

Details on Sheet 4

Details on Sheet 4

Details on Sheet 4

Inverter AC output conductors, to be combined in AC Output Panel

Supply-side tap

Inverter AC input conductors, distributed from AC input panel via breakers and separate sets of conductors to each Radian

FM80 DC- and DC+ outputs are routed (1) to GSLC's for GFDI and OCPD breakers, then routed to DCBS (2). If a DC Panelboard is used (Page 3) only DC- needs to be routed to FP3's for the GFDI's.

Details on Sheets 5-7

Charge Controller Conductors

Details on Sheet 2 or 3

Inverter DC conductors. Two per inverter. Only three sets shown here for clarity

Notes:

A) GSLCs:

- A1) have breaker spaces for up to four charge controllers
- A2) are used as a raceway for AC in and AC out conductors
- A3) house each inverter's:
 - a) AC input breakers
 - b) AC output breakers
 - c) battery DC breakers
- A4) house the FNDC battery monitor if the system has one

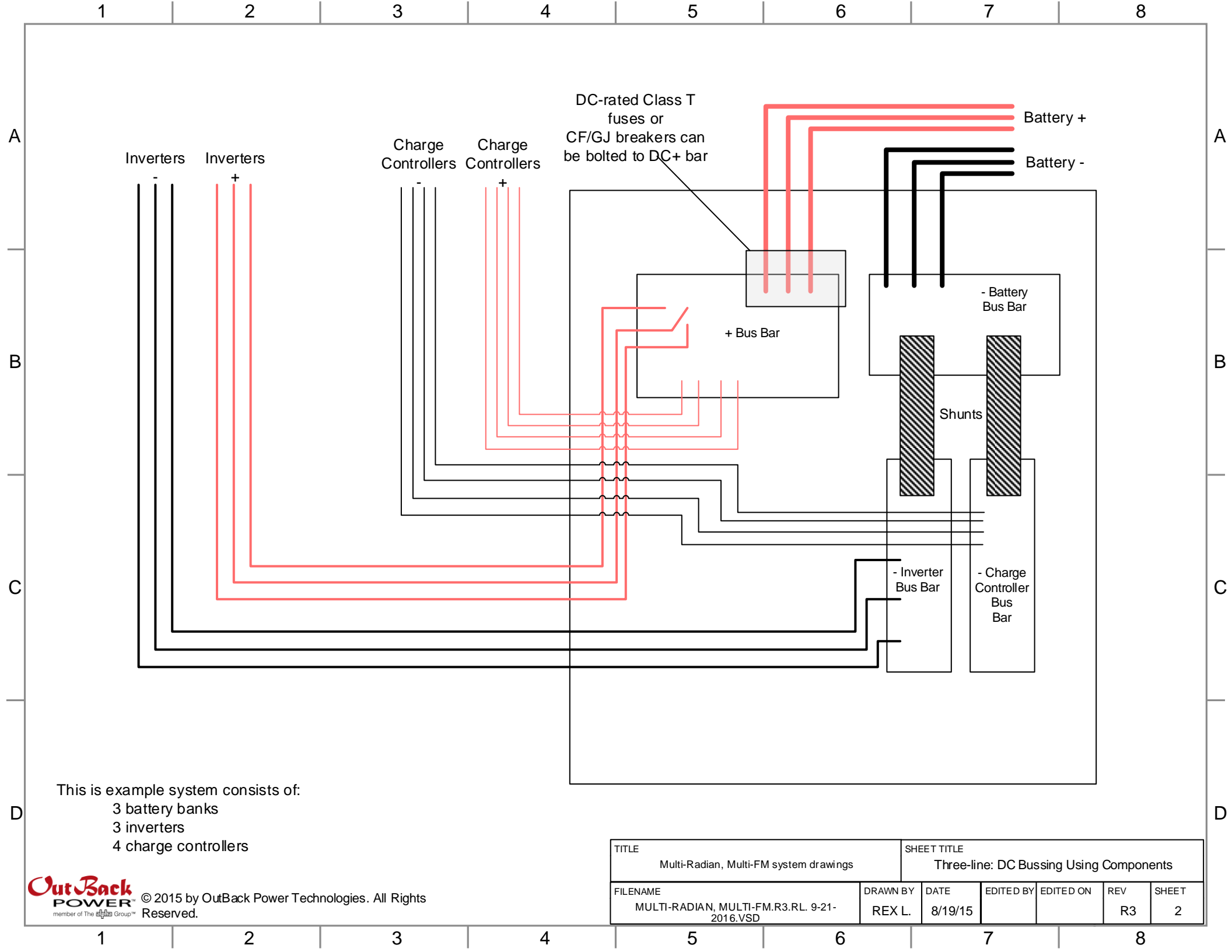
B) Bypass switch

- B1) Rated for 50A x QTY of inverters.
- B2) Requires two poles for 120/240V systems, one pole for 230V systems, and 3 poles for 230V/400V systems.

