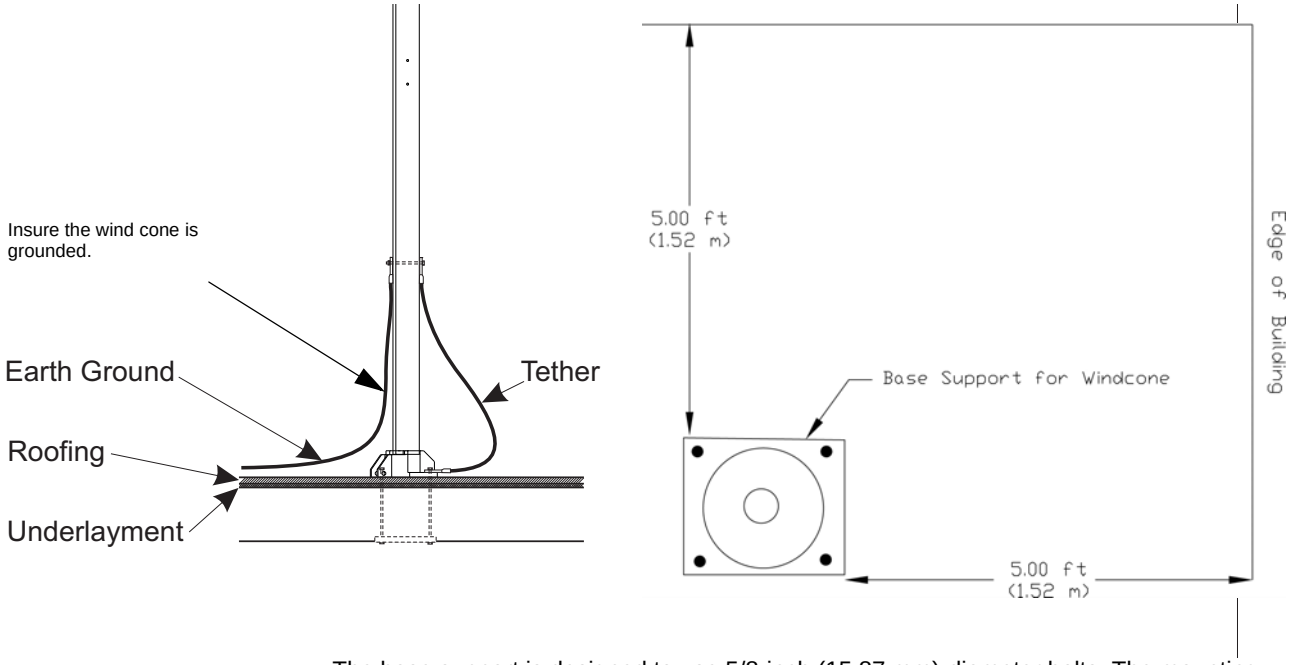
2. Slip the wind sock over the cage assembly and align the drain grommets in the wind sock to face down when the wind cone assembly is raised to the vertical position. Attach the sock to the throat ring by inserting plastic tie-wraps through the grommets in the sock throat and then around the cage throat ring. Pull the tie-wraps tight and trim off excess tie-wrap.
3. Raise the Wind Cone and bolt into place.

3.9 Optional Roof Mounting

This subsection discusses optional roof mounting.

See Figure 13. The contractor needs to verify the structural integrity of the roof where the wind cone base support is to be mounted. Depending upon the composition of the roof and existing structural members, additional re-enforcement may be needed to make sure that the wind cone can be securely anchored to the roof.

Figure 21: Wind Cone Roof Installation



The base support is designed to use 5/8-inch (15.87 mm)-diameter bolts. The mounting hardware is supplied by the contractor. See Figure 14 and Table 3.

3.10 Tether Mounting

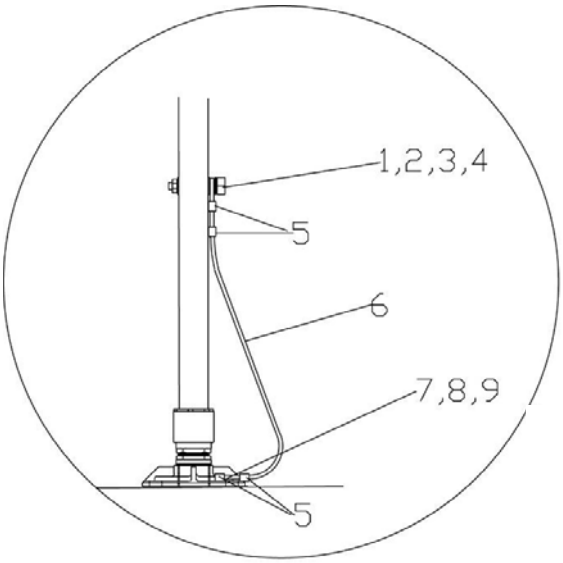
For roof mounting.

Table 3: Parts Required for Tether Installation

Item	Description	Quantity	Note
1	Eyebolt, forged and threaded, 3/8–16 x 3.0 long, galvanized or stainless steel	1	A
2	3/8 flat washer	1	A
3	3/8 lock washer	1	A
4	3/8–16 hex nut	1	A
5	Wire rope clips, forged galvanized or stainless steel for 3/16 wire rope	4	A
6	3/16-in.- (4.76 mm-) diameter tether, using 7 x 7 x 19 stranded stainless steel cable 6 feet (1.83 m) long	1	A
7	5/8 flat washers	4	A
8	5/8 bolts or studs	4	A
9	5/8 lock washers	4	A
10	5/8 nuts if studs are used	4	A

NOTE A: Supplied by contractor

Figure 22: Tether Installation



When mounting the L-807 wind cone on a roof, a tether must be installed. See Figure 22. Refer to Table 3 for tether installation parts. To install a tether (contractor-supplied), perform the following procedure:

1. After the wind cone pole and base have been bolted to the roof, install the eyebolt (1) through a 1/2-inch drilled hole in the wind cone pole.
2. Secure the eyebolt with flat washer (2), lock washer (3), and hex nut (4).
3. Loop one end of the tether (6) through the eyebolt and secure the tether loop with two rope clips (5).
4. Install the other end of the tether by first looping the end of the tether to fit a 5/8-in.-diameter bolt (8).
5. Secure the loop with two rope clips (5).
6. Insert one 5/8-in. flat washer (7) and then one 5/8-in lock washer (9) over one of the 5/8-in.-diameter fasteners (bolt or stud) (8) used to anchor the base to the building.

CAUTION

A tether must be used if the wind cone is installed on top of a building or other structure.

3.11 Grounding the Wind Cone Pole

Ground the wind cone pole in accordance with national and local electrical codes.

When roof mounting, always use an approved braided cable. The ground cable should be 10% longer than the tether, if used, to maintain proper grounding.

Insure that a ground wire is connected to the wind cone pole. See Figure 8.

An example of a:

- Bottom hinge pole is shown in Figure 9.
- Center hinge pole is shown in Figure 10.

3.12 Installation of FAA Light Bases – PA4 and L-830/831 Applications

This subsection describes installation of FAA Light Bases when power is supplied from a field series circuit to the lighted wind cone.

If incandescent lighting is used for an internally or externally lighted (120Vac) wind cone and an ADB PA4 Power Adapter is used, install a FAA L-867D Light Base. Remotely locate the light base from the wind cone foundation and run conduit from the field circuit to the light base and from the light base to conduit used in the wind cone foundation. See Figure 5 and Figure 7.

If LED lighting is used for an internally lighted wind cone from a field series circuit install a FAA L-867B Light Base. Remotely locate the light base from the wind cone foundation and run conduit from the field circuit to the light base and from the light base to the conduit located in the wind cone foundation. Connect the field circuit to the primary leads of the L-830/831 isolation transformer and connect the wind cone leads to the secondary of the isolation transformer using a secondary connector kit.

4.0 Maintenance

To keep L-807 wind cones operating efficiently, follow a preventive maintenance schedule. Follow the guidelines discussed below. Refer to FAA AC 150/5340-26 for more detailed information.

Table 4: Maintenance Schedule

Maintenance Requirement	DAILY	WKLY	MTHLY	BIMHY	SMANY	ANNLY	UNSCH
1.Check lamp/LED operation.	X						
2.Check photocell operation, if applicable.	X						
3.Check for freedom of motion of wind cone frame.			X				
4.Check condition of wind cone fabric.			X				
5.Check lamp age for scheduled replacement.				X			
6.Clean glassware.				X			
7.Check paint on segmented circle.				X			
8.Clean and grease bearings.					X		
9.Read insulation resistance of incoming wires.					X		
10.Check mounting bolts. Insure they are properly torqued.						X	
11.Check wiring at hinge.						X	
12.Check grounding system resistance.						X	
13.Check paint on wind cone structure.						X	
14.Remove vegetation and check condition at foundation.							X

4.1 Lighted Wind Cones

To maintain lighted wind cones, follow the guidelines below.

4.1.1 Lubrication

To lubricate wind cones, follow the guidelines below.
Grease both bearings on the cage assembly through the grease fittings on bearings. A rust inhibited, water resistant, lithium-based grease is recommended.

NOTE: In extremely cold climates, wind cone movement may become sluggish. Replace grease with low-temperature lubricant.

Inspect bearing weather shield. If shield is cracked, deformed, or missing, replace with new weather shield. Weather shield can be made locally using 1/8-in.-thick (3.175 mm), 70 durometer neoprene rubber.

4.1.2 Structure

To maintain the wind cone structure, follow the guidelines below.

Check all metal parts for wear such as corrosion and cracks. Replace metal parts, if necessary.
Check for flaking paint. Use touch up paint to maintain high visibility and to prevent corrosion.

4.1.3 Wind Cone Sock and Cage

To maintain the wind cone sock and cage, follow the guidelines below.
Check for missing or broken sock ties. Replace sock ties, if necessary.
Check for looseness of the set screws or bolts listed below. Tighten set screws or bolts, if necessary.

- Two set screws for each bearing.
- Four hex head screws holding shaft assembly to pole.
- Eight set screws on each sock ring inside sock.

4.1.4 Wiring

To maintain wiring for the wind cone, check for cracked or frayed power wiring at base plate. Replace power wiring at base plate, if necessary.

4.1.5 Lowering the Pole Assembly

Before lowering the pole assembly, insure that the wind cone does not hit the ground or any other object.

4.1.6 Miscellaneous

Remove bird and/or insect nests or other debris from the wind cone cage.

Make sure drain grommets are located in the bottom side of the wind sock and are clear of debris.

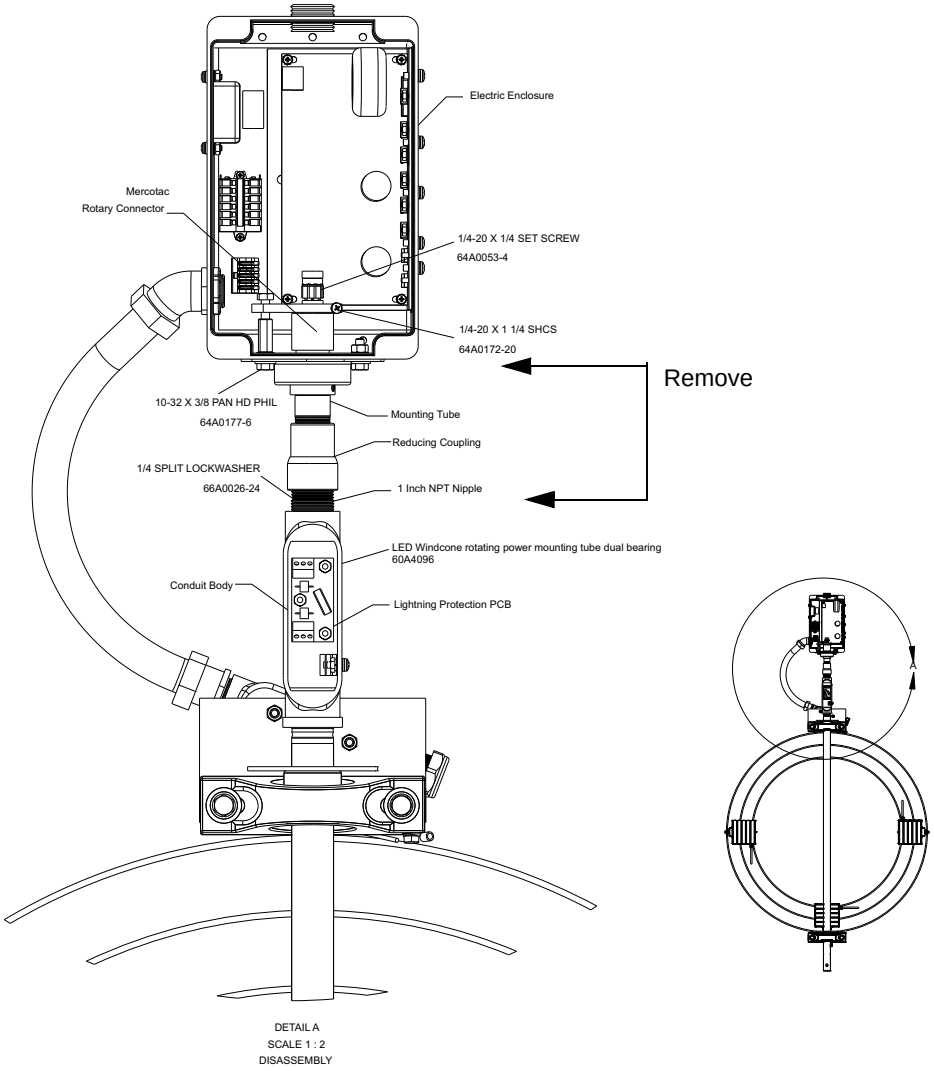
4.2 Rotating Power Supply Bearing Replacement

Read and understand all instructions before working on the wind cone. De-energize the field circuit connected to the wind cone before replacing the bearing. The assemblies can be powered by either a series circuit or a voltage power.

4.2.1 Disassembly Instructions

1. Turn off the power to the wind cone
2. Remove the covers from the electric enclosure and conduit body.
3. Disconnect leads from the lightning protection PCB.
4. Disconnect leads from the Mercotac rotary connector.
5. Loosen screw in rotary connector strain relief. Slide the strain relief off the Mercotac rotating connector.
6. Remove 1/4-20 bolts attaching bearing to electric enclosure and lift enclosure over rotating connector.
7. Loosen #8 set screw at the base of the Mercotac connector and remove the connector and leads from the bearing assembly. Save the connector & leads for reinstallation.
8. Remove the 1 in pipe nipple, the reducing coupling, and the mounting tube from the conduit body.

