

**60C POWER CABINET
AC GENERATOR RECEPTACLE KIT
FIELD INSTALLATION INSTRUCTIONS**

Introduction

This set of instructions contains the necessary information for field installation of the optional AC Generator Receptacle.

Procedures

Before starting installation procedures, check the AC Generator Receptacle Kit (Comcode 107958704) to ensure that all the following parts are included:

ITEM	DESCRIPTION	COMCODE	QTY
1	AC Generator Receptacle Assembly	847793148	1
2	Base Plate Assembly	847899085	1
3	Spacer Panel	847770849	1
4	1/4-20 Flat Head Screws, 1/2 in. Long	900787185	5
5	1/4-20 SEELNUTS	407631647	5
6	Tube of RTV Sealant	901059337	1
7	Conduit/Fitting Assembly/Seal Ring	—	1
8	Instruction Sheet	847714748	1

Note: Comcodes are for replacement purposes only.

Installation

Two different types of installations are described in this instruction sheet:

- Section A describes installing a “new” or “unpowered” cell site
- Section B describes installing a “live” or “powered” cell site.

Note: If the installation is for a “live” cell site, refer to Section B on Page 14 before proceeding.

SECTION A

Attaching AC Generator Receptacle Assembly to Rear of Cabinet:

STEP 1— Viewing the power cabinet from the rear, remove three hex-head (1/4-20) screws located on the rear surface of the cabinet and discard (Figure 1).

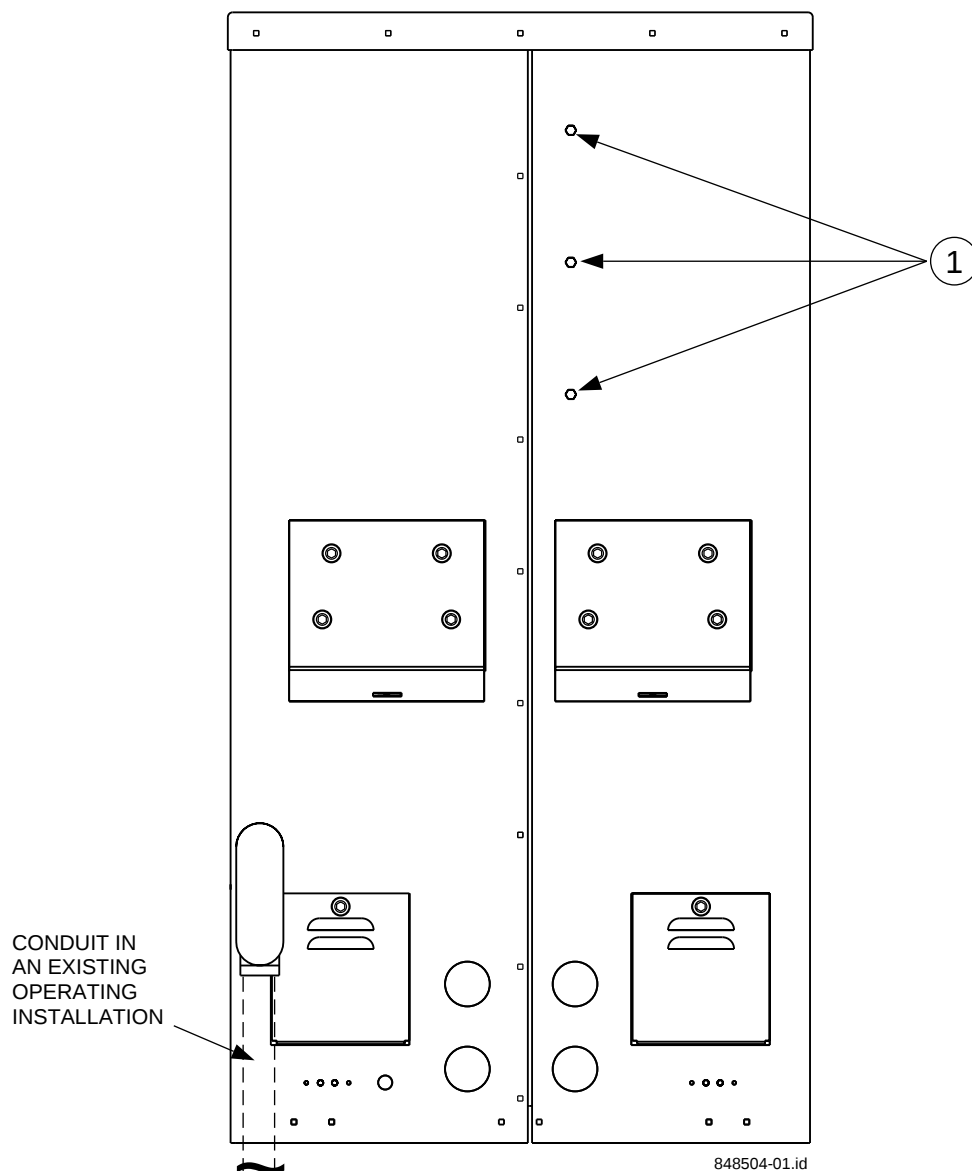


Figure 1. Removal of Rear Bolts

Note: Refer to Figure 2 for Steps 2 through 5.

