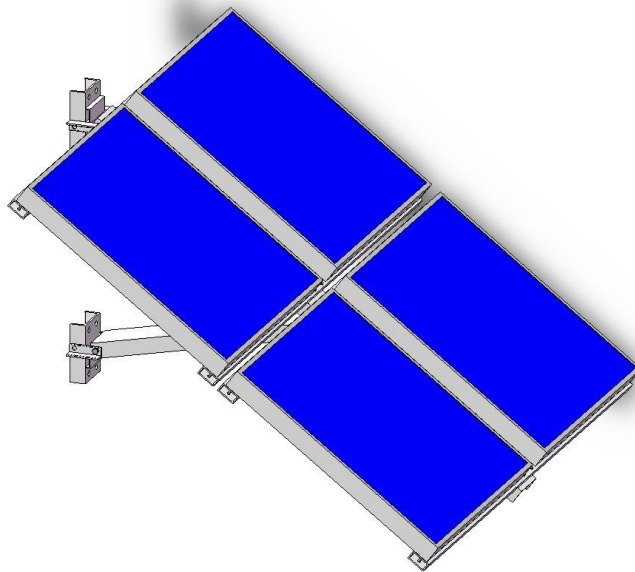




FEDERAL SIGNAL
Safety and Security Systems

Solar Power Systems

Models: PVS220W-24 and PVS220W-48



Installation Manual

255379
Rev. D0 1015
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Limited Warranty

The Alerting and Notification Systems Division of **Federal Signal Corporation (Federal)** warrants each new product to be free from defects in material and workmanship, under normal use and service, for a period of two years on parts replacement and factory-performed labor (one year for Informer, EAS, and Federal software products) from the date of delivery to the first user-purchaser. Federal warrants every 2001, Eclipse and 508 Siren (Top of pole only) to be free from defects in material, per our standard warranty, under normal use and service for a period of five years on parts replacement.

During this warranty period, the obligation of Federal is limited to repairing or replacing, as Federal may elect, any part or parts of such product which after examination by Federal, are determined to be defective in material and/or workmanship.

Federal will provide warranty for any unit, which is delivered, transported prepaid, to the Federal factory or designated authorized warranty service center for examination and such examination reveals a defect in material and/or workmanship.

This warranty does not cover travel expenses, the cost of specialized equipment for gaining access to the product, or labor charges for removal and re-installation of the product. The Federal Signal Corporation warranty shall not apply to components or accessories that have a separate warranty by the original manufacturer, such as, but not limited to batteries.

Federal will provide on-site warranty service during the first 60-days after the completion of the installation, when Federal has provided a turn-key installation including optimization and/or commissioning services.

This warranty does not extend to any unit which has been subjected to abuse, misuse, improper installation or which has been inadequately maintained, nor to units which have problems related to service or modification at any facility other than the Federal factory or authorized warranty service centers. Moreover, Federal shall have no liability with respect to defects arising in Products through any cause other than ordinary use (such as, for example, accident, fire, lightning, water damage, or other remaining acts of God).

THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL FEDERAL BE LIABLE FOR ANY LOSS OF PROFITS OR ANY INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY SUCH DEFECT IN MATERIAL WORKMANSHIP.



2645 Federal Signal Drive, University Park, IL 60484-3167

Phone: 708-534-3400

Website: <http://www.alertnotification.net>

IMPORTANT NOTICE

Federal Signal reserves the right to make changes to devices and specifications detailed in the manual at any time in order to improve reliability, function or design. The information in this book has been carefully checked and is believed to be accurate; however, no responsibility is assumed for any inaccuracies.

SAFETY NOTICES

People's lives depend on your selection of suitable equipment and installation sites and your safe installation, service, and operation of our products. Federal Signal recommends the following publications from the Federal Emergency Management Agency for assistance with planning an outdoor warning system: 1. The "Outdoor Warning Guide (CPG 1-17), 2. "Civil Preparedness, Principles of Warning" (CPG 1-14), 3. FEMA-REP-1, Appendix 3 (Nuclear Plant Guideline), and 4. FEMA-REP-10 (Nuclear Plant Guideline). Contact Federal Signal at: <http://www.alertnotification.net> or 1-800-524-3021 for further information about these publications.