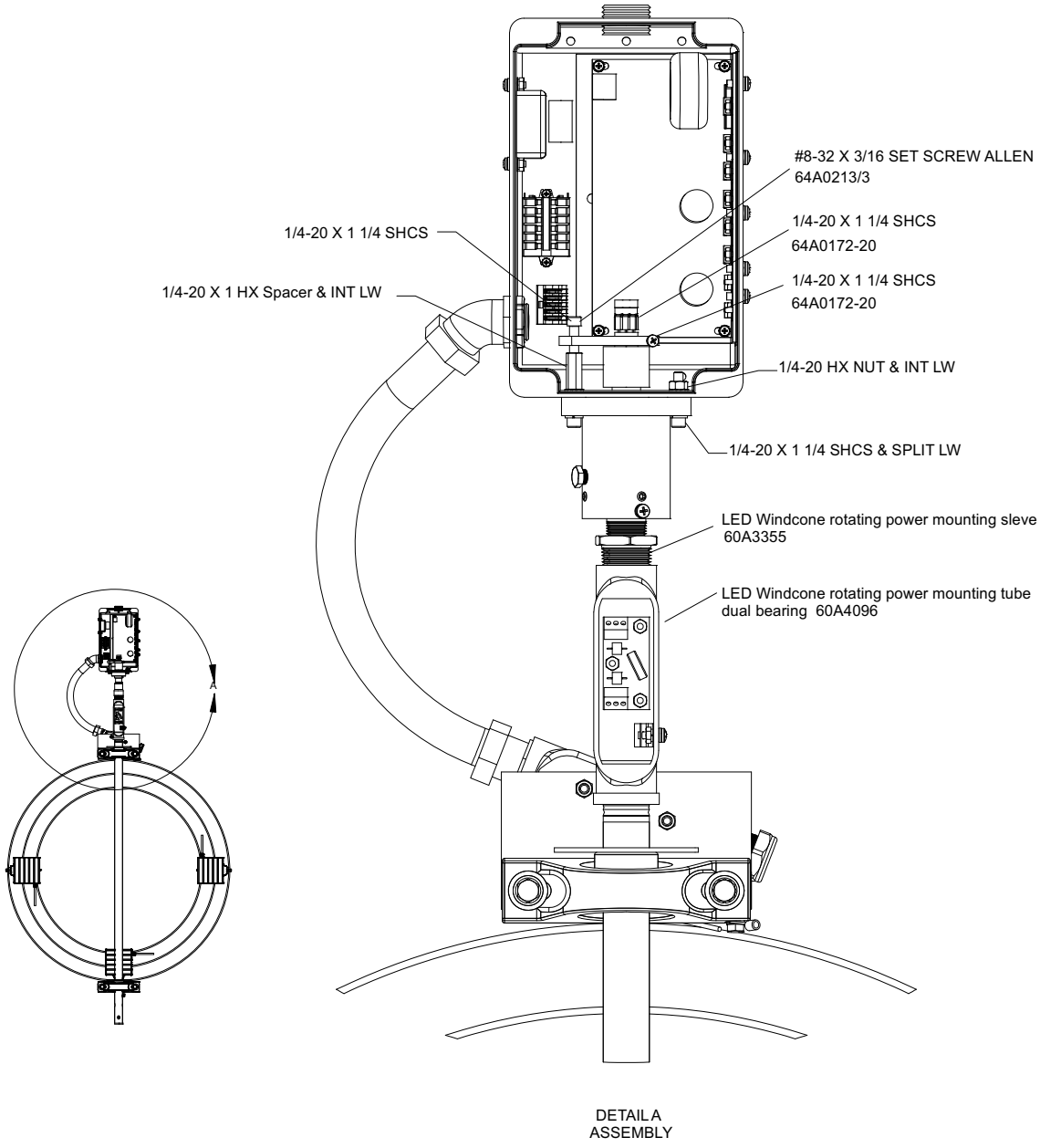
Figure 22: Existing Wind Cone Bearing Removal



4.2.2 Assembly Instructions

1. Insert the Mercotac connector and leads into the 94A0538 retrofit bearing assembly per detail B.
2. Thread 1 NPT bushing into conduit body. Install with pipe thread sealant.
3. Attach leads to lightning protection PCB. See appropriate wiring diagram to assure correct polarity.
4. Mount enclosure on top surface of the dual bearing assembly and install the noted fasteners.
5. Reinstall the rotary connector strain relief - tighten the #8-32 screw.
6. Install the 1/4-20 x 1 1/4 SHCS thru the clearance hole in the rotary connector strain relief.
7. Attach leads to Mercotac rotary connector. Check continuity to determine polarity. See appropriate wiring diagram to assure correct polarity.
8. Replace covers and reconnect power.

Figure 23: Bearing Replacement



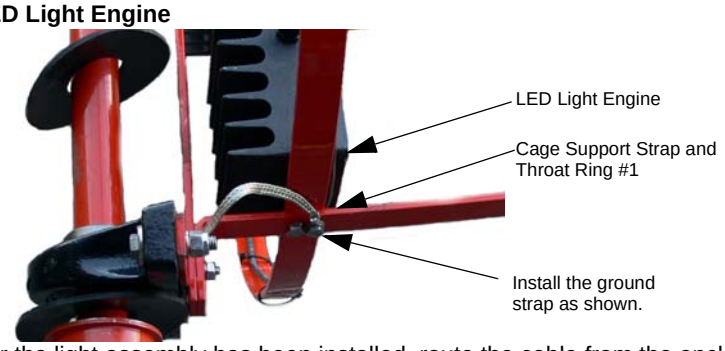
Maintenance

4.3 Replacing an LED Light Assembly

1. Replace the LED Light Assemblies on the largest Throat Ring (#1) of the sock cage. The light engine is to be installed at the bottom of the throat ring (See Figure 24).
2. First, remove the two screws (and retain) that secure the cage support strap to the throat ring #1. Disconnect the wires after carefully noting the wiring.
3. Remove the old light engine.
4. Mount the new light engine by placing the hub on the side of the LED engine enclosure against the cage support strap and the throat ring.
   Use two ¼-20 x 1 socket cap screws and ¼ lock washers to mount the light engine assembly. Tighten the screws.

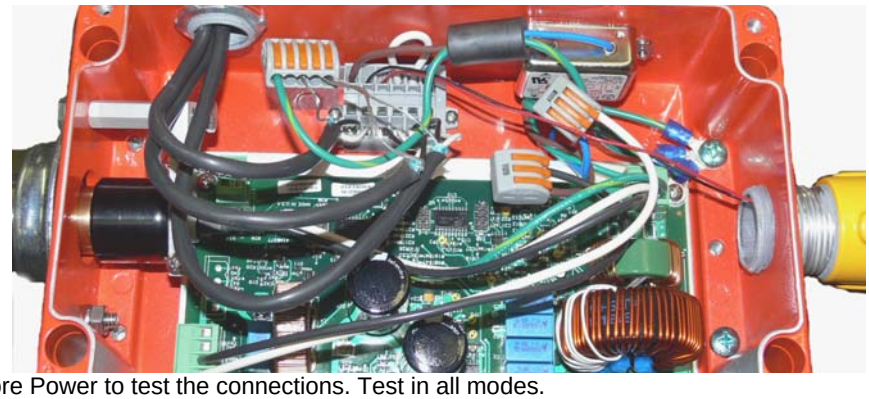
NOTE: The hub on the side of the LED Light Assembly enclosure indexes and aims each of the LED Engines correctly.

Figure 24: LED Light Engine



5. Second, after the light assembly has been installed, route the cable from the enclosure along the edge of the throat ring up to the conduit fitting at the top of the cage. Use wire tie wraps to secure the LED cable to the throat ring. Insert the cable through the grommet in the end of the conduit fitting. See Figure 14 (internally lit) or Figure 17 (externally lit).
6. Connect the LED cable leads per the wiring diagrams. See: “Schematics ” on page 32.
7. Reinstall all enclosure covers and securely tighten screws.

Figure 25: LED Connections



8. Restore Power to test the connections. Test in all modes.
9. Remove power and then upright the wind cone. Tighten all anchors and connections.
10. Restore power.

4.4 Troubleshooting

If any LED's are out or dim, follow the procedure below.

NOTE: Electrical measurements must be made with a True RMS multi-meter.

4.4.1 Voltage powered LED Wind Cone

- Refer to Figure 33 through Figure 36 for voltage powered (95-264Vac) LED wind cones. Visually inspect the Lightning Arrestor PCB for any signs of lightning induced damage. Verify that an Earth ground wire is connected to the base of the pole. Also check to see that all wind cone ground straps are present and that all connections are tight. Replace the Lightning Arrestor PCB if necessary. Verify 95-264Vac is present between the Black and White wires on the input (J2) of the PCB. Replace PCB if necessary.
- Insure the wind cone components are wired properly. In general, all the LED assemblies connected to the output of the PCB are wired in series. Note there is one configuration of the voltage powered wind cone that has the SBOL connected in parallel with the input of the PCB at J2. See the wiring diagrams in Figure 36 for the SBOL wiring connection options.
- Replace the LED wind cone PCB or repair/replace any failing component attached to the output J6.

4.4.2 Current powered LED Wind Cone

- Refer to Figure 27 through Figure 32 for series circuit powered (2.8 – 6.6A) wind cones. Verify that the L-830/L-831 secondary current is greater than 2.7A and less than 6.7A for each CCR step. Correct if necessary.
- Refer to Figure 27 through Figure 32 and visually inspect the Lightning Arrestor PCB for any signs of lightning induced damage. Verify that an Earth ground wire is connected to the base of the pole. Also check to see that all wind cone ground straps are present and that all connections are tight. Replace the Lightning Arrestor PCB if necessary. Verify current is greater than 2.7A and less than 6.7A for each CCR step on either the black or white wires on the input of the lightning arrestor PCB. Replace lightning arrestor PCB if necessary.
- Also verify that current is greater than 2.7 A and less than 6.7 A for each CCR step on either the Black or White wires on J2 of the LED Wind Cone PCB.
- Insure the wind cone components are wired properly. All LED optical assemblies (including SBOL, if used) are wired in series with the output of the LED wind cone PCB at J6 pins 1 and 2. Verify 700mA DC is being delivered at the output of PCB J6. Replace the LED wind cone PCB or repair/replace any failing component attached to the output J6.

  NOTE: Earlier wind cones used electronics that delivered 1000 mA at the PCB output J6. Do not power newer 700 mA LED modules from the 1000 mA PCB. Also, do not attempt to power the 1000 mA LED modules from the 700 mA PCB.

4.4.3 Part Replacement

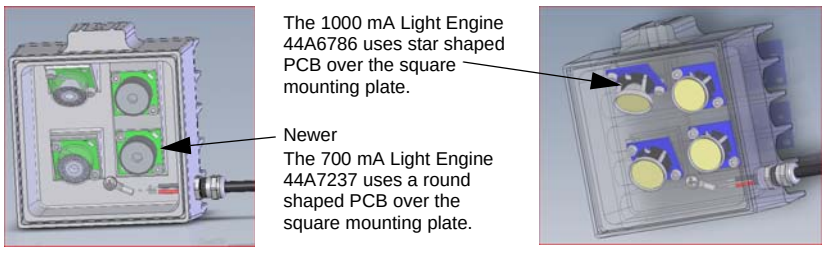
Carefully check the LED light engine and the PCB components on your wind cone.

— Earlier wind cones components operated at 1000 mA.

— Newer wind cone components operate at 700 mA.

If the PCB or LED assembly is found faulty, see; "Wind Cone LED Light Engine, Obstruction Light and Power Supply Board Replacement Guide" on page 55 for parts replacement and additional details.

Figure 26: Identifying the OLD and the New LED Light Engines



— Clean the L-810 obstruction light globe inside and out when replacing its lamp. If the lamp burns dimly, check for correct voltage/current and clean globe.