- STEP 2**—Locate the flat head screws, Item 4, supplied with the kit and attach the Base Plate, Item 2, to the rear of the cabinet using three of the screws supplied (the remaining screws are spares). Make sure that the countersunk holes of the plate are facing outward and the gasket is facing towards the rear of the cabinet. The two carriage bolts on the rear of the power cabinet should protrude through the clearance holes in the plate.
- STEP 3**—Place the Spacer Panel, Item 3, on the base plate via the four studs attached to the base plate. Check the orientation of the spacer panel and make sure that the holes closest to the edge of the panel are at the top when installed.
- STEP 4**—Open the AC Generator Receptacle Assembly, using the tool (Item 8) provided with the kit and remove the inner circuit breaker and AC inlet covers to access the rear of the box.
- STEP 5**—Place the AC Generator Receptacle Assembly on the studs located on the Base Plate previously installed. Attach the box securely to the Base Plate using the four 1/4-20 SEELNUTS, Item 5, provided.

Note: The rubber side of the SEELNUT should be facing toward the panel.

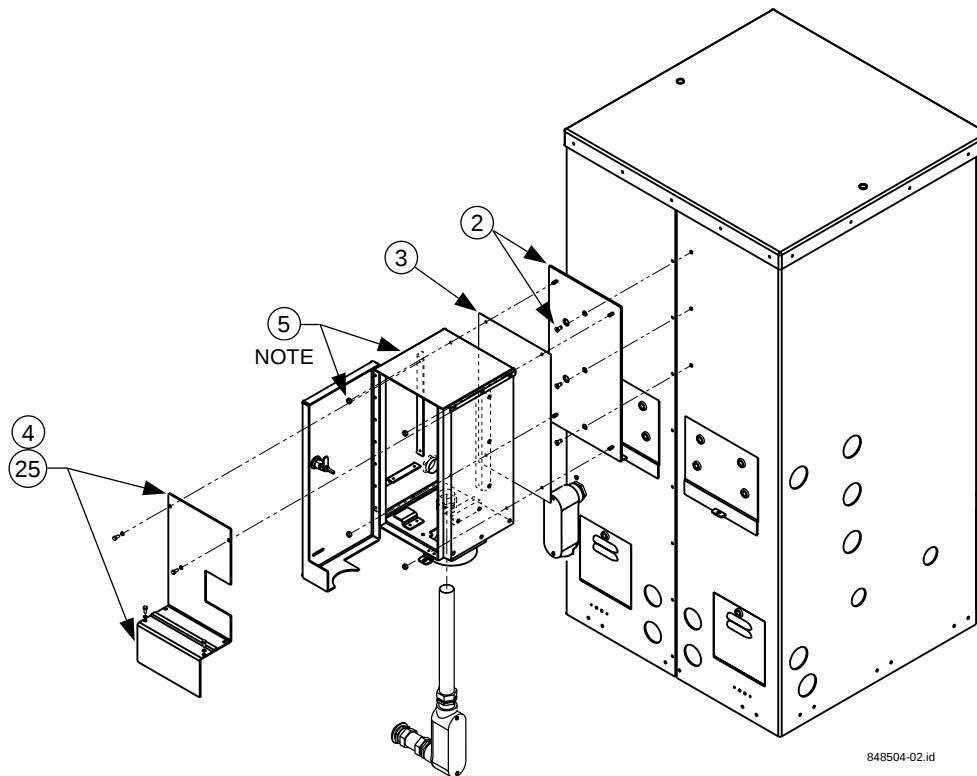


Figure 2. Installation of AC Generator Receptacle Assembly

STEP 6— Apply RTV Silicone, Item 6, around the **TOP AND SIDE EDGES** of the box **ONLY** where it attaches to the surface of the cabinet to provide a continuous seal (Figure 3).

Note: Do not seal bottom edge.