It is important to read, understand and follow all instructions shipped with this product. In addition, listed below are some other important safety instructions and precautions you should follow.

PLANNING

- If suitable warning equipment is not selected, the installation site for the siren is not selected properly or the siren is not installed properly, it may not produce the intended optimum audible warning. Follow Federal Emergency Management Agency (FEMA) recommendations.
- If sirens are not activated in a timely manner when an emergency condition exists, they cannot provide the intended audible warning. It is imperative that knowledgeable people, who are provided with the necessary information, are available at all times to authorize the activation of the sirens.
- When sirens are used out of doors, people indoors may not be able to hear the warning signals. Separate warning devices or procedures may be needed to effectively warn people indoors.
- The sound output of sirens is capable of causing permanent hearing damage. To prevent excessive exposure, carefully plan siren placement, post warnings, and restrict access to areas near sirens.
- Activating the sirens may not result in people taking the desired actions if those to be warned are not properly trained about the meaning of siren sounds. Siren users should follow FEMA recommendations and instruct those to be warned of correct actions to be taken.
- A siren that does not work will not provide any warning. After installation, service, or maintenance, test the siren system to confirm that it is operating properly. Test the system regularly to confirm that it will be operational in an emergency.
- If future service and operating personnel do not have these instructions to refer to, the siren system may not provide the intended audible warning and service personnel may be exposed to death, permanent hearing loss, or other bodily injury. File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to new recruits and trainees. Also give a copy to anyone who is going to service or repair the siren.

SAFETY NOTICES

People's lives depend on your safe installation, service and operation of our products. It is important to read, understand and follow all instructions shipped with this product. In addition, listed below are some other important safety instructions and precautions you should follow:

INSTALLATION & SERVICE

- Electrocutation or severe personal injury can occur when performing various installation and service functions such as making electrical connections, drilling holes, or lifting equipment. Therefore experienced electricians in accordance with national, state and any other electrical codes having jurisdiction should perform installation. All work should be performed under the direction of the installation or service crew safety foreman.
- The sound output of sirens is capable of causing permanent hearing damage. To prevent excessive exposure, carefully plan siren placement, post warnings and restrict access to areas near the sirens. Sirens may be operated from remote control points. Whenever possible, disconnect all siren power including batteries before working near the siren.
- After installation or service, test the siren system to confirm that it is operating properly. Test the system regularly to confirm that it will be operational in an emergency.
- If future service personnel do not have these warnings and all other instructions shipped with the equipment to refer to, the siren system may not provide the intended audible warning and service personnel may be exposed to death, permanent hearing loss, or other bodily injury. File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to new recruits and trainees. Also, give a copy to anyone who is going to service or repair the sirens. For additional copies, call the Public Safety Systems Customer Care Center at 800-524-3021 or write to them at 2645 Federal Signal Drive, University Park, IL 60484.

OPERATION

- Failure to understand the capabilities and limitations of your siren system could result in permanent hearing loss, other serious injuries or death to persons too close to the sirens when you activate them or to those you need to warn. Carefully read and thoroughly understand all safety notices in this manual and all operations-related-items in all instruction manuals shipped with equipment. Thoroughly discuss all contingency plans with those responsible for warning people in your community, company, or jurisdiction.

WARNING

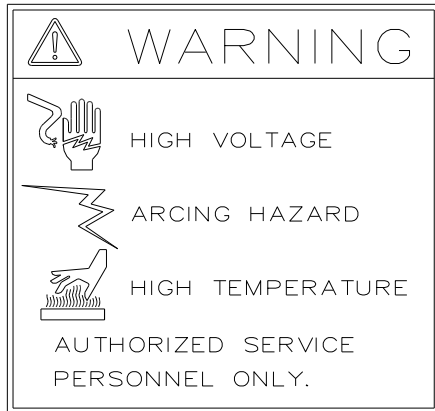
Read and understand the information contained in this manual, before attempting to install or service the equipment.

Pay careful attention to the following notices located on the equipment.

Solar modules generate direct current (DC) electricity when exposed to light. Exposure to this voltage can result in serious injury or even death. All safety precautions are to be followed carefully.

To stop production of electricity, panel surfaces should be covered with opaque material while working on system. Avoid touching terminals and/or wire ends until connections are made.