Maintenance

4.5 Schematics

Figure 27: 12-foot Internal Current

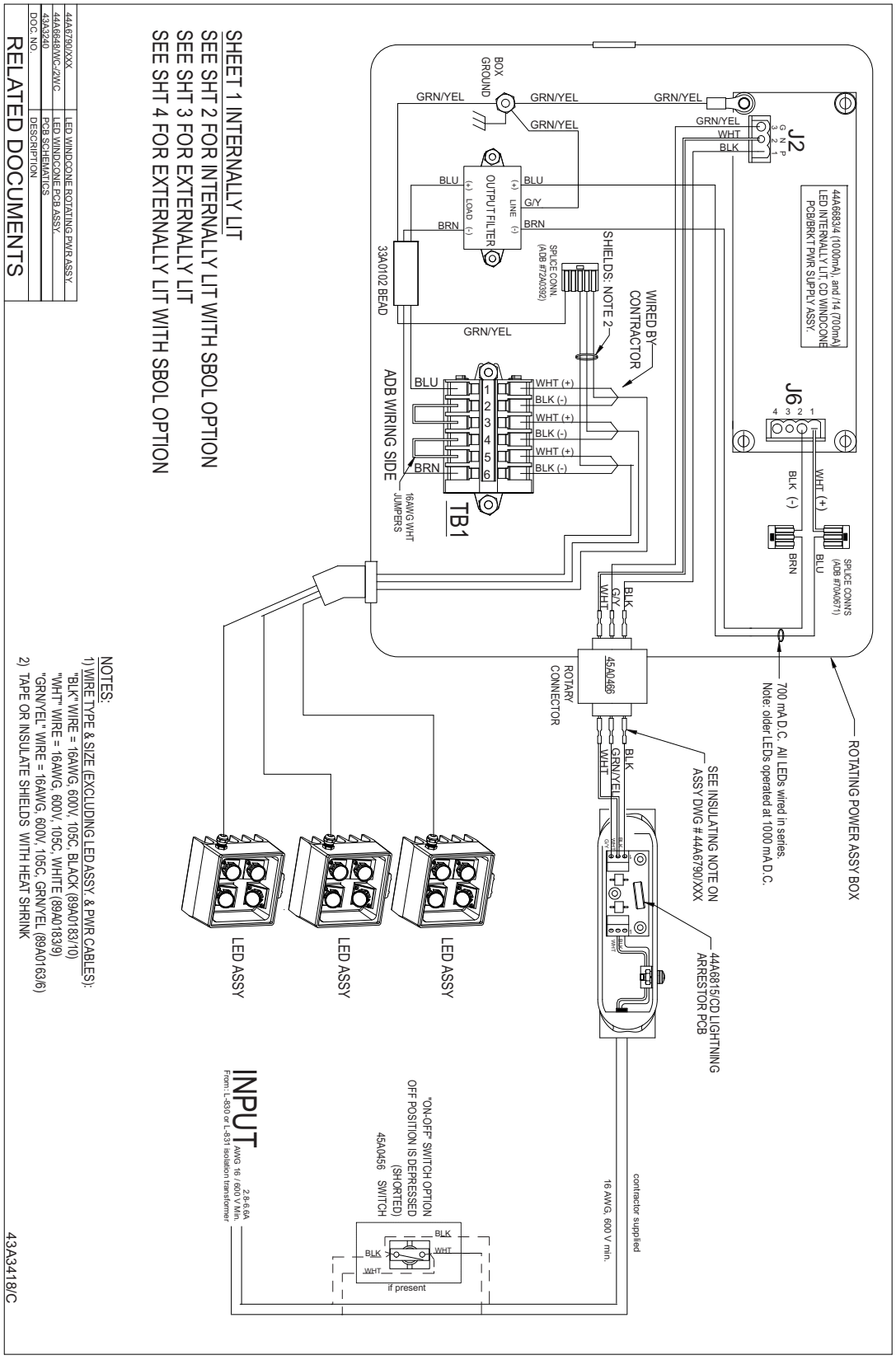


Figure 28: 12-foot Internal Current with SBOL

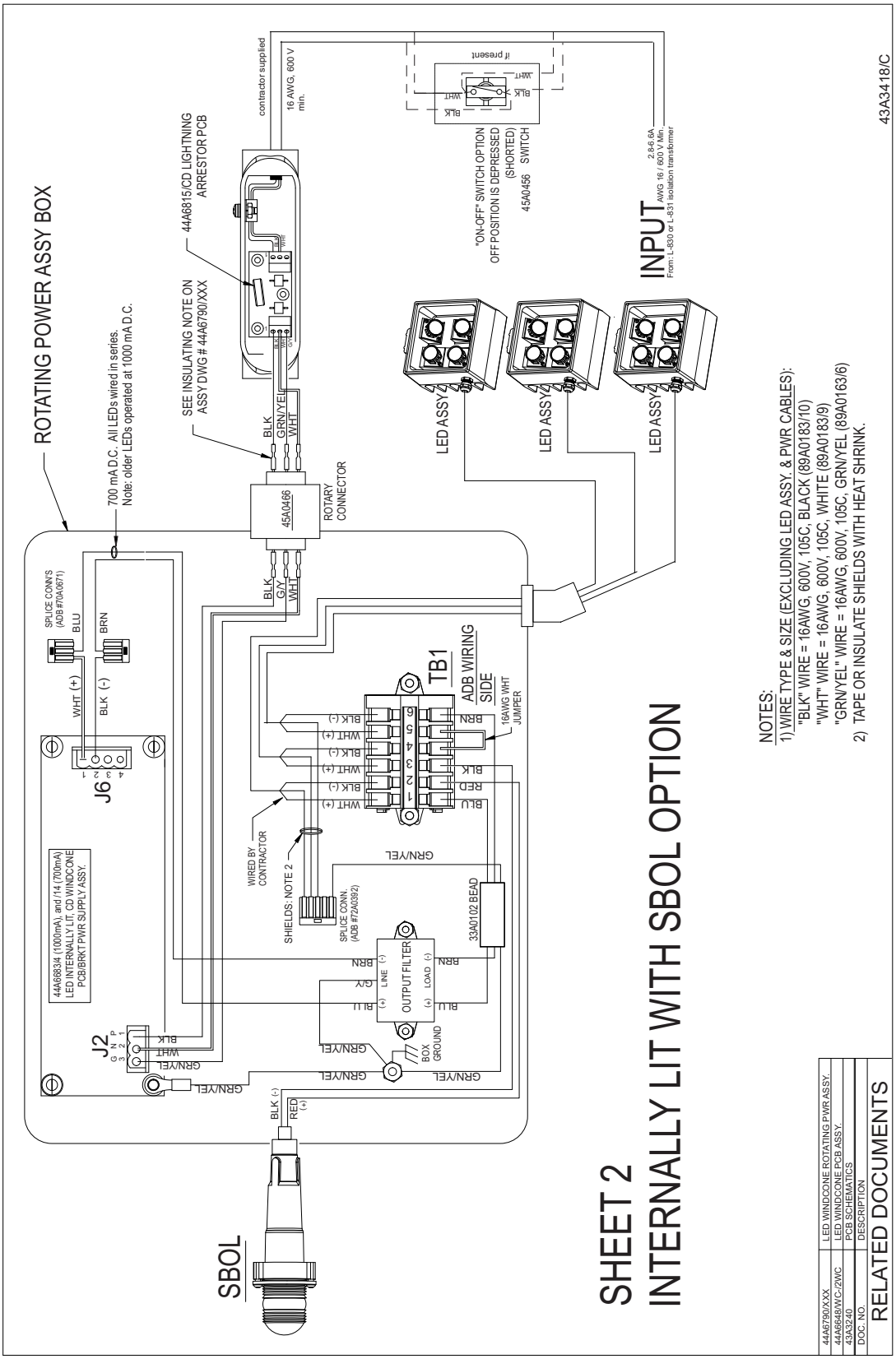


Figure 29: 12-foot External Current

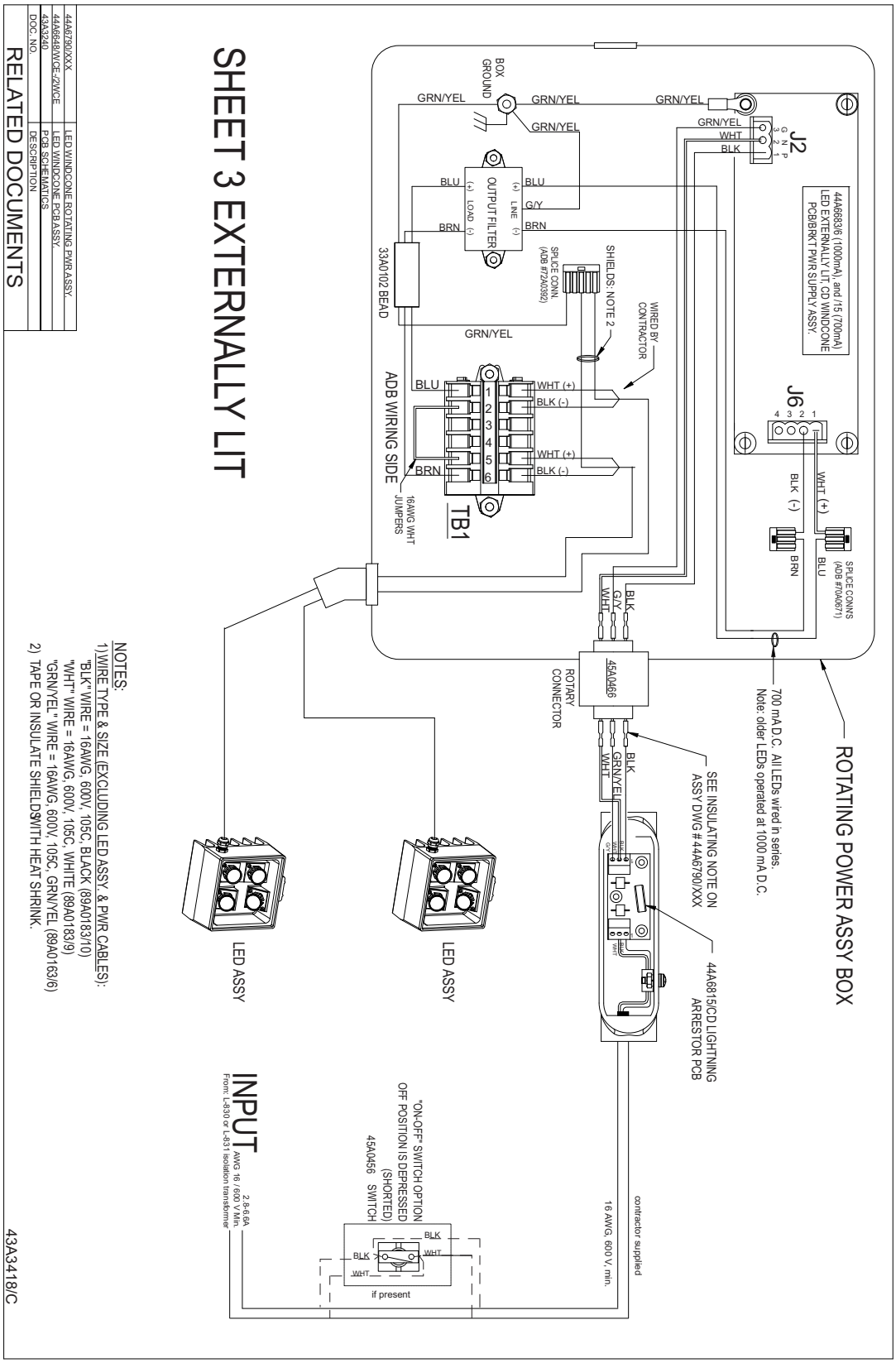


Figure 30: 12-foot External Current with SBOL

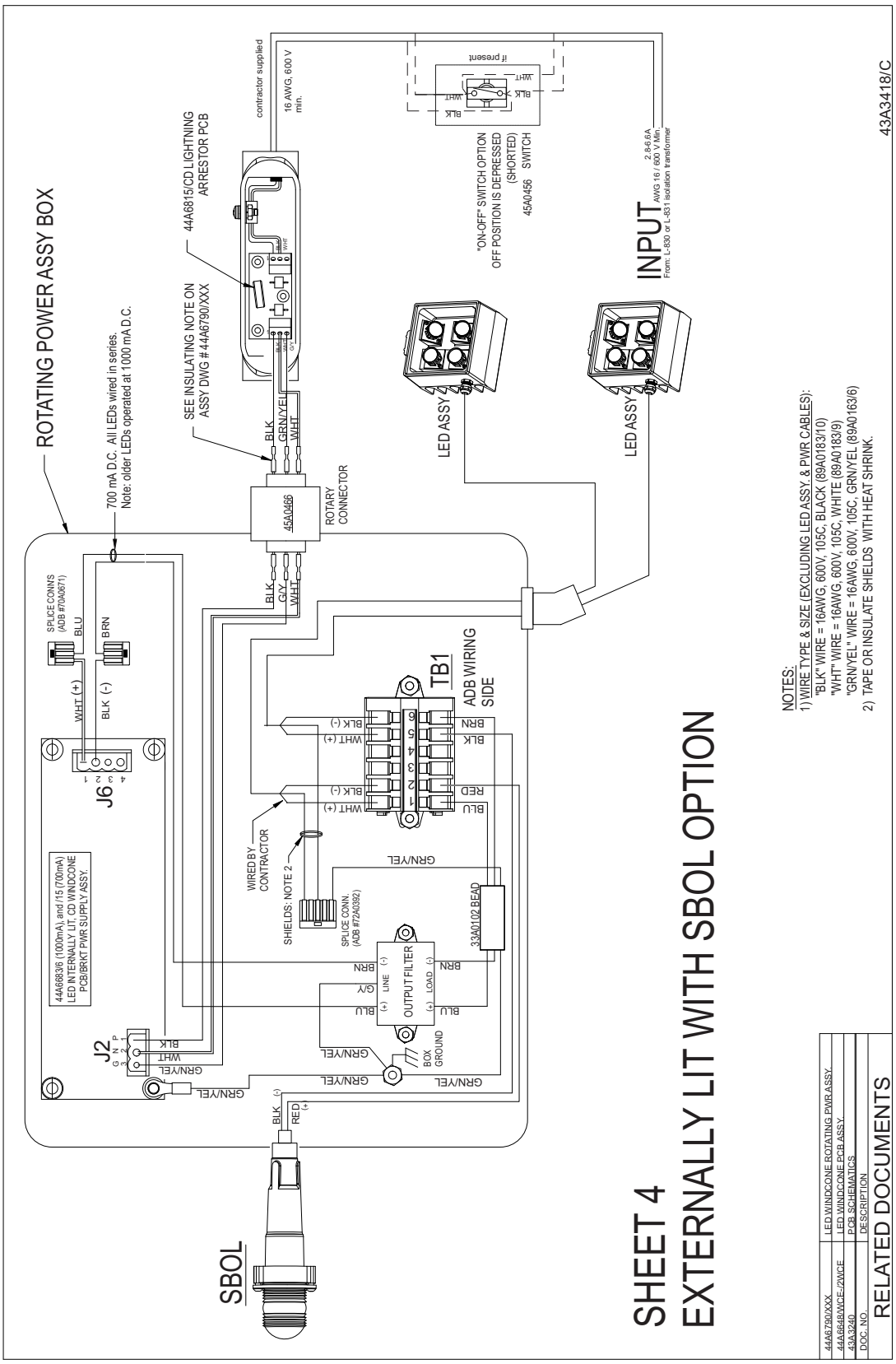
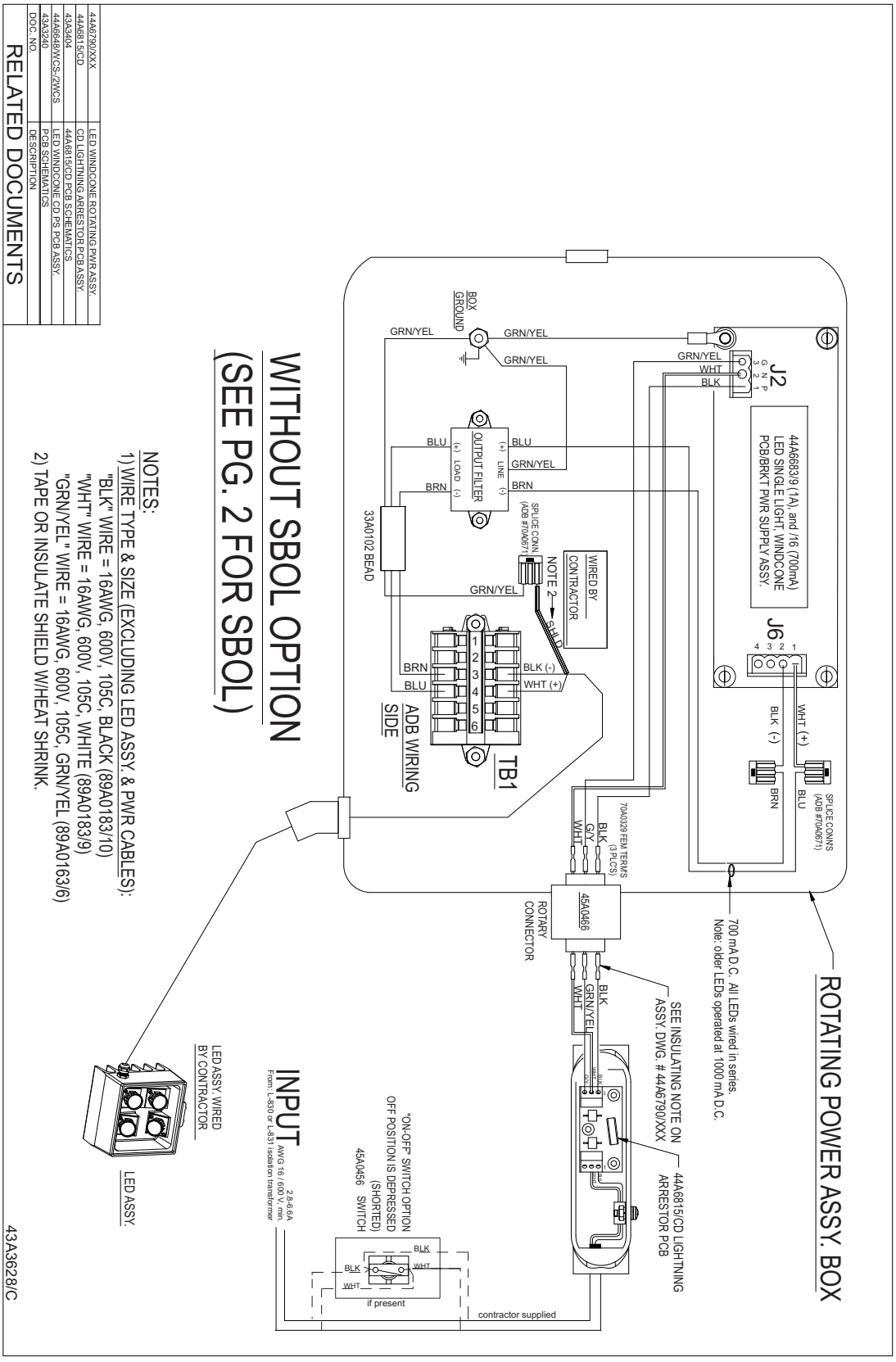


Figure 31: 8-foot Internal Current without SBOL



NOTES:
1) WIRE TYPE & SIZE (EXCLUDING LED ASSY. & PWR CABLES):
"BLK" WIRE = 16AWG, 600V, 105C, BLACK (89A0183/10)
"WHT" WIRE = 16AWG, 600V, 105C, WHITE (89A0183/9)
"GRN/YEL" WIRE = 16AWG, 600V, 105C, GRN/YEL (89A0163/6)
2) TAPE OR INSULATE SHIELD W/HEAT SHRINK.