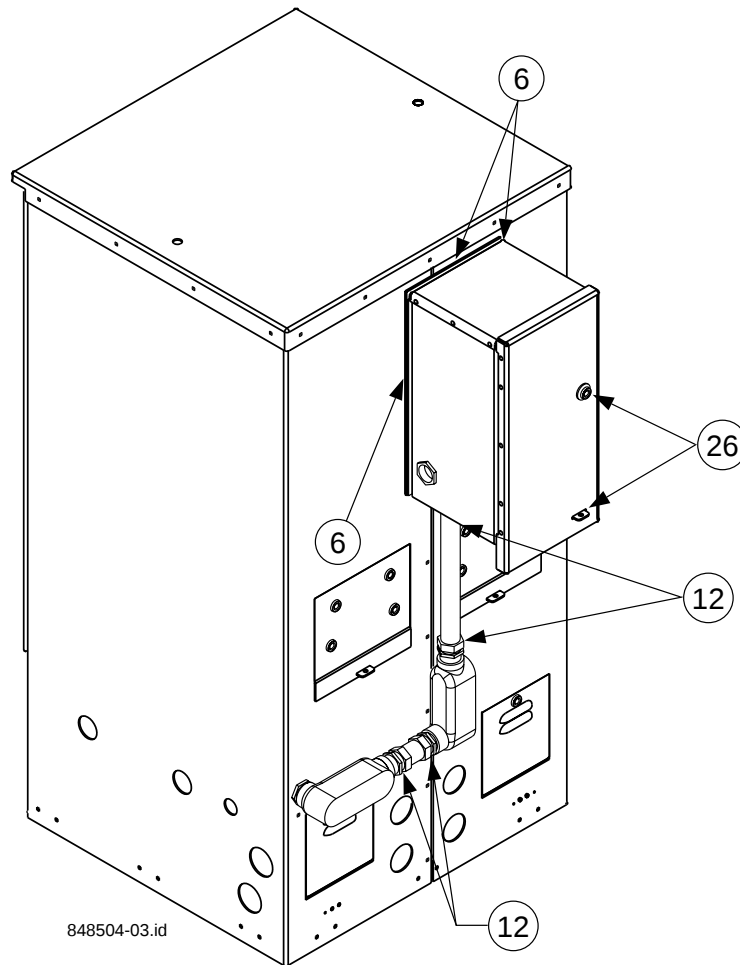


Figure 3. Application of RTV and Securing AC Generator Receptacle Assembly

AC Wire Routing/Conduit Installation:

Note 1: If this application is for a new (nonoperating) installation, proceed to Steps 7 through 26.

Note 2: If this application is to retrofit an existing operating system, go to Section B on Page 14.

Note 3: Refer to Figures 3 through 8 for Steps 7 through 15.

STEP 7— Ensure the AC Generator Receptacle Assembly has been shipped with the AC Utility Breaker, CB1A, in the OFF position (Figure 4).

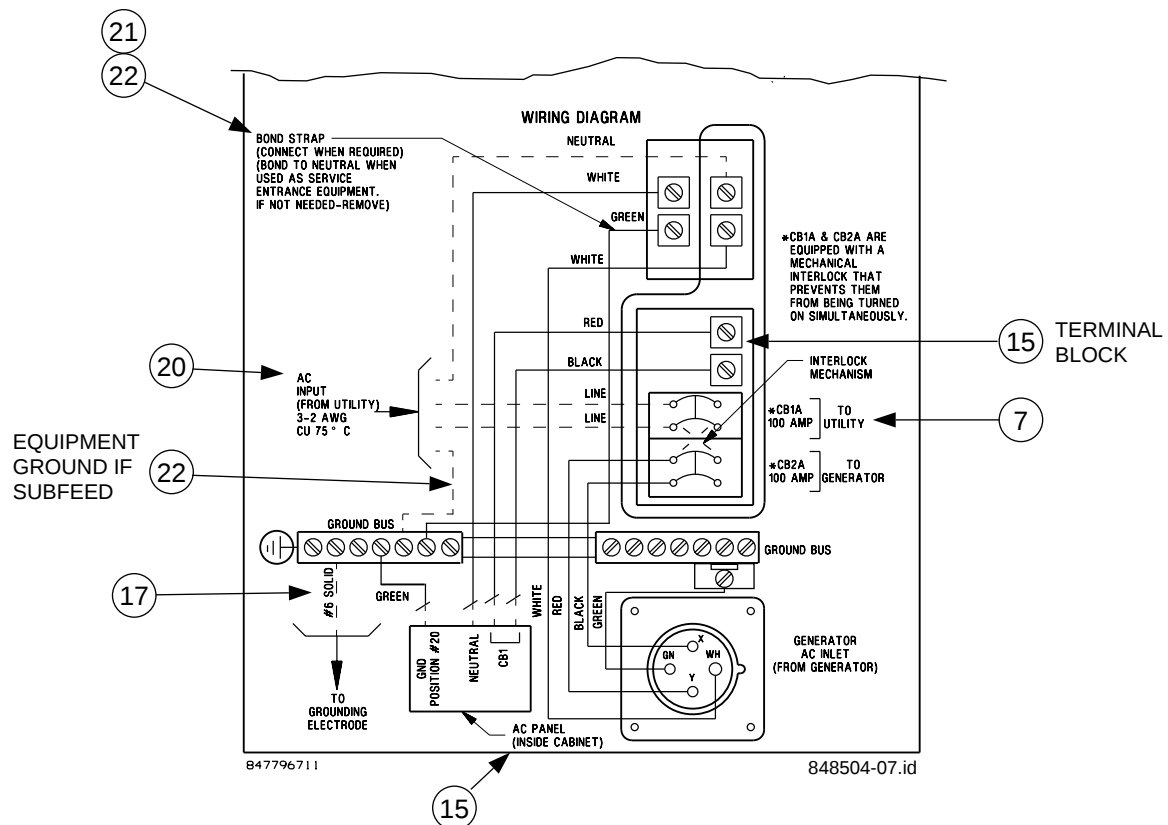


Figure 4. AC Generator Receptacle Schematic

STEP 8— Loosen, but **DO NOT REMOVE**, the compression fitting located in the bottom of the AC Generator Receptacle Assembly (Figure 5). Locate the conduit assembly, Item 7, and push the long piece of conduit up through the compression fitting located in the bottom of the AC Generator Receptacle Assembly. Hand-tighten the fitting, but **DO NOT TIGHTEN WITH TOOL AT THIS TIME**.

Note: Install conductors through conduits only after conduit assembly is completed.