<p>Document description: This drawing set is a guide for wiring for up to ten Radian inverter/chargers. PV charge controller wiring is also shown on its own sheet. Always check with AHJ for specific installation requirements.</p>		<p>Sheet list: 1) System Block Diagram & cover sheet 2) Three-line: DC Bussing Using Components 3) Three-line: DC Bussing Using DC Panelboard 4) Three-line: AC Combining Panels and Bypass Switches 5) Three-line: GSLC 120/240V 6) Three-line: GSLC 230V 7) Three-line: GSLC DC Wiring 8) HUB wiring</p>				
<p>TITLE Multi-Radian, Multi-FM system drawings</p>		<p>SHEET TITLE System Block Diagram & Cover Sheet</p>				
<p>FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD</p>	<p>DRAWN BY REX L.</p>	<p>DATE 8/19/15</p>	<p>EDITED BY</p>	<p>EDITED ON</p>	<p>REV R3</p>	<p>SHEET 1</p>



© 2015 by OutBack Power Technologies. All Rights Reserved.



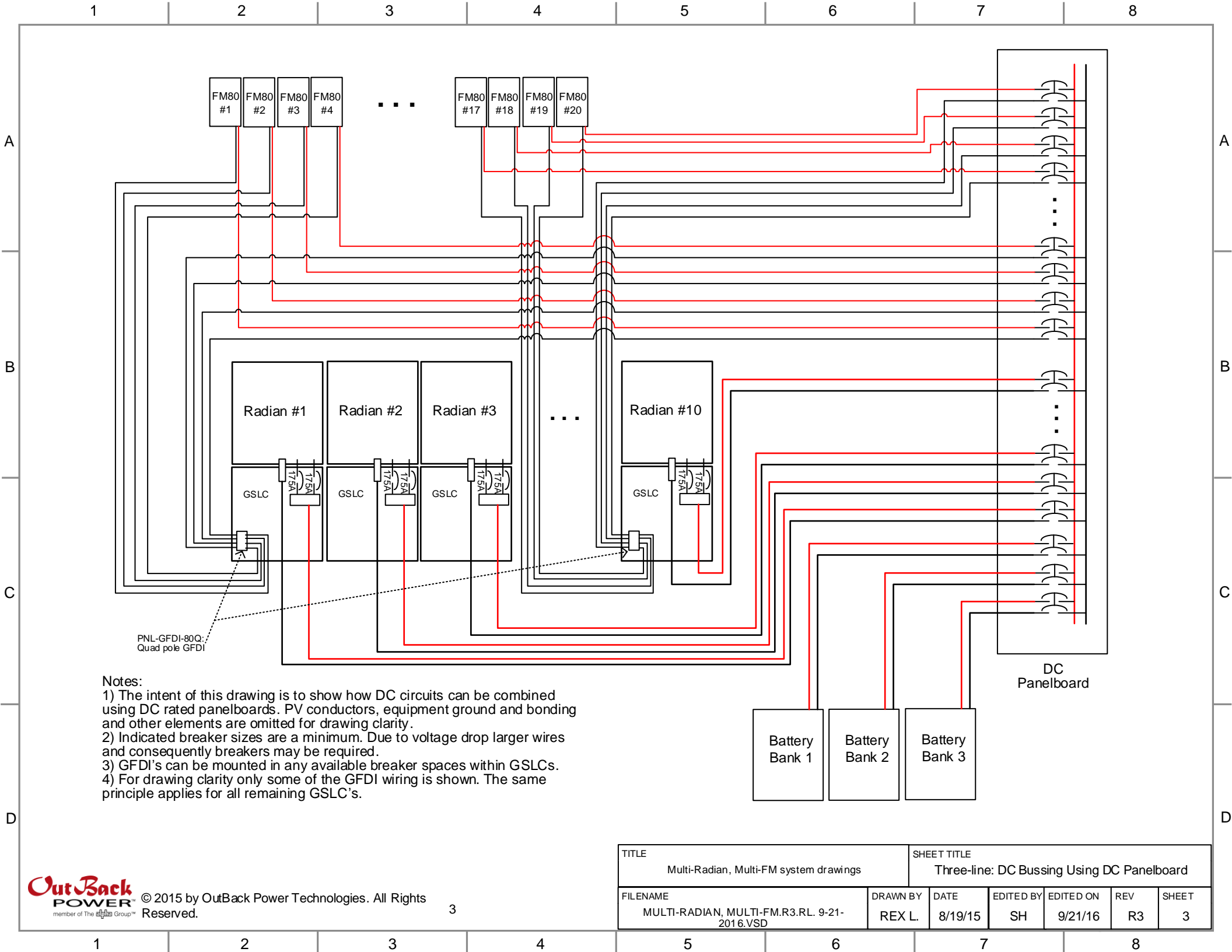
This is example system consists of:

- 3 battery banks
- 3 inverters
- 4 charge controllers



© 2015 by OutBack Power Technologies. All Rights Reserved.

TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE Three-line: DC Bussing Using Components			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY	EDITED ON	REV R3	SHEET 2	



PNL-GFDI-80Q:
Quad pole GFDI

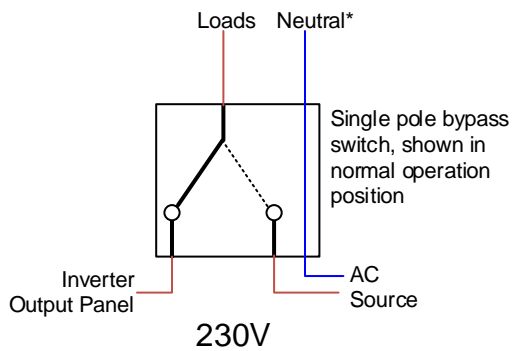
Notes:

- 1) The intent of this drawing is to show how DC circuits can be combined using DC rated panelboards. PV conductors, equipment ground and bonding and other elements are omitted for drawing clarity.
- 2) Indicated breaker sizes are a minimum. Due to voltage drop larger wires and consequently breakers may be required.
- 3) GFDI's can be mounted in any available breaker spaces within GSLCs.
- 4) For drawing clarity only some of the GFDI wiring is shown. The same principle applies for all remaining GSLC's.

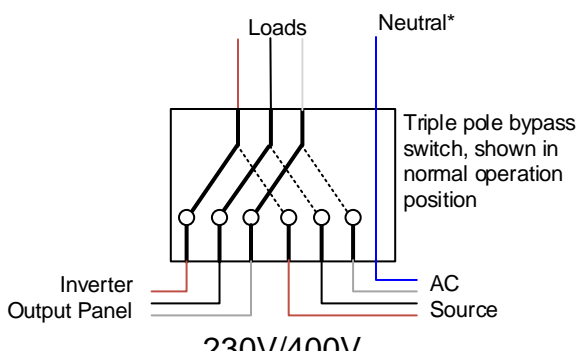
TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE Three-line: DC Bussing Using DC Panelboard			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY SH	EDITED ON 9/21/16	REV R3	SHEET 3	



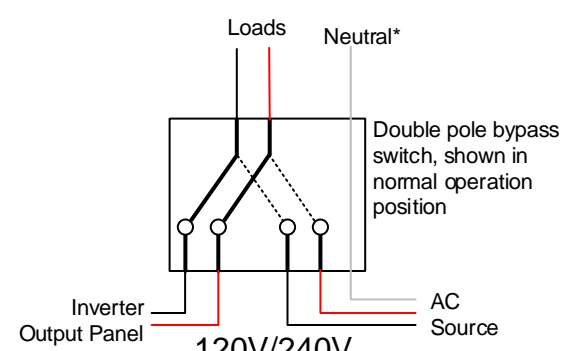
© 2015 by OutBack Power Technologies. All Rights Reserved.