RELATED DOCUMENTS

DOC. NO.	DESCRIPTION
44A6790/XXX	LED WINDCONE ROTATING PWR ASSY.
44A6815/CD	CD LIGHTNING ARRESTOR PCB ASSY.
43A3404	44A6815/CD PCB SCHEMATICS
44A6648/WCS-2/WCS	LED WINDCONE CD PS PCB ASSY.
43A3240	PCB SCHEMATICS

Maintenance

Figure 32: 8-foot Internal Current with SBOL

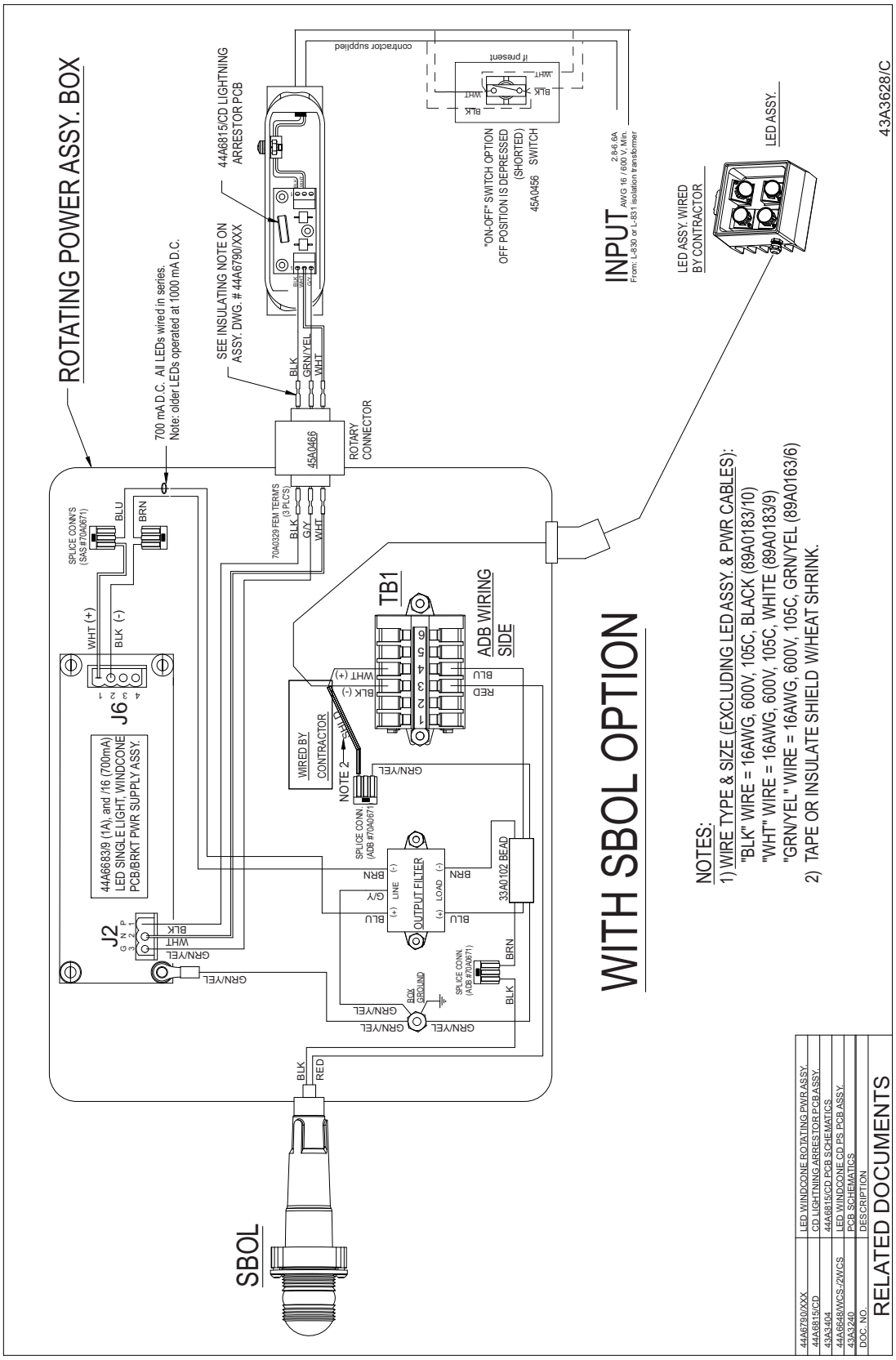


Figure 33: 12-foot Internal Voltage

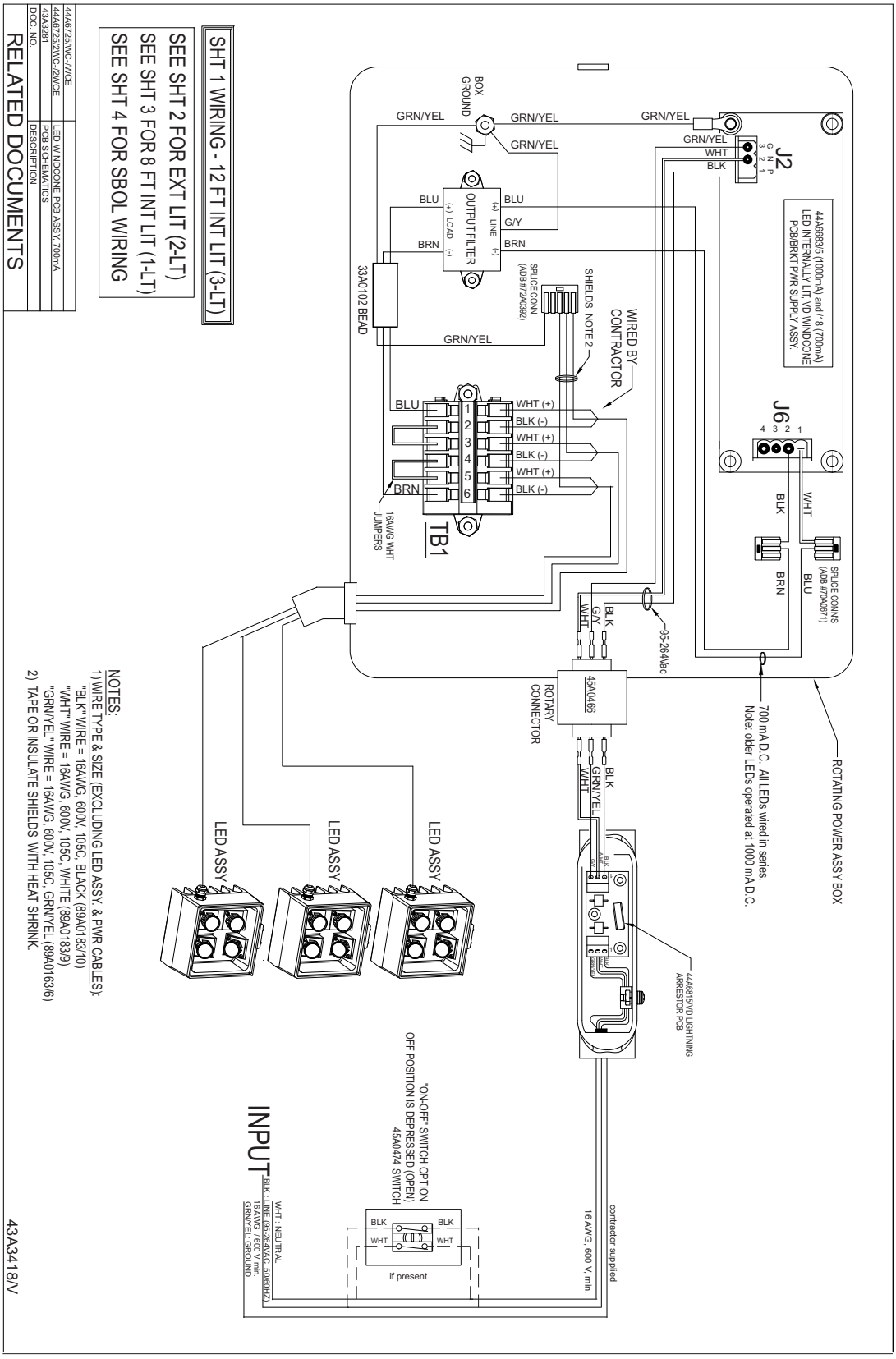


Figure 34: 12-foot External Voltage

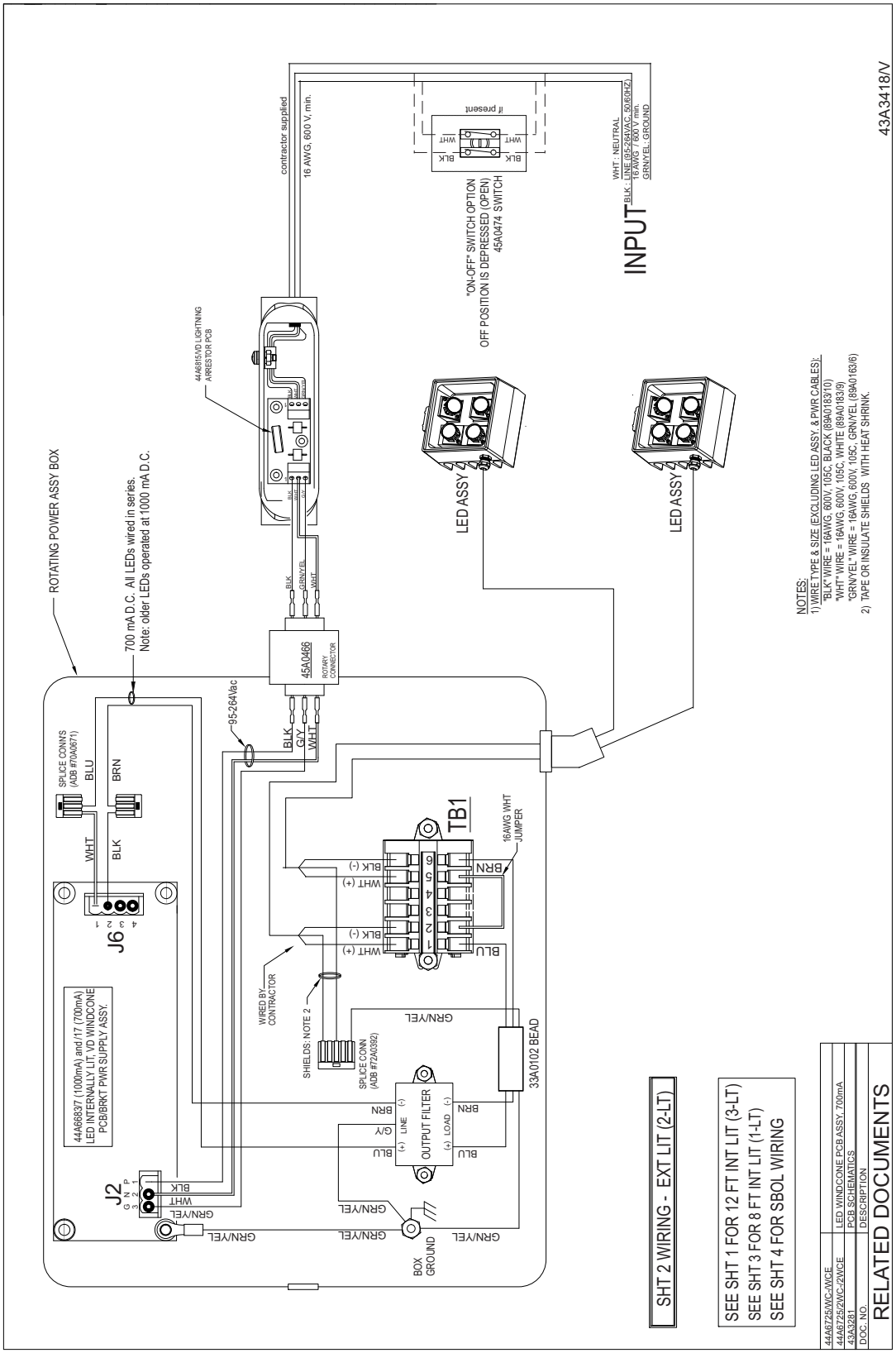


Figure 35: 8-foot Internal Voltage

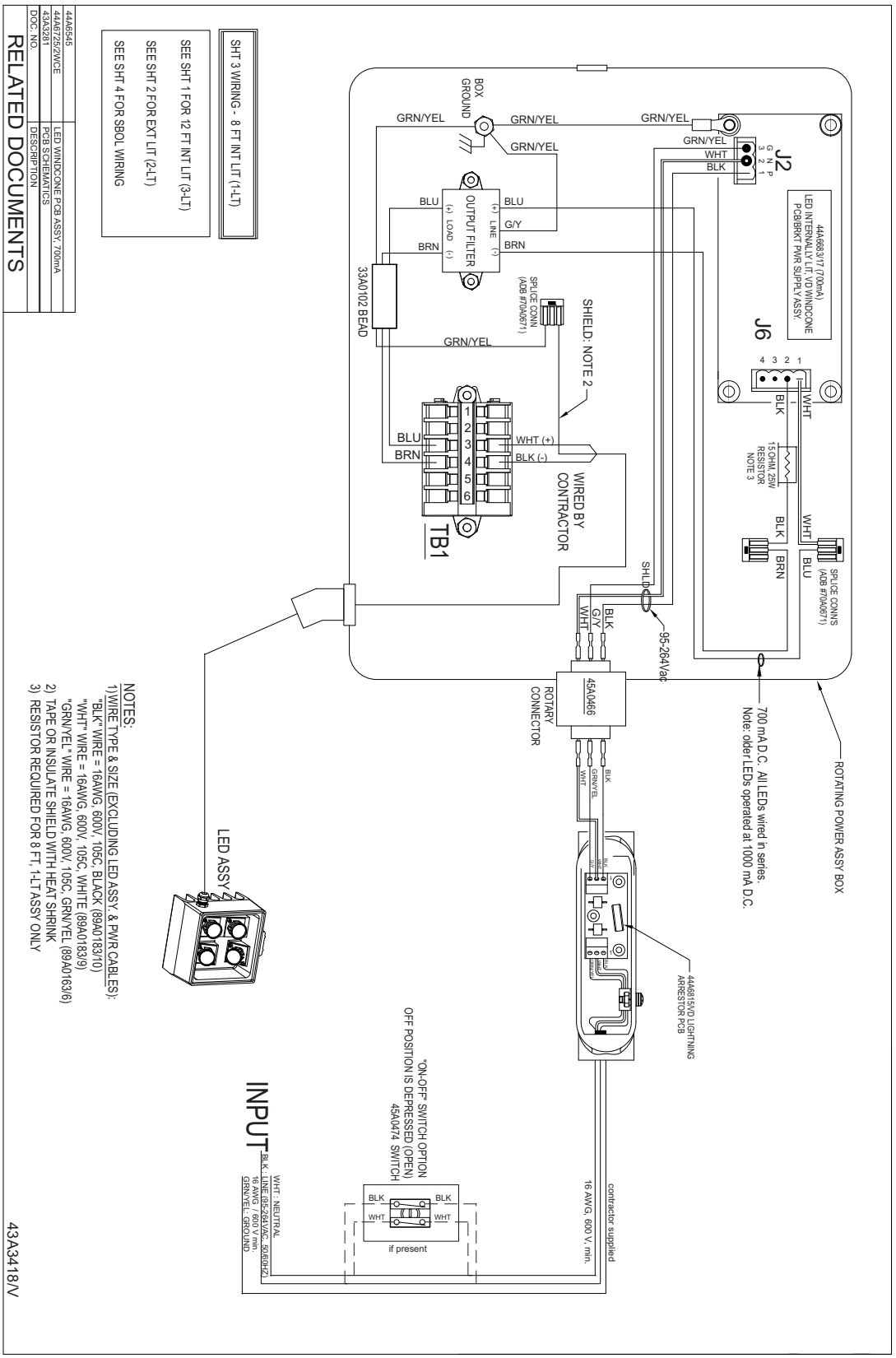
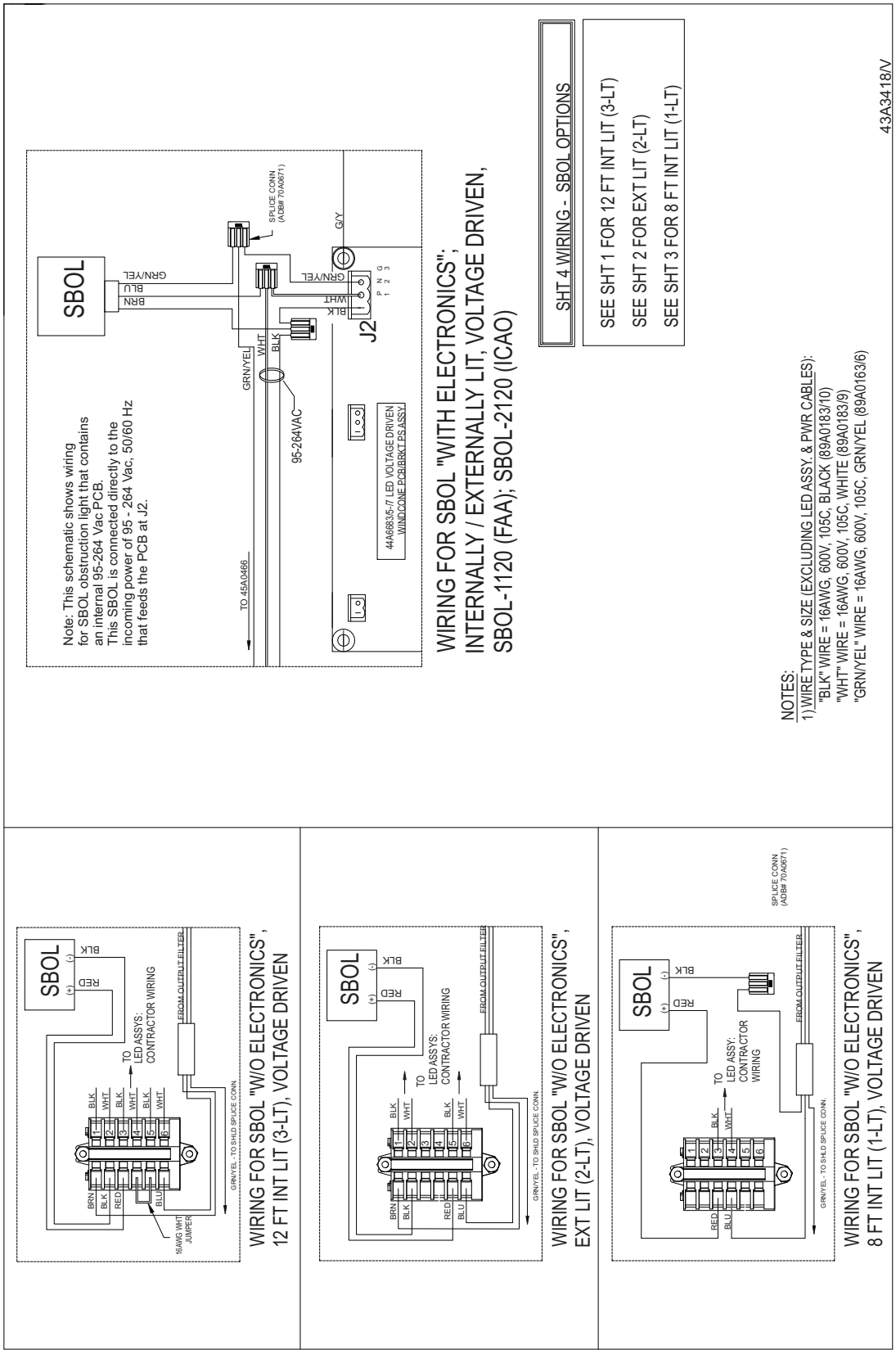


Figure 36: 8/12-foot External Voltage SBOL Options



5.0 Parts

To order parts, call ADB Airfield Solutions Customer Service or your local representative.

This subsection describes how to use the illustrated parts list covered later in this section. It does not provide the actual parts list.

Figure 37: Order Codes

L-807(L) LED Wind Cone Internally Lit Retrofit Kit 94A0500-XXX

Power
5 = Current-driven 2.8-6.6 A, 50/60 Hz
6 = Voltage-driven 95-264 VAC, 50/60 Hz

Obstruction Light
0 = Without L-810(L) LED Obstruction Light
1 = With FAA L-810(L) LED Obstruction Light
2 = With ICAO L-810(L) LED Obstruction Light

Cage Type
1 = Retrofit to bolted cage, 12-foot[2, 4]
2 = Retrofit to bolted cage, 8-foot[1, 3]
3 = Retrofit to welded cage, 12-foot[2, 3]
4 = Retrofit to welded cage, 8-foot[1, 3]

Note: This kit may be used to retrofit existing ADB incandescent wind cones.

[1] Internally lit 8-foot wind cone uses one orange LED optical assembly. For use only with solid-colored wind socks. See drawings on page 2.
[2] Internally lit 12-foot wind cone uses three orange LED optical assemblies. For use only with solid-colored wind socks. See drawings on page 2.
[3] Bolted cage, ADB PN 44A6454
[4] Welded cage, ADB PN 44D0919S (12-ft)/44D0923S (8-ft)

L-807(L) LED Wind Cone Externally Lit Retrofit Kit 94A0531-XXX

Power
5 = Current-driven 2.8-6.6 A, 50/60 Hz
6 = Voltage-driven 95-264 VAC, 50/60 Hz

Obstruction Light
0 = Without L-810(L) LED Obstruction Light
1 = With FAA L-810(L) LED Obstruction Light
2 = With ICAO L-810(L) LED Obstruction Light

Cage Type[1]