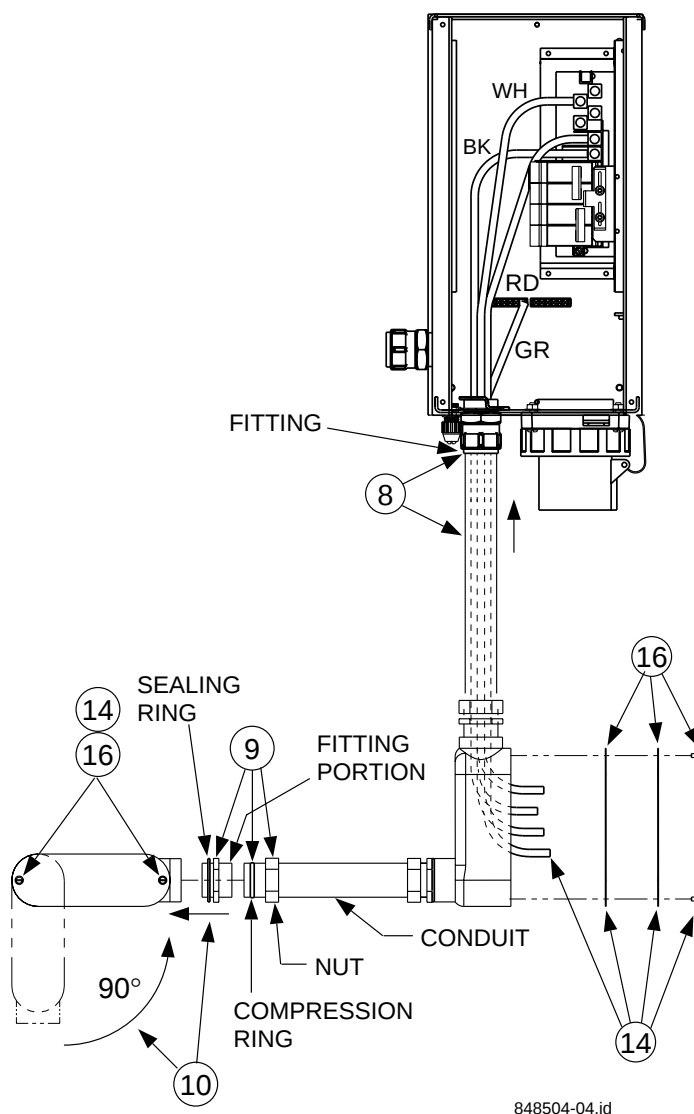


Figure 5. Conduit Installation and Routing of AC Wiring

- STEP 9—** Loosen compression fitting nut located on the end of the shorter piece of conduit and remove the fitting portion keeping the sealing ring in place and ensure the nut and compression ring remain on the conduit (Figure 5).
- STEP 10—** Swing the Power Cabinet AC pull box up 90° into the horizontal position as shown in Figure 5 and attach the fitting removed in Step 9 to the end of the Power Cabinet AC pull box. Ensure the sealing ring is in place between the fitting and the AC pull box.
- STEP 11—** Push the shorter conduit through the fitting installed to the AC pull box in Step 10. Loosen the fitting in the bottom of the AC Generator Receptacle Assembly and adjust the conduit assembly to its proper position. Now tighten both compression fittings using a tool to secure the conduits.
- STEP 12—** Apply RTV silicone around all fitting/conduit interfaces to provide continuous seals (Figure 3).
- STEP 13—** Open the front door of the Power Cabinet with the tool provided and locate the AC Power Panel in the lower right corner of the cabinet (Figure 6). Remove the four cover screws to access the wiring and circuit breakers (Figure 7).
- STEP 14—** Remove both AC pull box covers and gaskets (Figure 5). Locate the AC wires coiled up inside the AC Generator Receptacle Assembly. There should be three No. 2 AWG wires (white, red, black) and one No. 6 wire (green). Feed the AC wires through the bottom of the assembly one at a time and out through the AC pull box located on the conduit assembly (Figure 5). Feed the AC wires through the shorter conduit, one at a time, and into the Power Cabinet. Route these wires to the front of the Power Cabinet over to the AC Power Panel located in the bottom front of the Power Cabinet (Figures 6 and 7).
- STEP 15—** Refer to the AC Generator Receptacle schematic (Figure 4) and the AC Power Panel schematic (Figure 8) and connect the wires as shown. The red and black “hot” wires from the terminal block above CB1A, of the AC Generator Receptacle, should be connected to CB1 of the AC Power Panel. The white “neutral” wire should be connected to the neutral bus, and the green No. 6 ground wire should be connected to position No. 20 of the AC Power Panel ground bus (Figure 8).
- STEP 16—** Replace both of the AC Pull Box covers and gaskets and secure with the screws removed in Step 14 (refer to Figure 5).
- STEP 17—** Route the No. 6 AWG solid ground wire from the grounding electrode (not provided) through the black plastic fitting in the bottom of the AC Generator Receptacle Assembly to the second position on the left ground bus. Connect securely to the ground bus and tighten the black plastic fitting around the ground wire to ensure proper sealing (refer to Figure 9 and schematic in Figure 4).