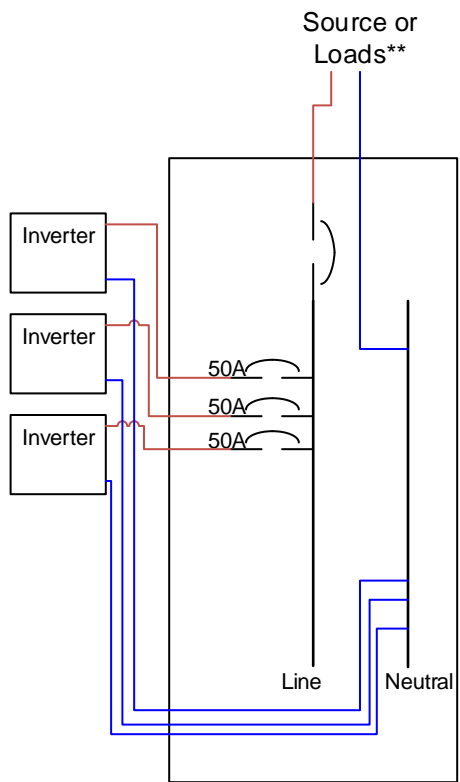
230V



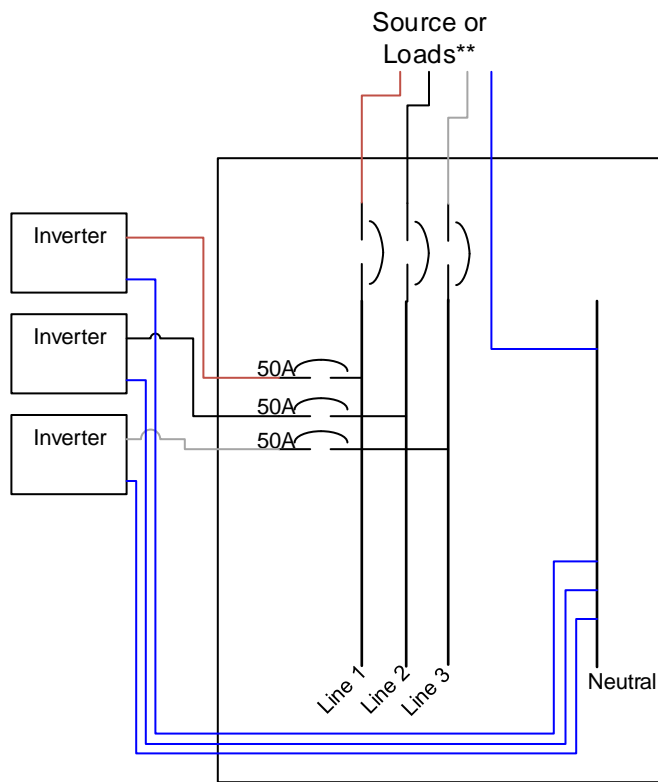
230V/400V



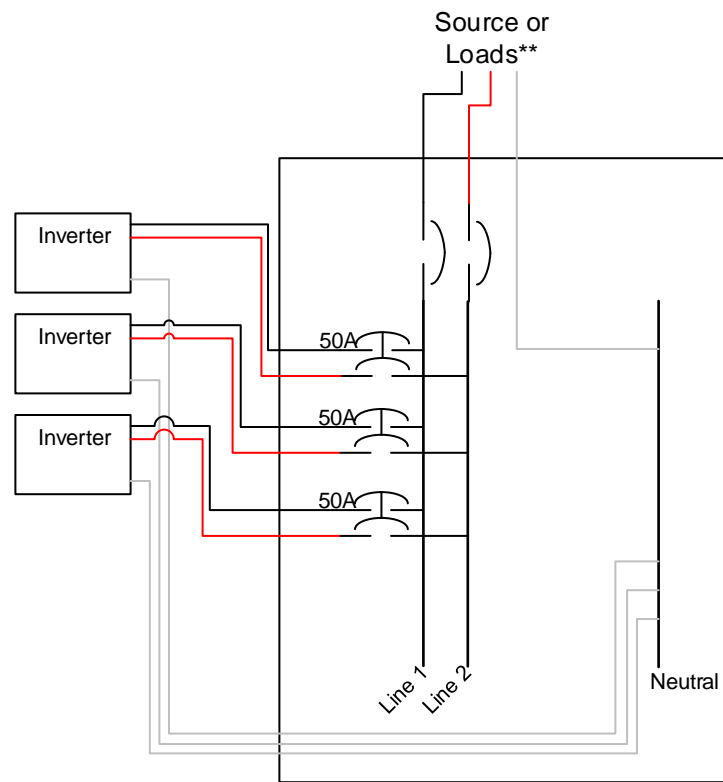
120V/240V



230V



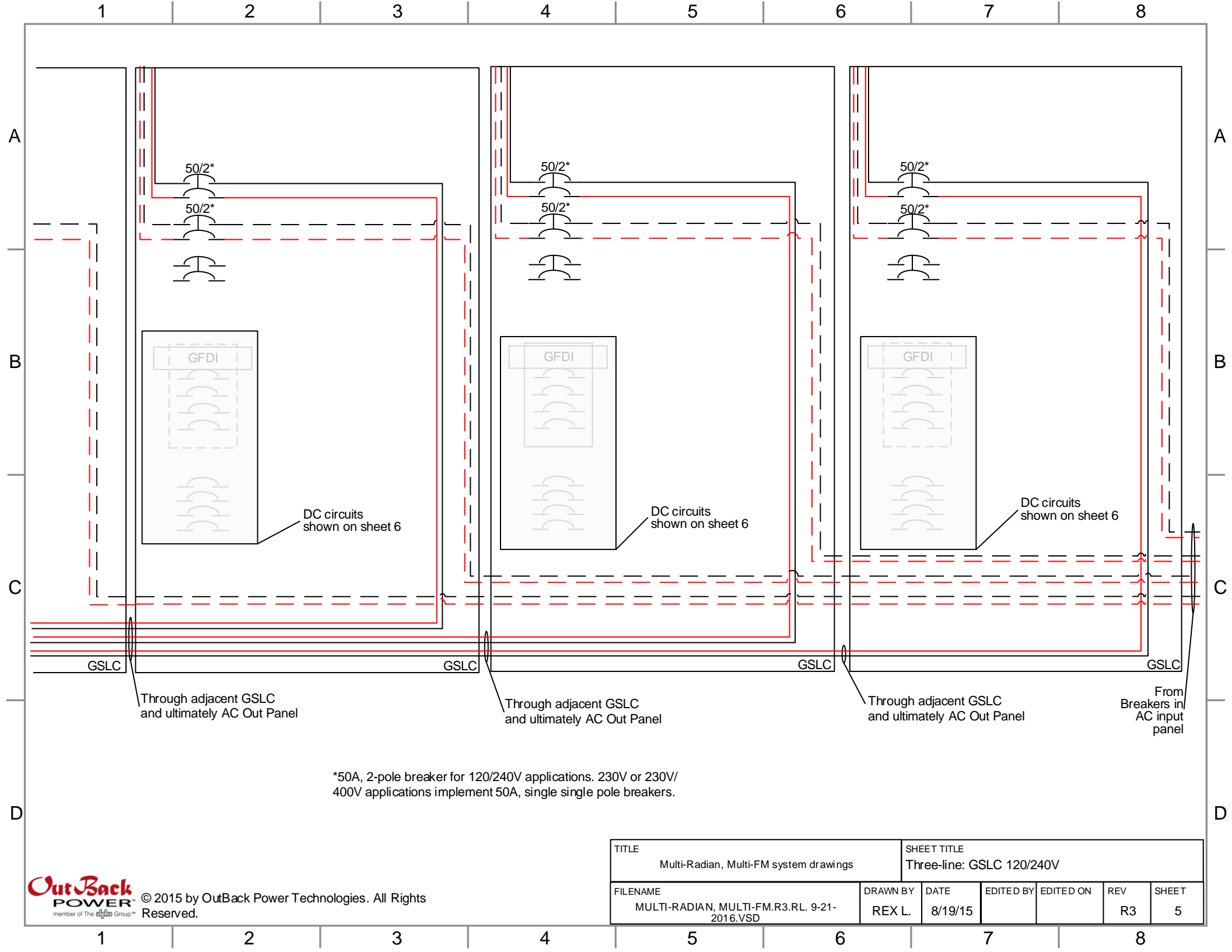
230V/400V



120V/240V

Notes:
 *Since neutral is not switched, it passes through input to loads, regardless of bypass switch position.
 **For input panels, breakers distribute source power to inverters. For output panels, breakers consolidate inverter outputs into a single output.
 ***Equipment grounding conductors omitted for drawing clarity

TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE Three-line: AC Combining Panels and Bypass Switches			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY	EDITED ON	REV R3	SHEET 4	