3 = Retrofit to bolted cage, 12-foot[2]
4 = Retrofit to bolted cage, 8-foot[2]
5 = Retrofit to welded cage, 12-foot[3]
6 = Retrofit to welded cage, 8-foot[3]

Note: This kit may be used to retrofit existing ADB incandescent wind cones.

[1] Externally lit 8- and 12-foot wind cones use two orange LED optical assemblies. For use only with solid-colored wind socks. See drawings on page 2.
[2] Bolted cage, ADB PN 44A6454
[3] Welded cage, ADB PN 44D0919S(12-ft) / 44D0923S (8-ft)

L-807 & L-807(L) Ordering Code WC807-XXXXX

Size
1 = 8-foot cage
2 = 12-foot cage

Hinge
1 = Bottom-hinged pole
2 = Center-hinged pole

Style
0 = Unlit cage[1]
1 = Internally lit LED, 2.8-6.6 A, 50/60 Hz (1000 mA)[6]
2 = Externally lit LED, 2.8-6.6 A, 50/60 Hz (1000 mA)[6]
3 = Internally lit LED, 95-264 VAC, 50/60Hz (1000 mA)[6]
4 = Externally lit LED, 95-264 VAC, 50/60Hz (1000 mA)[6]
7 = Internally lit incandescent, 120 VAC
B = Internally lit LED, 2.8-6.6A, 50/60 Hz (700 mA)[6]
C = Externally lit LED, 2.8-6.6 A, 50/60 Hz (700 mA)[6]
D = Internally lit LED, 95-264 VAC, 50/60 Hz (700 mA)[6]
E = Externally lit LED, 95-264 VAC, 50/60 Hz (700 mA)[6]

Obstruction Light
0 = No obstruction light
1 = FAA L-810(L) LED READY[2]
3 = FAA L-810(L) LED, 95-264 VAC, 50/60 Hz[3]
5 = FAA L-810(L) LED, 2.8-6.6 A, 50/60 Hz[4]
9 = FAA incandescent L-810, 120 VAC

Applications
0 = With solid orange wind sock[7]
1 = No wind sock[5]

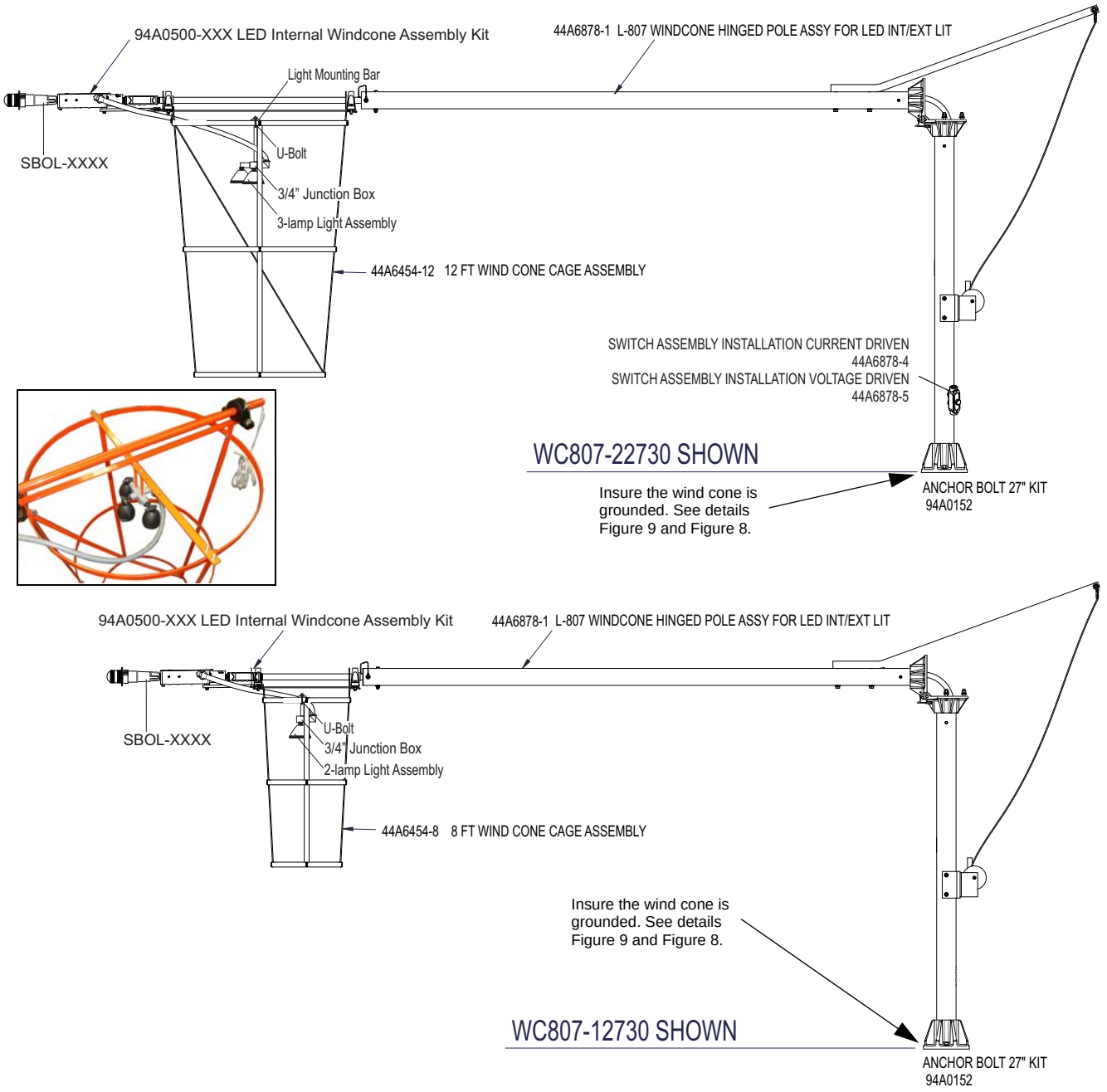
Notes

[1] Unlit cage can be used with no obstruction light or obstruction light options 3 through 9.
[2] Used only on internally or externally lit LED wind cones (Style options 1 through 4 and B through E). To obtain an FAA LED L-810, order kit 94A0646-1 (FAA) or -2 (ICAO).
[3] Available only on unlit or internally lit incandescent wind cones (Style options 0 or 7)
[4] Available only with unlit wind cone cages (Style option 0)
[5] For applications where wind socks other than orange are used. Special wind sock colors supplied separately.
[6] LED internally or externally lit configurations are available only with obstruction light options 0 or 1. LED wind sock light source is orange and is for use with only solid-colored wind socks.