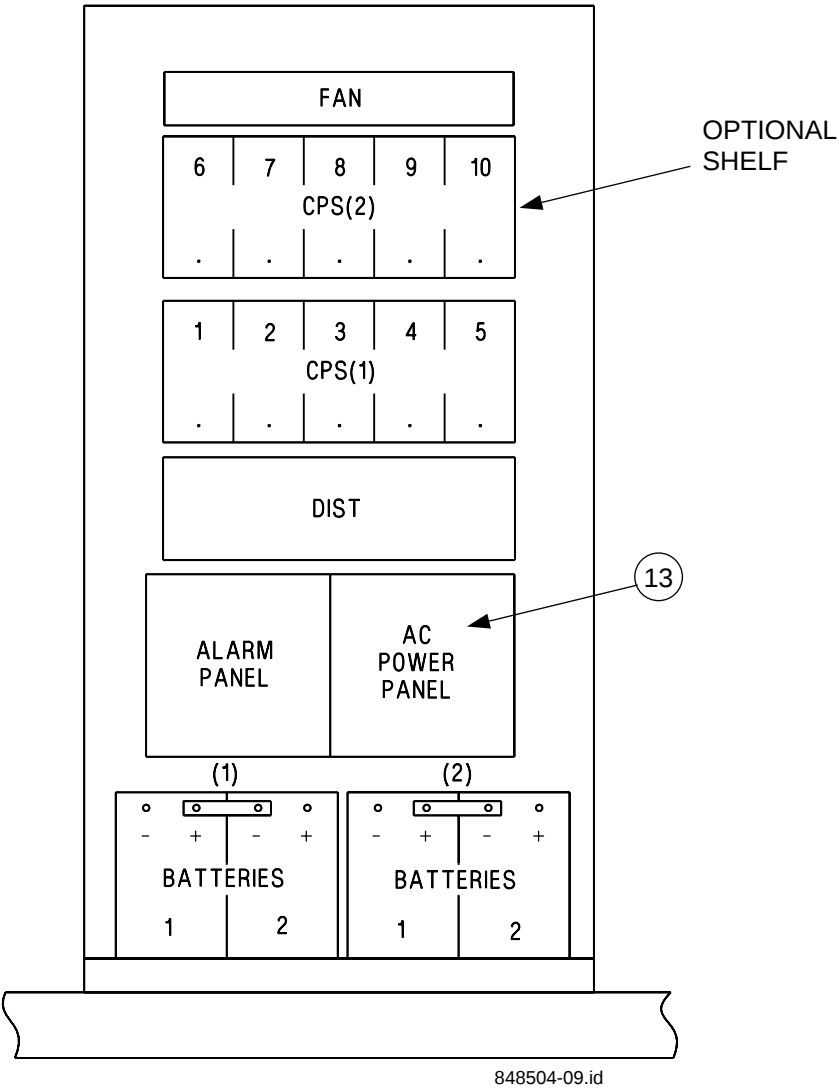


Figure 6. Location of AC Power Panel Inside of Power Cabinet

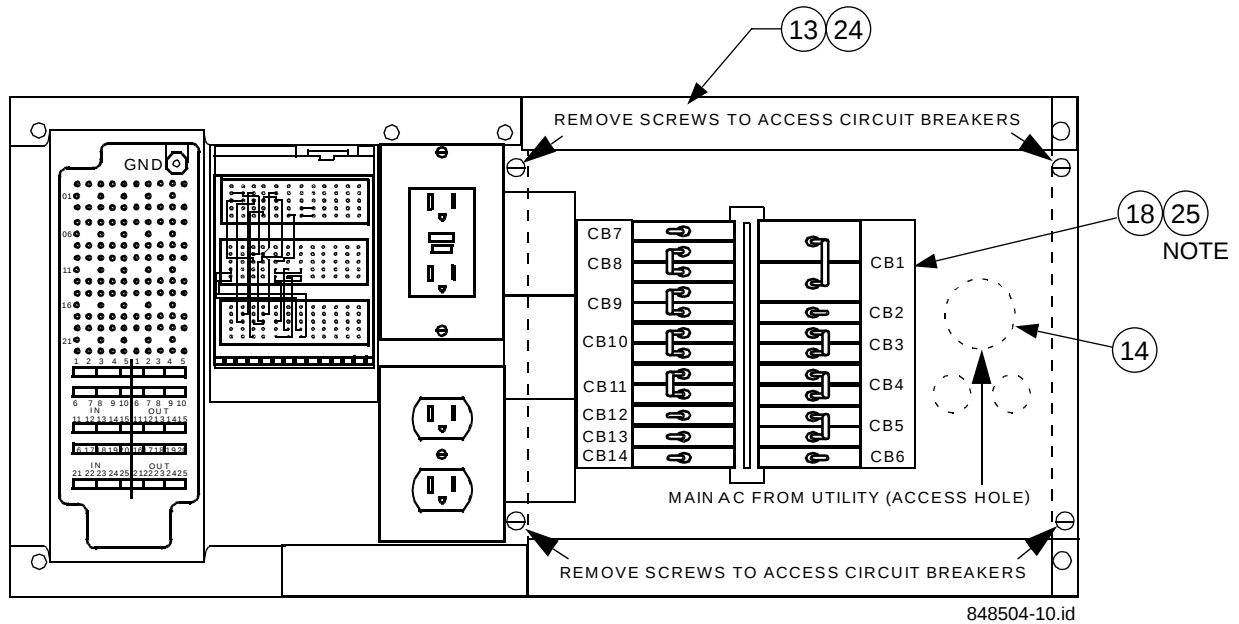


Figure 7. Access to AC Power Panel Circuit Breaker Wiring

AC Utility Service Wire Installation:

STEP 18— Ensure the Main Circuit Breaker, CB1, on the AC power panel inside the power cabinet is in the OFF position (Figure 7).