DC circuits shown on sheet 6

DC circuits shown on sheet 6

DC circuits shown on sheet 6

Through adjacent GSCL and ultimately AC Out Panel

Through adjacent GSCL and ultimately AC Out Panel

Through adjacent GSCL and ultimately AC Out Panel

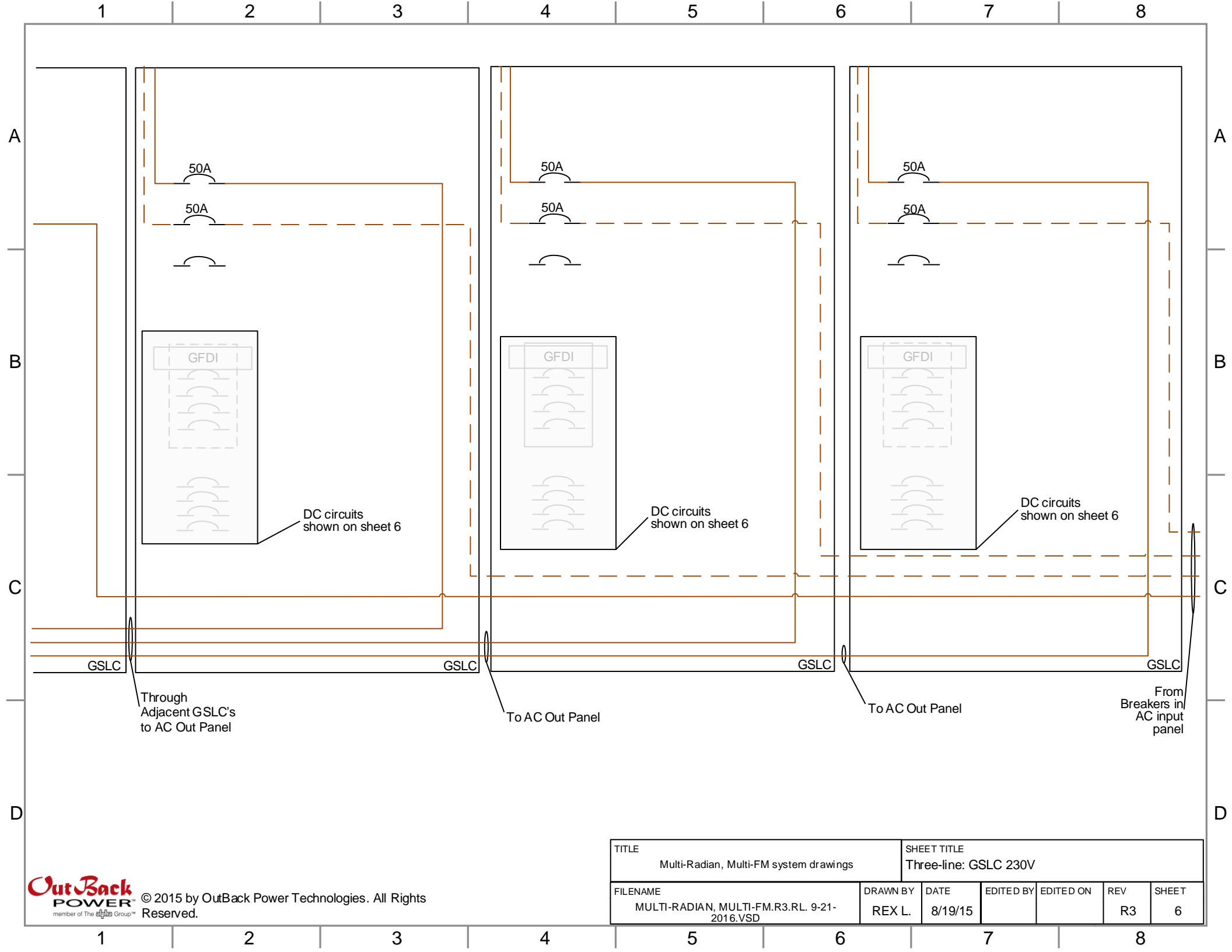
From Breakers in AC input panel

*50A, 2-pole breaker for 120/240V applications. 230V or 230V/400V applications implement 50A, single single pole breakers.

TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE Three-line: GSCL 120/240V			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY	EDITED ON	REV R3	SHEET 5	



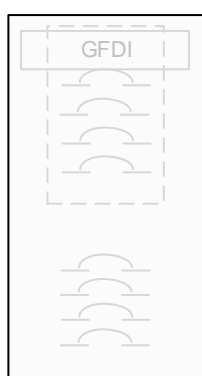
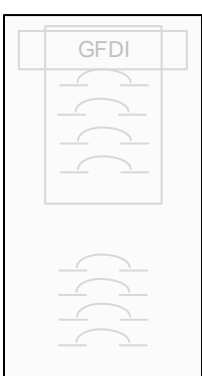
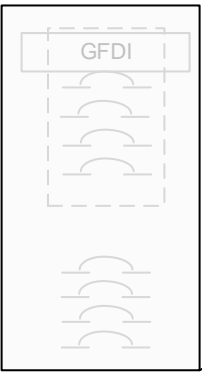
© 2015 by OutBack Power Technologies. All Rights Reserved.