PARTS

5.1 Internally Lighted Halogen Wind Cone

Figure 38: L-807 Wind Cone (With Internal Incandescent Lighting Assembly)



5.2 Power Adapter Parts List

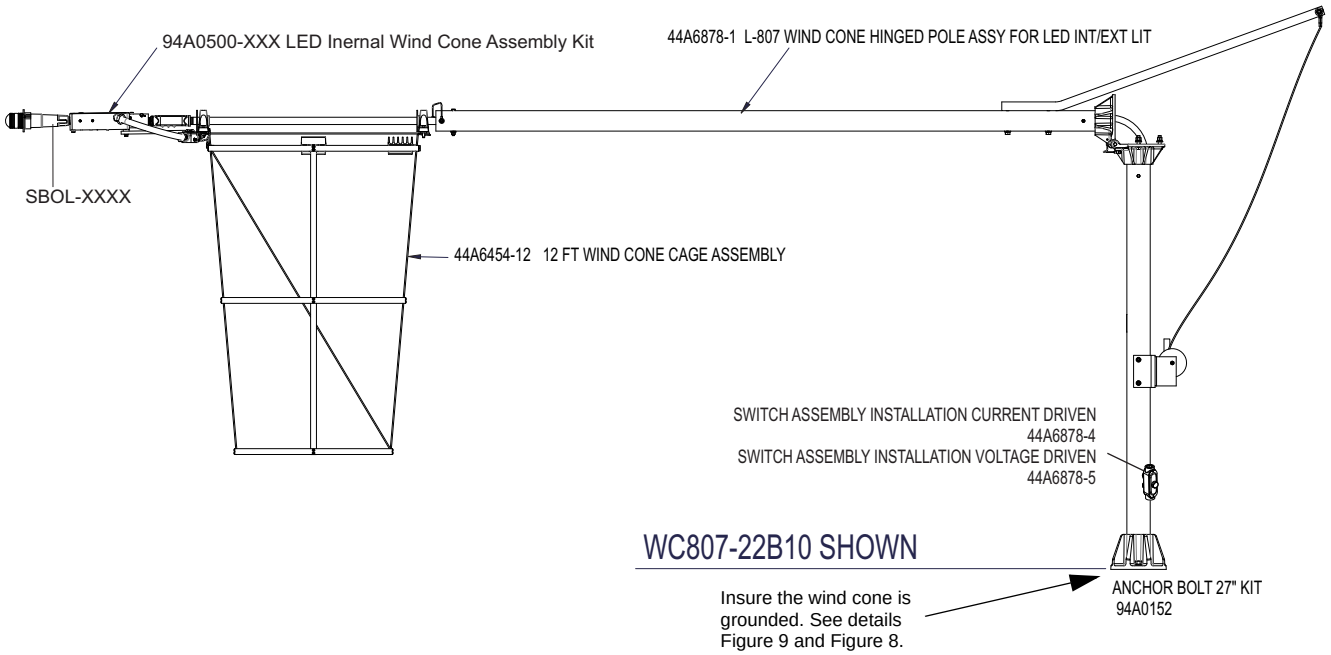
NOTE: The power adapter is used to power the lighted wind cone from a 6.6A series circuit. The power adapter is ordered separately.

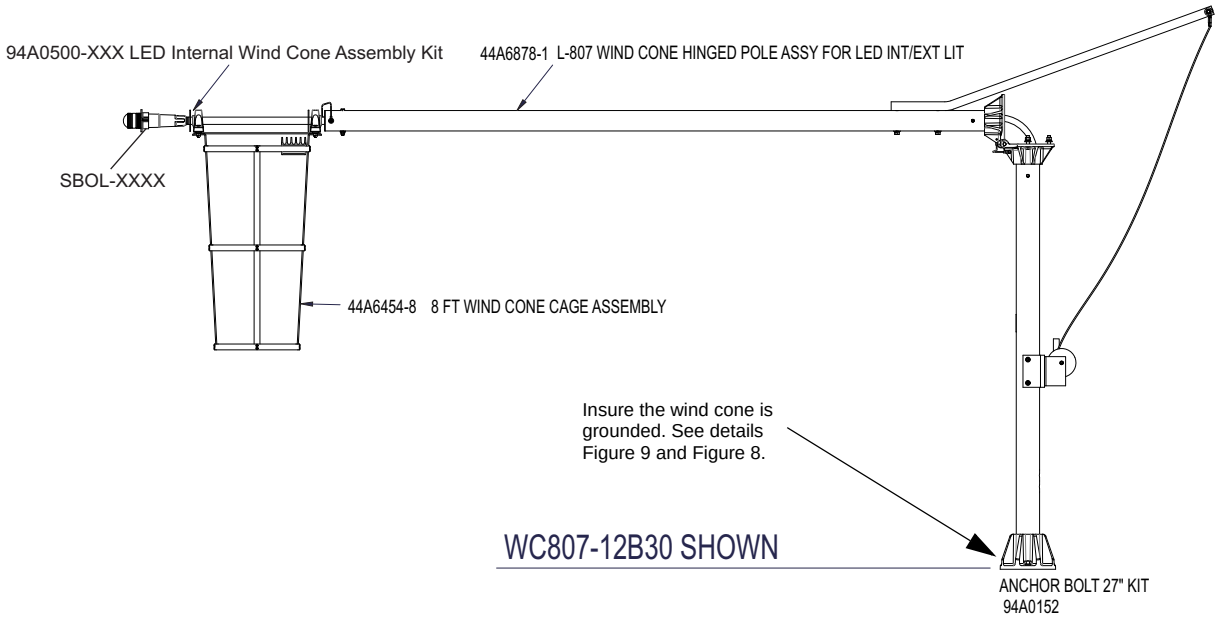
Description	Part Number
PA-4 power adapter, 3-step CCR	44D2004-1121
PA-4 power adapter, 5-step CCR	44D2004-1221

PARTS

5.3 Internally Lighted LED Wind Cone

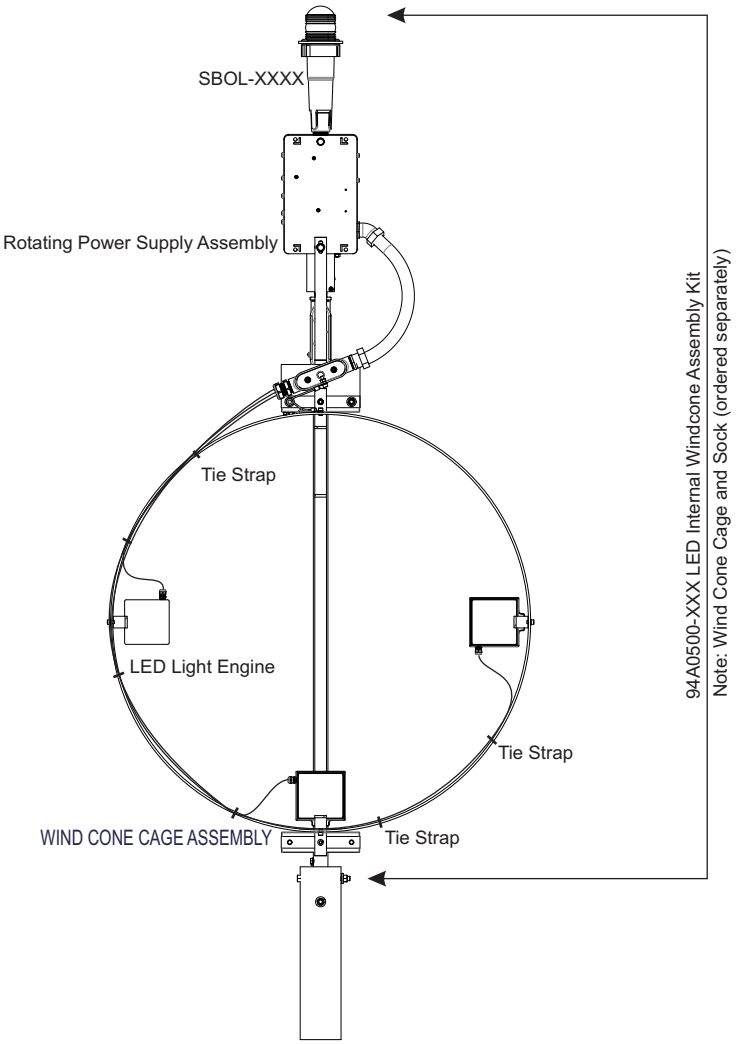
Figure 39: L-807 LED Internally Lit Wind Cone





PARTS

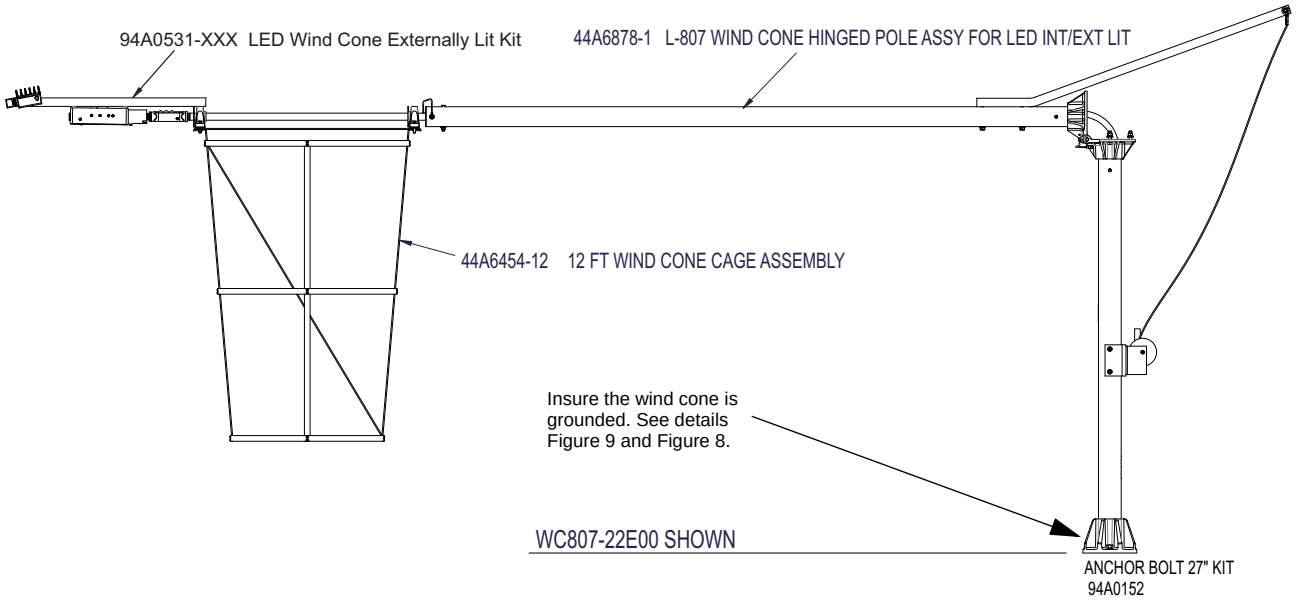
Figure 40: L-807 LED Internally Lit Wind Cone Cage

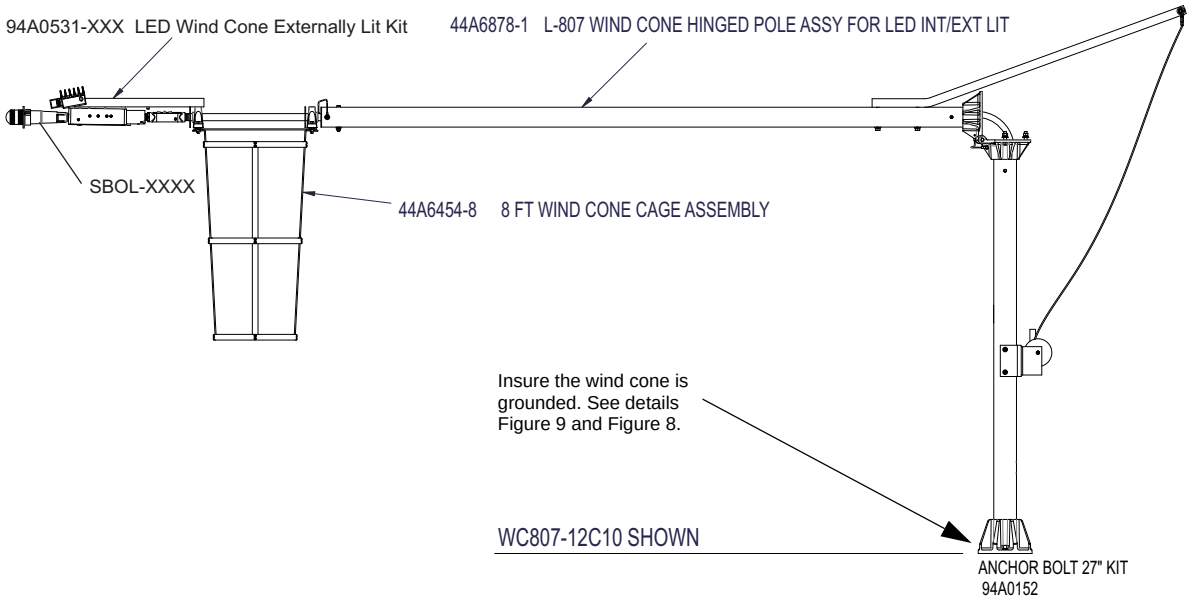


PARTS

5.4 Internally Lighted Halogen Wind Cone

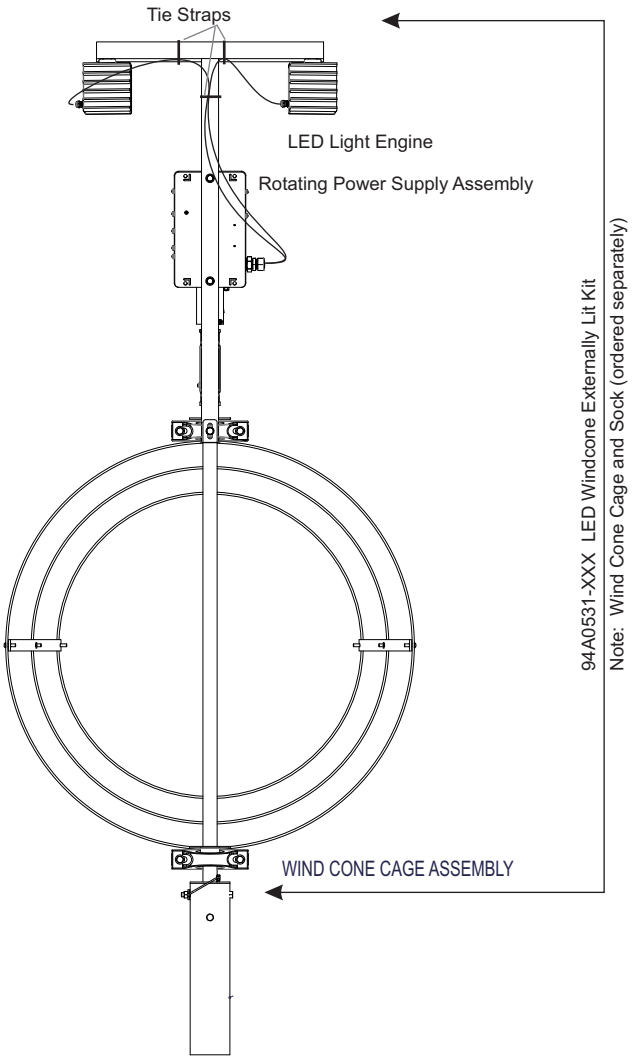
Figure 41: L-807 LED Externally Lit Wind Cone