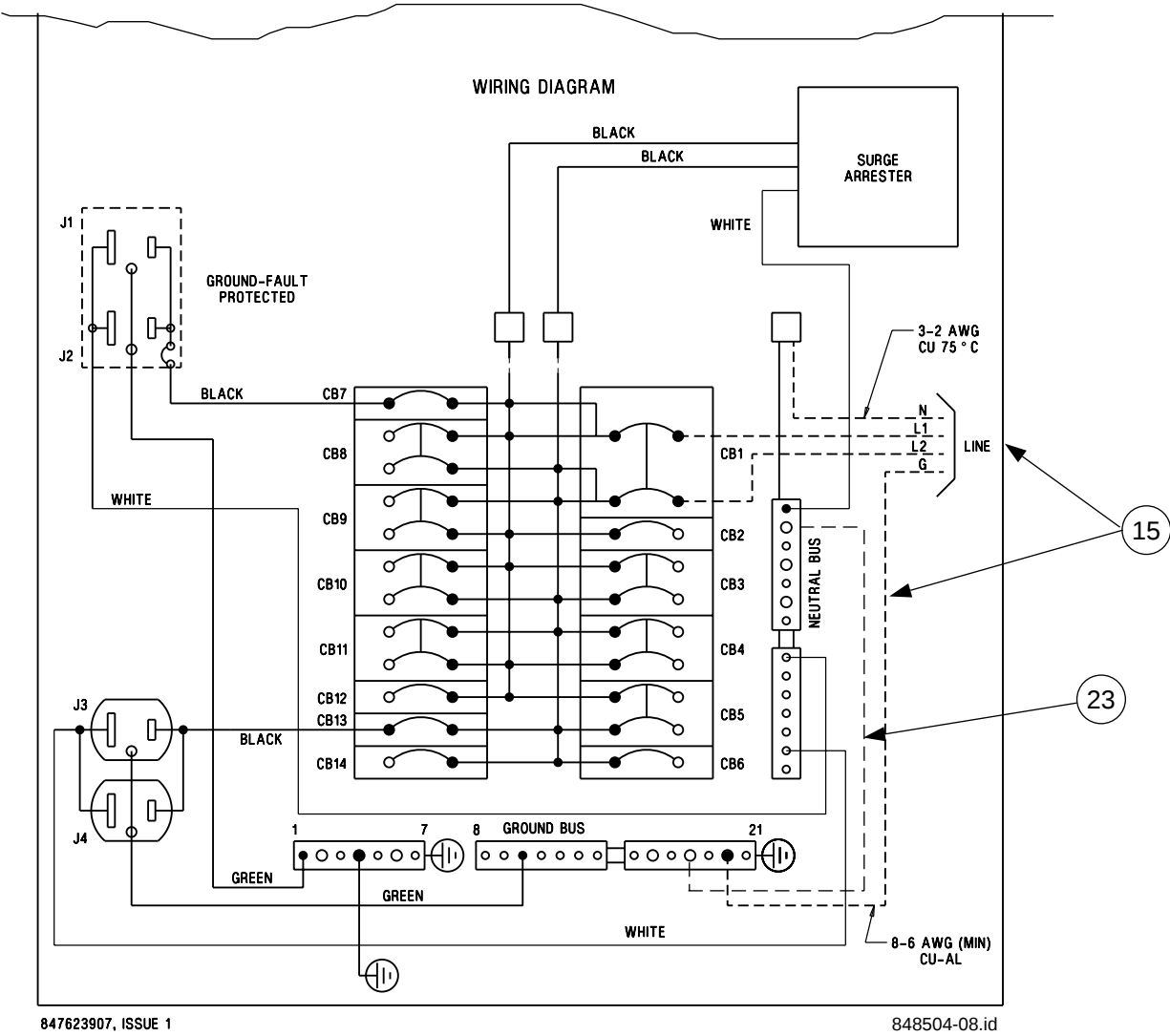


Figure 8. AC Power Panel Schematic

STEP 19— Install the Utility conduit (not provided with the kit) through the compression fitting located on the lower left side of the AC generator receptacle assembly. Loosen, but do not remove the fitting. Insert the conduit through the fitting and tighten with a tool (Figure 9). Apply RTV silicone (provided with kit) around the fitting/conduit interface to provide a continuous seal. Route the utility wires through the conduit and connect as shown.