50A
50A

50A
50A

50A
50A



DC circuits shown on sheet 6

DC circuits shown on sheet 6

DC circuits shown on sheet 6

GSLC

GSLC

GSLC

GSLC

Through Adjacent GSLC's to AC Out Panel

To AC Out Panel

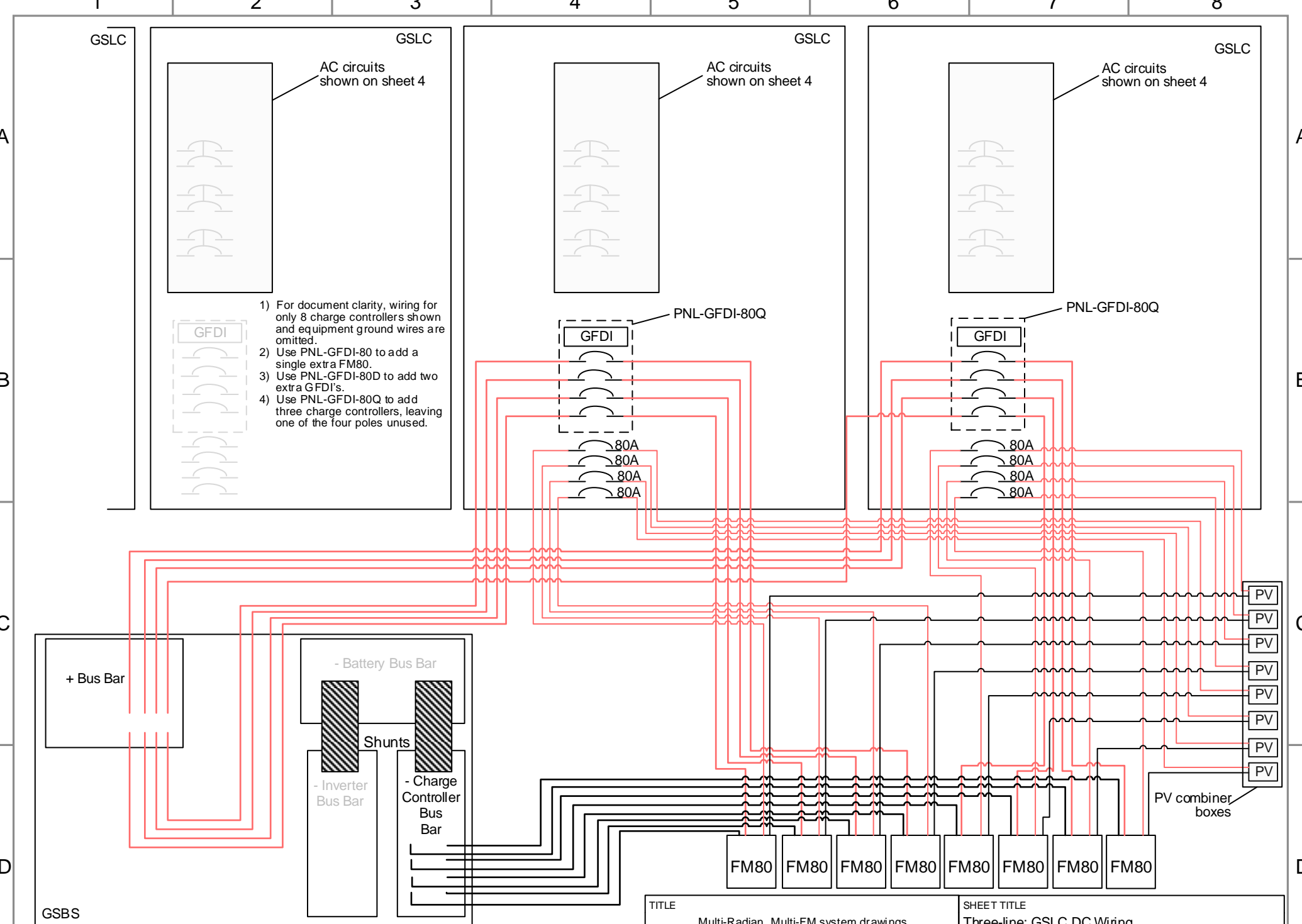
To AC Out Panel

From Breakers in AC input panel

TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE Three-line: GSLC 230V			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY	EDITED ON	REV R3	SHEET 6	



© 2015 by OutBack Power Technologies. All Rights Reserved.