PARTS

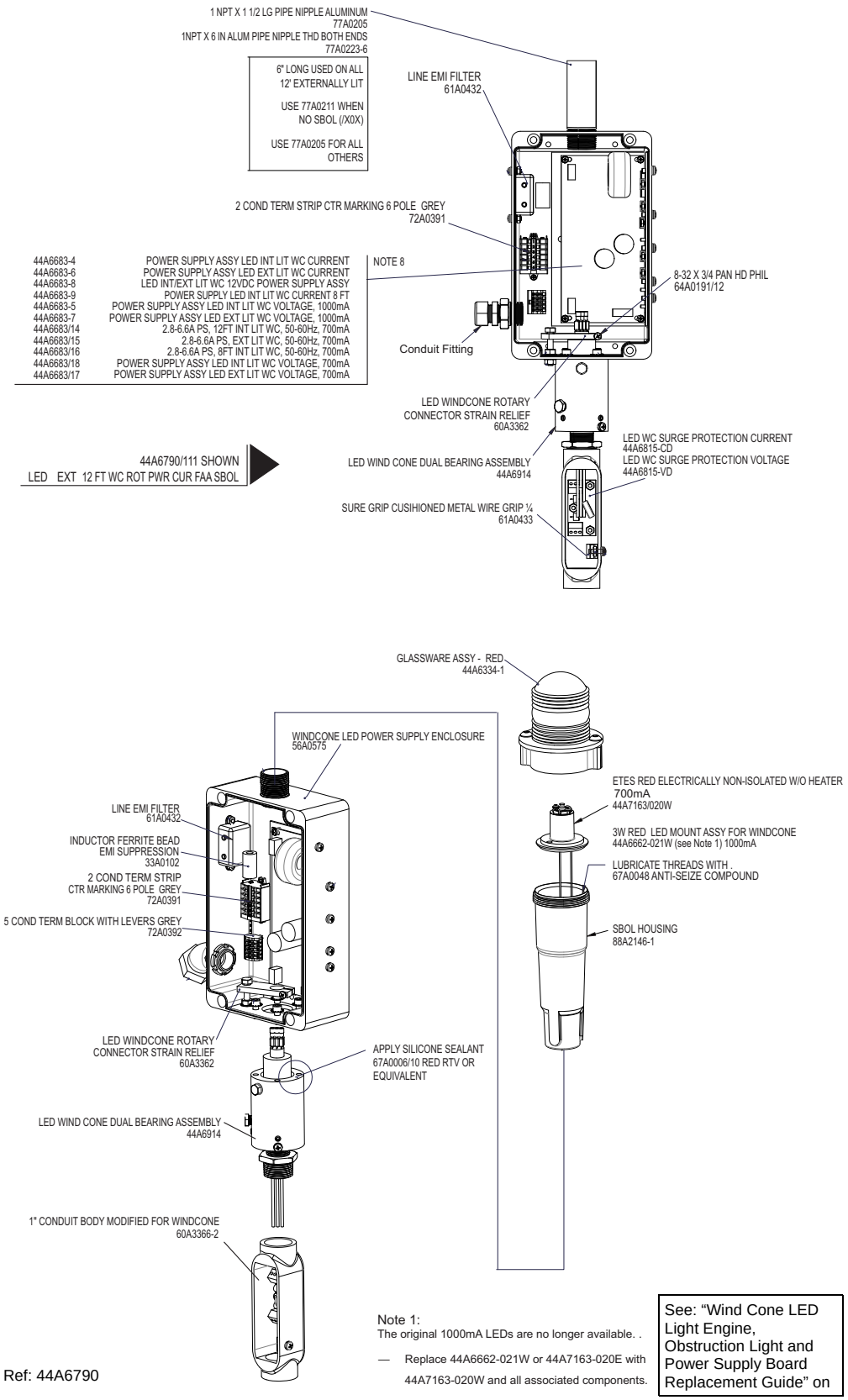
Figure 42: L-807 LED Externally Lit Wind Cone



PARTS

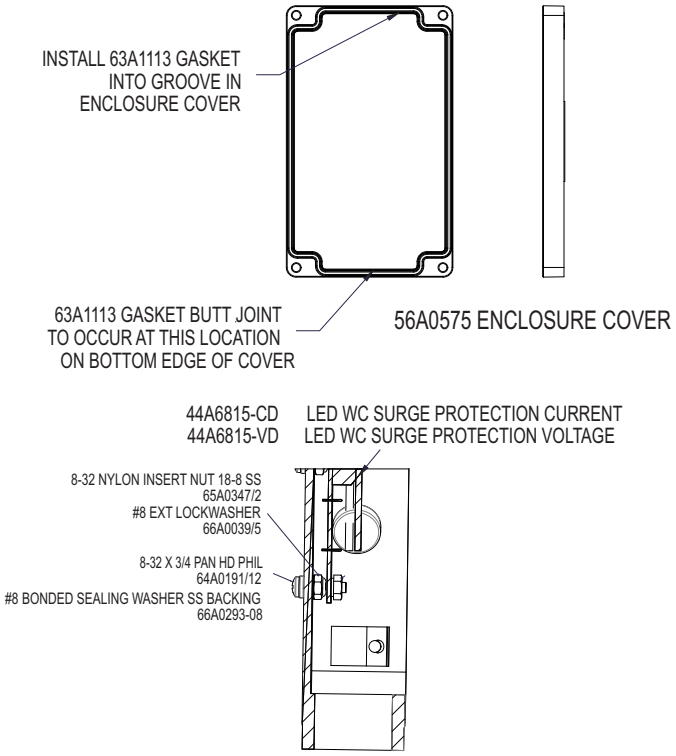
5.5 Wind Cone Rotating Power Supply Assembly

Figure 43: Rotating Power Supply Assembly including an SBOL



See: “Wind Cone LED Light Engine, Obstruction Light and Power Supply Board Replacement Guide” on

Figure 44: Rotating Power Supply Assembly Box Cover



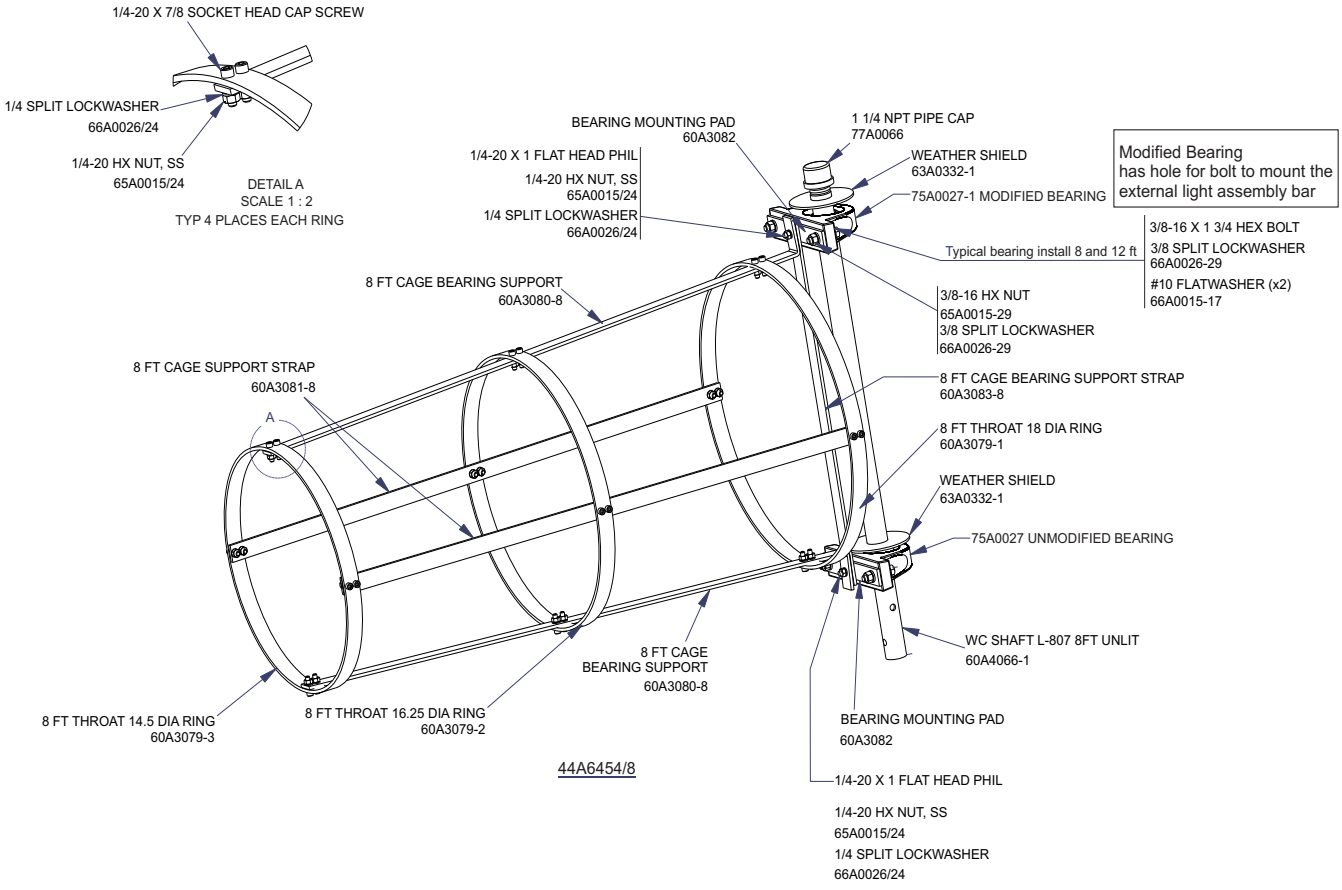
PARTS

5.6 Wind Cone Cages

44A6454 - X

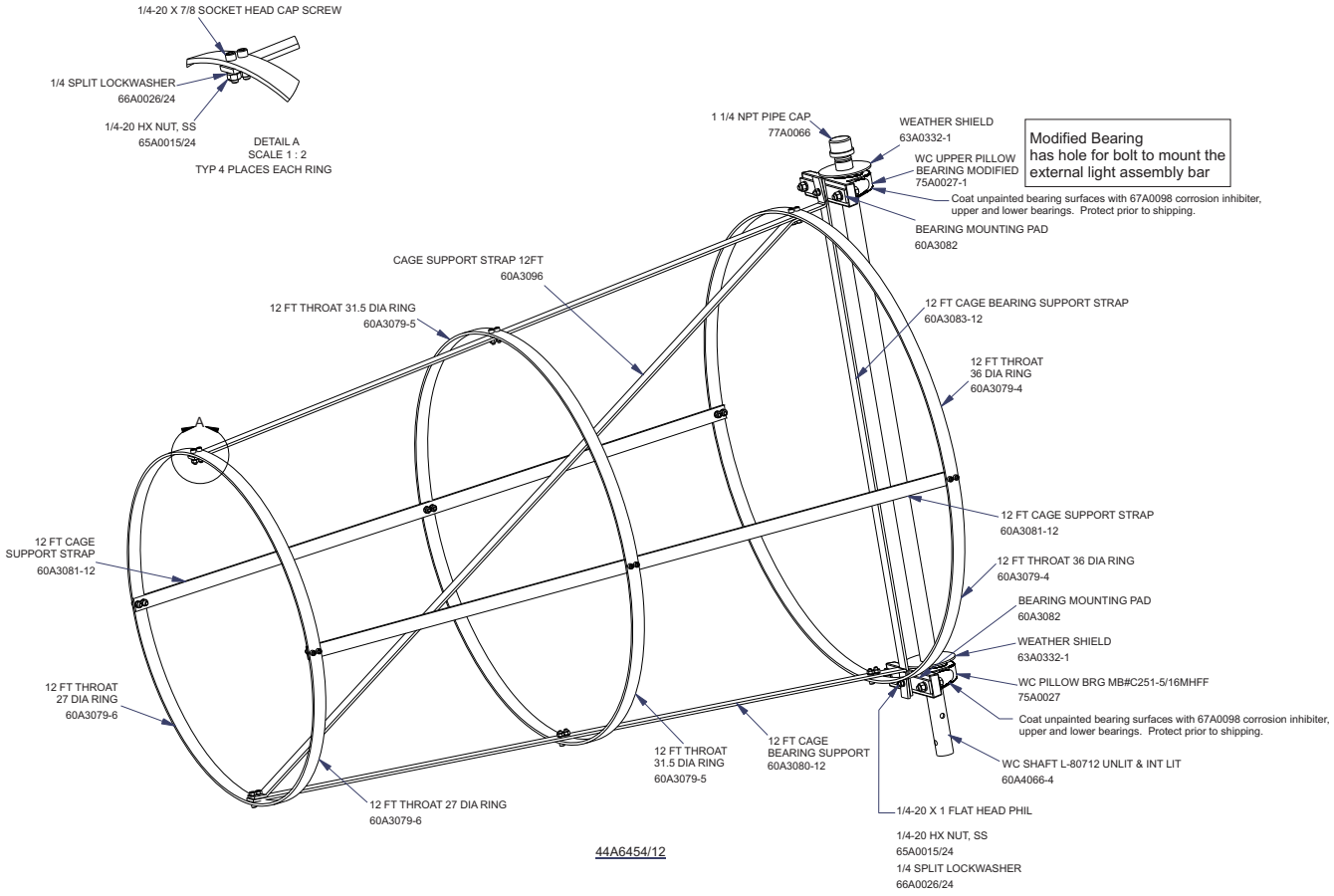
8 = 8 FT (FOR L-806/L-807)
12 = 12 FT (FOR L-807)

Figure 45: 8-foot Wind Cone Cage



PARTS

Figure 46: 12-foot Wind Cone Cage



PARTS

5.7 Possible Spare Parts

Table 5: Spare Components (Incandescent)

Description	Part No.
Cage assembly, 8 ft	44A6454-8
Cage assembly, 12 ft	44A6454-12
Cage bearings	75A0027
Cage bearing (weather) shields	63A0332-1
Internal light assembly, 8 ft	
Internal light assembly, 12 ft	
Glassware, red, incandescent, L-810	63A0149
Glassware assembly, red, LED	44A6334-1S
Lamp, bi-pin 100W, 120 VAC (Internal)	48A0375
L-810 incandescent obstruction light (69W, 120 VAC) and mounting assembly	44B0936S
L-810 incandescent lamp, 69W, 120 VAC	48A0009
Bottom-hinge pole assembly, 8-ft	44A6457-8
Bottom hinge pole assembly, 12-ft	44A6457-12
Center-hinge pole Internally lit and with or without SBOL	44A6878-1
Center-hinge pole Unlit and without SBOL	44A6878-2
Rope cleat	62B0319S
Sock, orange, nylon, 8 ft	77C0061-1
Sock, orange, nylon, 12 ft	77C0062-1

Table 6: Spare Components (LED)

Description	Part No.
LED (1000 mA) and mount assembly, obstruction light **OBSOLETE**[1]	44A6662-021W
LED (700 mA) and mount assembly, obstruction light	44A7163-020W
Surge protection assembly (voltage)	44A6815-VD
Surge protection assembly (current)	44A6815-CD
L-810(L) replacement kit for L-806(L)/L-807(L) wind cone (FAA) L-810(L) replacement kit for L-806(L)/L-807(L) wind cone (ICAO)	94A0646-1 94A0646-2
Light engine assembly, orange (1000 mA)[1] OBSOLETE	44A6786
Light engine assembly, orange (700 mA)	44A7237
Power supply PCB/mounting assembly, current-driven, 8-ft internally lit (700 mA)	44A6683-16
Power supply PCB/mounting assembly, current-driven, 12-ft internally lit (700 mA)	44A6683-14
Power supply PCB/mounting assembly, voltage-driven, 8-ft internally lit (700 mA)	44A6683-17
Power supply PCB/mounting assembly, voltage-driven, 12-ft internally lit (700 mA)	44A6683-18
Power supply PCB/mounting assembly, current-driven, 8-ft externally lit (700 mA)	44A6683-15
Power supply PCB/mounting assembly, current-driven, 12-ft externally lit (700 mA)	44A6683-15
Power supply PCB/mounting assembly, voltage-driven, 8-ft externally lit (700 mA)	44A6683-17
Power supply PCB/mounting assembly, voltage-driven, 12-ft externally lit (700 mA)	44A6683-17
Bottom-hinge pole assembly, 8-ft	44A6457-8
Bottom hinge pole assembly, 12-ft	44A6457-12
Center-hinge pole Int/Ext lit and with or without SBOL	44A6878-1
Center-hinge pole Unlit and without SBOL	44A6878-2
Sock, orange, nylon, 8 ft	77C0061-1
Sock, orange, nylon, 12 ft	77C0062-1

[1] Original light engines, orange 1000mA (44A6786), shipped prior to January 2013 are obsolete. Replace with all new 700mA LED light engines and obstruction light. The 1000mA power supply PCB will also require replacing with the 700mA power supply PCB. See “Wind Cone LED Light Engine, Obstruction Light and Power Supply Board Replacement Guide” on page 55.