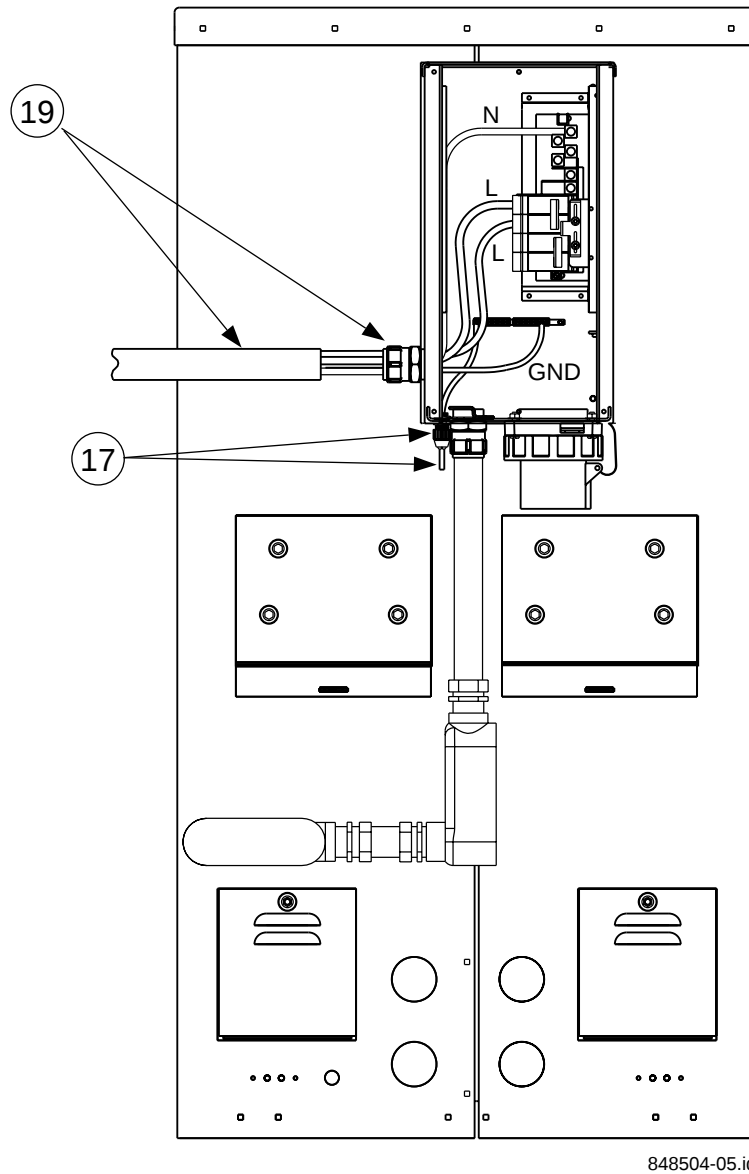


Figure 9. AC Utility Wiring and Conduit Installation

STEP 20— Connect the AC utility wiring to the neutral bus and Circuit breaker CB1A as shown in Figures 4 and 9.

Note: If this Inlet is being installed as “Service Entrance Equipment”, proceed to Step 21. If **not** “Service Entrance Equipment”, skip to Step 22.

STEP 21— For “Service Entrance Equipment”, locate the Green Bond Strap connected to the ground bus and tagged as “BOND STRAP” located in the AC Generator Receptacle Assembly. Connect this to the neutral bus as shown in Figure 4 and proceed to Step 23.

STEP 22— If this is not being installed as “Service Entrance Equipment”, a No. 6 AWG ground wire is required from the AC utility service and should be connected to the ground bus as shown in Figure 4. Remove the Green Bond Strap connected to the ground bus and tagged as “BONDSTRAP” and discard. Proceed to Step 23.

STEP 23— Remove and discard the Bond Strap located in the AC Power Panel located in the Power Cabinet (Figure 8).

Note: Check all wiring to ensure unit is wired correctly before proceeding.

STEP 24— Replace the AC Power Panel Cover with the screws removed in Step 13 (Figure 7).

STEP 25— Replace the inner circuit breaker and AC inlet covers, removed in Step 4, with the hardware provided (refer to Figure 2).

Note: If the system is to be powered-up at this time, ensure that the Interlock Mechanism is secured in the lowest position, CB1A is in the ON position, CB2A is in the OFF position (Figure 10), and CB1 of the AC Power Panel is in the ON Position (Figure 7).

STEP 26— Close the front cover of the AC Generator Receptacle Assembly and secure using the tool, Item 8, provided with the kit. Install a padlock (not provided) if required (Figure 3).