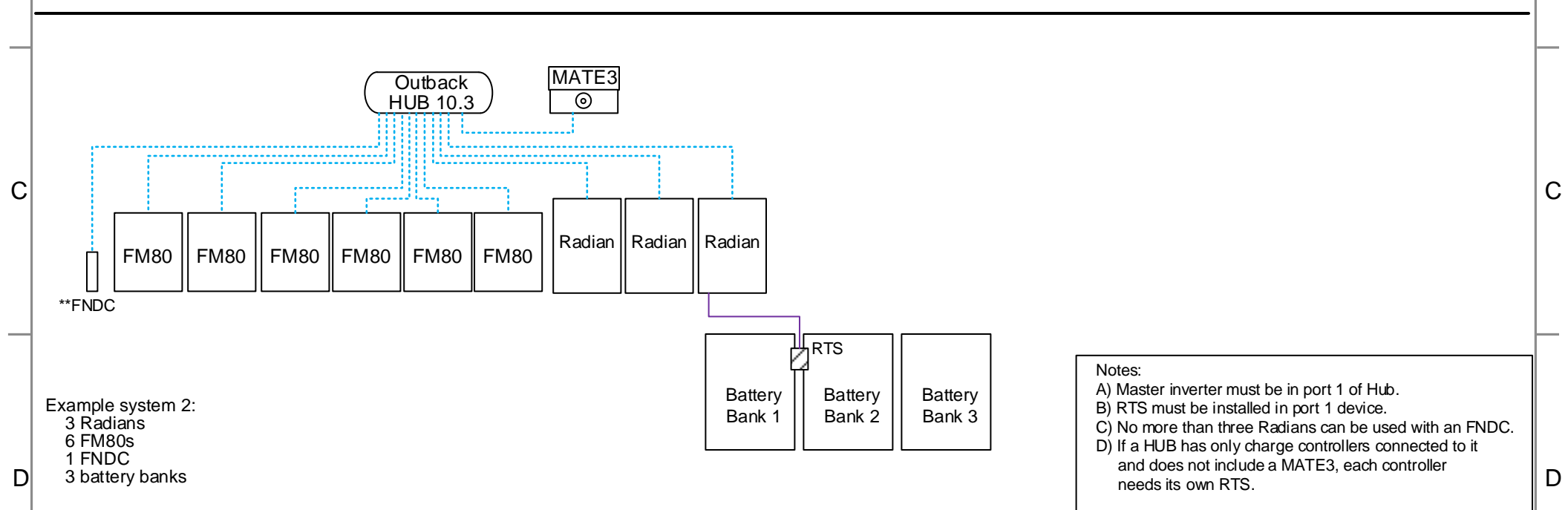
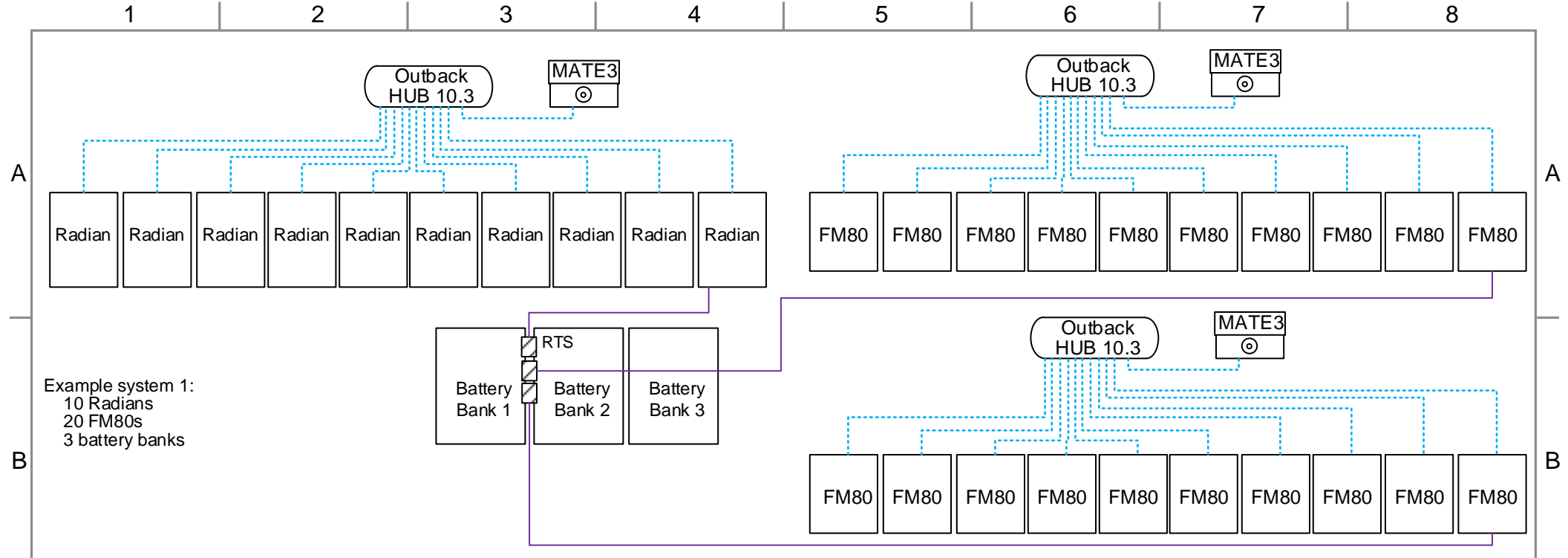


- 1) For document clarity, wiring for only 8 charge controllers shown and equipment ground wires are omitted.
- 2) Use PNL-GFDI-80 to add a single extra FM80.
- 3) Use PNL-GFDI-80D to add two extra GFDI's.
- 4) Use PNL-GFDI-80Q to add three charge controllers, leaving one of the four poles unused.

TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE Three-line: GSLC DC Wiring			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY	EDITED ON	REV R3	SHEET 7	



© 2015 by OutBack Power Technologies. All Rights Reserved.



TITLE Multi-Radian, Multi-FM system drawings				SHEET TITLE HUB Wiring			
FILENAME MULTI-RADIAN, MULTI-FM.R3.RL. 9-21-2016.VSD	DRAWN BY REX L.	DATE 8/19/15	EDITED BY	EDITED ON	REV R3	SHEET 8	