NOTE: To replace the entire 1000mA LED obstruction light on voltage powered wind cones shipped prior to January 2013, order replacement kit 94A0646-X.

Figure 47: Internal Lit Windcone 94A0500 Kit Info

L-806 & L-807 LED WIND CONE INSTALLATION KIT LED INTERNALLY LIT BASE NUMBER	44A7237 (RED-ORANGE) LED LIGHT ENGINE ASSEMBLY USES KIT NUMBERS AS NOTED BELOW	44A7237/1 (WHITE) LED LIGHT ENGINE ASSEMBLY USES KIT NUMBERS AS NOTED BELOW	12 FT. CANADIAN / ICAO WIND SOCK REFERENCE
94A0500	/500	Contact your ADB representative for information on when this will be available	SEE NOTE 1
94A0500	/501		SEE NOTE 1
94A0500	/502		
94A0500	/503		SEE NOTE 1
94A0500	/504		
94A0500	/505		
94A0500	/510		CANADIAN 61A0510/10
94A0500	/511		CANADIAN 61A0510/10
94A0500	/512		
94A0500	/513		CANADIAN 61A0510/10
94A0500	/514		
94A0500	/515		
94A0500	/520		ICAO 77C0062/4
94A0500	/522		
94A0500	/525		
94A0500	/600		SEE NOTE 1
94A0500	/605		
94A0500	/610		CANADIAN 61A0510/10
94A0500	/611		CANADIAN 61A0510/10
94A0500	/612		
94A0500	/613		CANADIAN 61A0510/10
94A0500	/614		
94A0500	/615		
94A0500	/620		ICAO 77C0062/4
94A0500	/621		ICAO 77C0062/4
94A0500	/623		ICAO 77C0062/4
94A0500	/624		
94A0500	/625		

NOTE 1: 94A0500/5XX & 94A0500/6XX SERIES ASSEMBLIES
ARE SAME AS 94A0500/7XX & 94A0500/8XX SERIES ASSEMBLIES
WITH EXCEPTION OF LIGHT ENGINE ASSEMBLIES AS NOTED

Figure 48: External Lit Windcone 94A0531 Kit Info

L-806 & L-807 LED WIND CONE INSTALLATION KIT LED INTERNALLY LIT BASE NUMBER	44A7237 (RED-ORANGE) LED LIGHT ENGINE ASSEMBLY USES KIT NUMBERS AS NOTED BELOW	44A7237/1 (WHITE) LED LIGHT ENGINE ASSEMBLY USES KIT NUMBERS AS NOTED BELOW	12 FT. CANADIAN / ICAO WIND SOCK REFERENCE
94A0531	/511	Contact your ADB representative for information on when this will be available	CANADIAN 61A0510/10
94A0531	/512		
94A0531	/513		CANADIAN 61A0510/10
94A0531	/514		
94A0531	/515		CANADIAN 61A0510/10
94A0531	/516		
94A0531	/521		ICAO 77C0062/4
94A0531	/523		ICAO 77C0062/4
94A0531	/601		SEE NOTE 1
94A0531	/602		
94A0531	/605		SEE NOTE 1
94A0531	/611		CANADIAN 61A0510/10
94A0531	/612		
94A0531	/613		CANADIAN 61A0510/10
94A0531	/614		
94A0531	/615		CANADIAN 61A0510/10
94A0531	/616		
94A0531	/621		ICAO 77C0062/4
94A0531	/623		ICAO 77C0062/4

NOTE 1: 94A0531/5XX & 94A0531/6XX SERIES ASSEMBLIES
ARE SAME AS 94A0531/7XX & 94A0531/8XX SERIES ASSEMBLIES
WITH EXCEPTION OF LIGHT ENGINE ASSEMBLIES AS NOTED

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5.7.1 Wind Cone LED Light Engine, Obstruction Light and Power Supply Board Replacement Guide

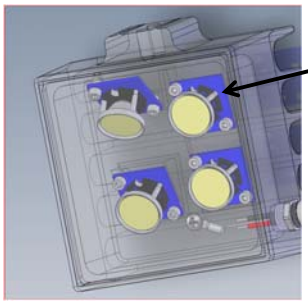
Figure 49: Light Engine Indentification and Replacement

Wind Cone LED Light Engine, Obstruction Light and Power Supply Board Replacement Guide

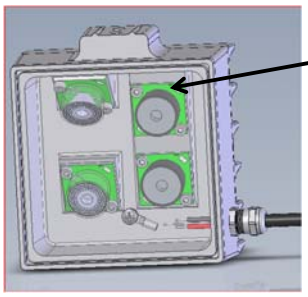
The original 1000mA orange LED light engines and 1000mA red obstruction light LEDs, shipped prior to January 2013 are obsolete. Replace with 700mA components as defined in this section.

You can identify the LED operating current in one of two ways:

1. Examine the power supply PCB part number. 1000mA vs. 700mA PCB part numbers are shown in the information below.
2. Visually examine the LED light engines as shown in the graphic below.



The 1000mA Light Engine 44A6786 uses a star shaped PCB over a square mounting plate.



The 700mA Light Engine 44a7237 uses a round shaped PCB over a square mounting plate.

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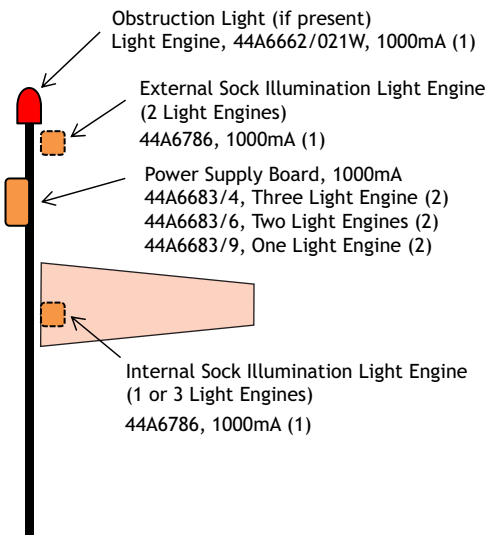
Figure 50: Series Circuit Wind Cones

Series Circuit Powered Wind Cone, Obsolete 1000mA LEDs



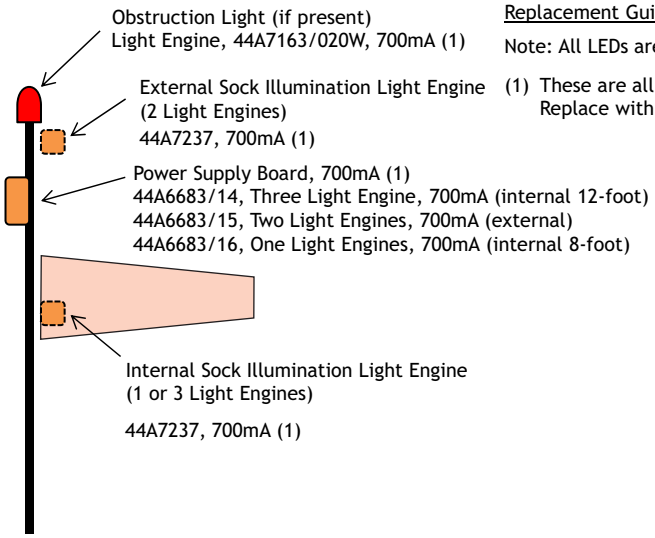
Replacement Guidance

Note: All LEDs are wired in series.

(1) Replace all 1000mA components (Obstruction Light LED Light Engine [if present], All Sock Illumination Light Engines and Power Supply Board) with new 700mA equivalents.
Obstruction Light: 44A7163/020W, 700mA
Light Engine: 44A7237, 700mA
PCB:
44A6683/16, One Light Engine, 700mA
44A6683/15, Two Light Engines, 700mA
44A6683/14, Three Light Engines, 700mA

(2) Replace with the same part number.

Series Circuit Powered Wind Cone, 700mA LEDs



Replacement Guidance

Note: All LEDs are wired in series.

(1) These are all present production. Replace with the same part number.

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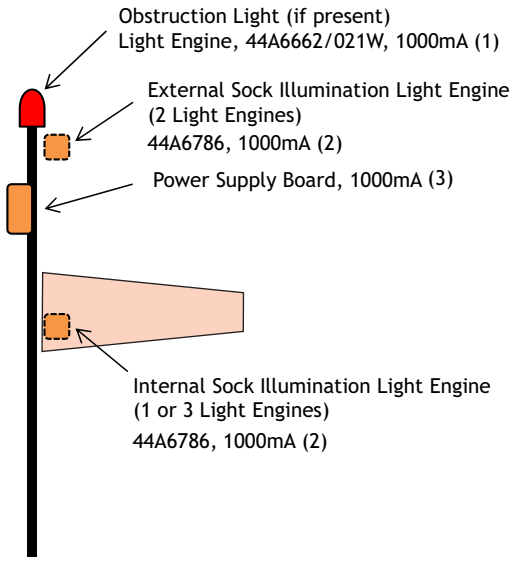
Figure 51: Voltage Powered Wind Cones (1000 mA LEDs)

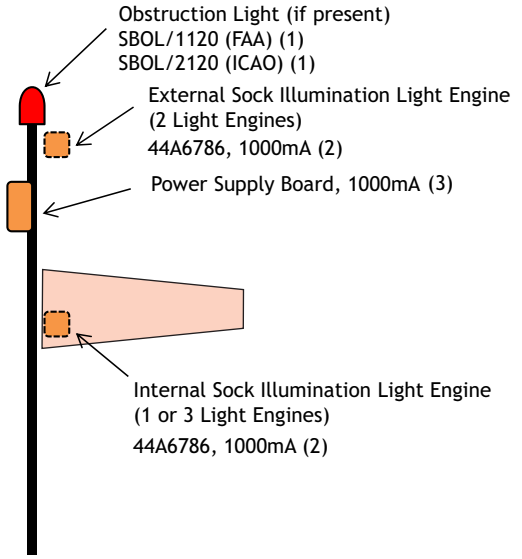


Replacement Guidance

Note: All LEDs are wired in series.
However, the SBOL retrofit Kit 94A0646 is connected directly to incoming power.

(1) Replace with SBOL Retrofit Kit part number 94A0646/1 (for FAA) or 94A0646/2 (for ICAO). The SBOL includes an internal PCB that connects directly to incoming power.
(2) Replace all 1000mA components (Obstruction Light LED Light Engine [if present], All Sock Illumination Light Engines and Power Supply Board) with new 700mA equivalents.
Obstruction Light: 44A7163/020W, 700mA
Light Engine: 44A7237, 700mA
PCB:
For one Light Engine: order kit 94A0652 which includes:
a 44A6683/17 PCB and a 15Ω ballast resistor
44A6683/17, Two Light Engines, 700mA
44A6683/18, Three Light Engines, 700mA
(3) All externally lit wind cones, replace with PCB 44A6683/7 (1000mA)
All 12-foot internally lit wind cones, replace with PCB 44A6683/5 (1000mA)
For all 8-foot Internally lit wind cones that use PCB 44A6545/WCS(1000mA)
(contact your ADB sale representative for further assistance)

Voltage Powered Wind Cone, Obsolete 1000mA Sock Illumination LEDs



Replacement Guidance

Note: This interim version of the wind cone used a standard SBOL Obstruction Light that connected directly to incoming power.
All sock illumination LEDs are wired in series.

(1) This is a standard SBOL Obstruction Light. Replace with the same part number.
(2) Replace all 1000mA components (All Sock Illumination Light Engines and Power Supply Board) with new 700mA equivalents.
Light Engine: 44A7237, 700mA
PCB:
For one Light Engine: order kit 94A0652 which includes:
a 44A6683/17 PCB and a 15Ω ballast resistor
44A6683/17, Two Light Engines, 700mA
44A6683/18, Three Light Engines, 700mA
(3) All externally lit wind cones, replace with PCB 44A6683/7 (1000mA)
All 12-foot internally lit wind cones, replace with PCB 44A6683/5 (1000mA)
For all 8-foot Internally lit wind cones that use PCB 44A6545/WCS(1000mA)
(contact your ADB sale representative for further assistance)

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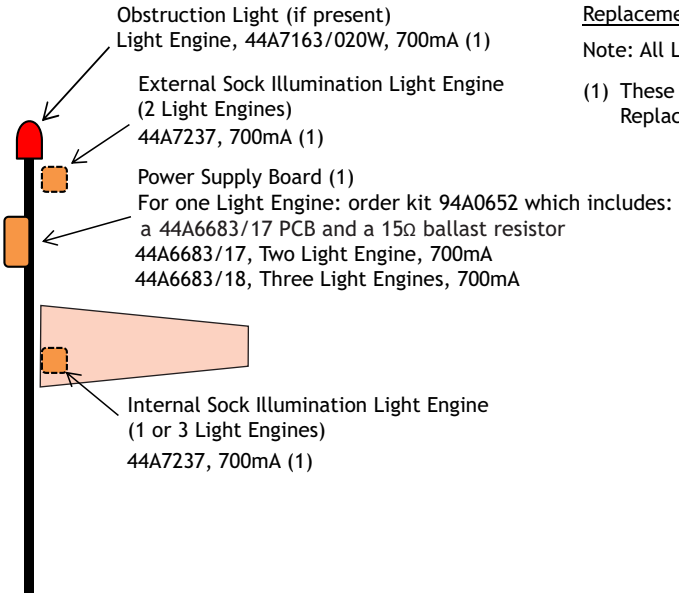
Figure 52: Voltage Powered Wind Cones (700 mA LEDs)



Replacement Guidance

Note: All LEDs are wired in series.

(1) These are all present production. Replace with the same part number.

PARTS

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L-807 Wind Cone
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