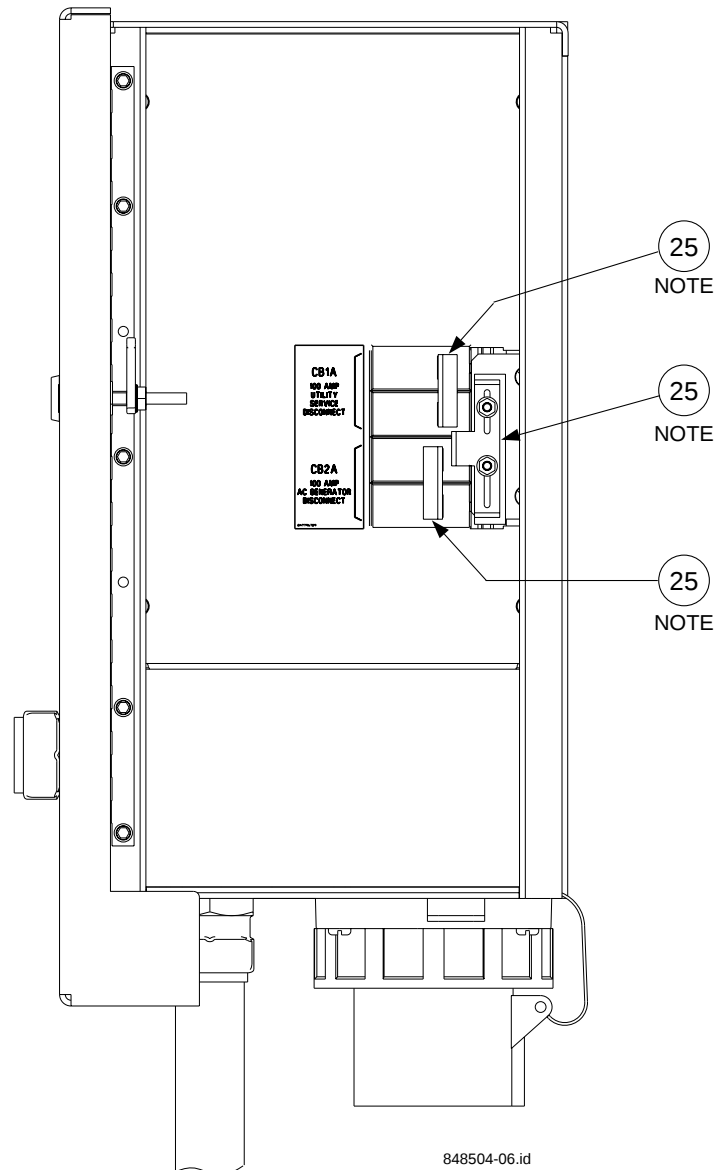


Figure 10. CB1A and CB2A Locations

SECTION B

AC Wiring to an Existing and Operating System:

Warning: The safest condition for working on this equipment is with the equipment in the de-energized state. If the equipment is to be installed to an operating system, the owner/operator of the system must be consulted. The owner/operator must provide approval whether the system shall be de-energized, or the work is to be performed while the system is energized. The procedures in this manual cover installation of the equipment. It does not include safety procedures. When this manual is used to install equipment to energized circuits or equipment, the appropriate safety procedures must be followed.

Some things to be advised of are:

- Only qualified personnel should install and service this equipment. Personnel must be properly trained and follow appropriate safety practices and procedures.
- Hazardous energy and voltages may be present in the equipment and on interface cables, and can cause serious injury or death if safety precautions are ignored.
- Due to the possibility of contacting energized circuits during these installation procedures, all tools and equipment must be insulated in an approved manner.

All safety practices of your company and any governing bodies (for example, OSHA) should be followed.

Notice: Since every Cell Site location is unique, careful evaluation of the site must be performed to determine the safest and most practical method to install the AC Generator Receptacle to the 60C Power Cabinet at an operating Cell Site.

Some things to be evaluated are:

- Safety of installation personnel.
- The effect on the customer if the Cell is taken out-of-service.
- Risk of damage to the equipment from accidental short circuits.
- Job planning to reduce the required AC service downtime.
- Assessed need for temporary additional DC power.

This is a partial list of considerations to be made. Ultimately, the owner/operator of Cell Site must be consulted and decide how the equipment will be installed.

Note: Perform Steps 1 through 6 in **Section A** before performing the following steps.

STEP 1— Turn off the external AC service to the Power Cabinet. The system will now operate on batteries for the Initial Battery Reserve time listed in the table below.

STEP 2— Open the front door of the Power Cabinet with the tool provided in the kit and turn off the main breaker, CB1, located in the AC Power Panel at the bottom of the Power Cabinet (refer to Figures 6 and 7).

STEP 3— Open the front cover of the AC Power Panel by removing the four cover screws to access the wiring and circuit breakers (Figure 7).

STEP 4— Disconnect the existing AC Service Wiring and Conduit. Also, disconnect the ground electrode conductor (refer to Figures 1 and 8).

STEP 5— Proceed to Section A, and perform Steps 7 through 26.

	No. of Battery Strings	Initial Battery Reserve (Hrs)						End of Life Battery Reserve (Hrs)*					
		Load (kW)						Load (kW)					
		1	2	3	4	5	6	1	2	5	4	5	6
Power Cabinet	2	5.2	2.2	1.3	0.9	0.7	0.6	3.9	1.7	1.0	0.7	0.5	0.4
Fully Loaded Battery Backup Cabinet (10 Strings)	3	8.6	3.6	2.2	1.5	1.2	0.9	6.5	2.7	1.7	1.2	0.9	0.7
	4	12.4	5.2	3.1	2.2	1.7	1.3	9.4	3.9	2.4	1.7	1.3	1.0
	5	16.4	6.9	4.1	2.9	2.2	1.7	12.4	5.2	3.1	2.2	1.7	1.3
	6	20.6	8.6	5.2	3.6	2.7	2.2	15.5	6.5	3.9	2.7	2.1	1.7
	7	24.9	10.5	6.3	4.4	3.3	2.7	18.9	7.9	4.8	3.3	2.5	2.0
	8	29.5	12.4	7.5	5.2	3.9	3.1	22.3	9.4	5.6	3.9	3.0	2.4
	9	34.1	14.3	8.6	6.0	4.6	3.6	25.8	10.9	6.5	4.6	3.4	2.7
	10	38.9	16.4	9.9	6.9	5.2	4.1	29.5	12.4	7.5	5.2	3.9	3.1
	11	43.9	18.4	11.1	7.7	5.9	4.7	33.2	13.9	8.4	5.9	4.4	3.5
	12	48.9	20.6	12.4	8.6	6.5	5.2	37.0	15.5	9.4	6.5	4.9	4.0

* End-of-Life Battery Reserve is estimated at 80 percent of Initial Battery Reserve.