A. Notices- Externally Placed.



291A070A-01

B. Notices- Internally Placed.



BCI GROUP SIZE	TERMINAL TYPE	COLD CRANKING AMPS @ 0°F OR -18°C SAE J537H	RESERVE CAPACITY MINUTES	LOAD TEST AMPS
24	TSM	400	125	200

USE OF UNAPPROVED BATTERIES MAY FAIL TO PROVIDE ADEQUATE SIREN COVERAGE AND MAY VOID SIREN WARRANTY FOR FURTHER INFORMATION, CONTACT FEDERAL SIGNAL CUSTOMER SUPPORT AT (800)548-7229.

291A070A-02

SECTION 1

TOOL LIST

- LARGE FLAT HEAD SCREWDRIVER
- MEDIUM FLAT HEAD SCREWDRIVER
- NARROW (3/16") FLAT HEAD SCREWDRIVER
- MEDIUM CROSS HEAD SCREWDRIVER
- SOCKET DRIVER SET WITH 7/16", 9/16" & 3/4" SOCKETS
- 7/16" OPEN END WRENCH
- 9/16" OPEN END WRENCH
- ADJUSTABLE WRENCH
- WIRE CUTTERS
- NEEDLE NOSE PLIERS
- WIRE STRIP & CRIMP TOOL
- ELECTRIC DRILL WITH 1/4" DRILL BIT
- UTILITY KNIFE
- MEASURING TAPE

A. Recommended Cables

When equipped with a Vertex Radio (Model VX-4500) in your two-way RTUs, Federal Signal recommends purchasing the following cables for computer programming:

- RIB FIF-12A USB interface cable
- CT-104A interface cable

Use the RIB FIF-12A USB cable to connect to your computer. Use the CT-104A cable to connect from the RIB FIF-12A USB cable to the radio.

B. Obtaining Service

If you are experiencing any difficulties, contact Federal Signal Customer Care at: 800-548-7229 or 708-534-3400 extension 5822 or Technical Support at: 800-524-3021 or 708-534-3400 extension 7329 or through e-mail at: techsupport@fedsig.com. For instruction manuals and information on related products, visit: <http://www.alertnotification.net/>

SECTION 2 INSTALLATION

WARNING

Electrocution or severe personal injury can occur when making electrical connections, drilling holes, or lifting equipment. Therefore, installation should be performed by experienced electricians in accordance with national and local electrical codes.

1.0 Solar Panel Bracket Installation

A. General

Most bracket installations are one of two types: Side Pole Mount or Top Pole Mount. These two (2) configurations make it possible to provide solar power in almost any situation. If the installations in this paragraph are not suitable, modification of one of the configurations may be practical.

For best results, the solar modules must face true south. Consult FEMA CPG 1-17 and CPG 1-14 and your local Federal Signal representative to properly place your outdoor warning equipment.

B. Weight

Side Pole Mount:

Net Weight: 115 pounds [52 kg]

Shipping Weight: 153 pounds [69 kg]

Top-of-Pole Mount:

Net Weight: 112 pounds [51 kg]

Shipping Weight: 150 pounds [68 kg]

C. Pole Mounting

The bracket is typically mounted on a Class 2 utility pole (ANSI type wooden pole or equivalent) with a minimum horizontal ground stress rating of 3,700 pounds [1678 kg]. (Insure that soil loads will conform to this size utility pole.)

NOTE: Certain soil conditions may require guying for the pole. Check with proper building authorities.

To install a side pole mount solar bracket onto a wooden utility pole, proceed as follows:

1. Uncrate and identify the various parts. An empty box can be used as a platform to protect assembly and modules from damage.
2. Start by placing the solar modules face down with their junction boxes toward center for the 55W modules or toward top for the 110W panels.

NOTE: 55W modules come in two alternate sizes (See 55W Module Placement).

3. The solar bracket is to be assembled onto the solar modules per final assembly drawing. Apply thread locking compound to all fastening hardware to ensure secure assembly.
4. Find the desired elevation on the pole. For best results, the solar modules must face true south. Mark the eight (8) mounting holes on the pole for the bracket.
5. Drill a 3/8" pilot hole at each of the locations. Drill each hole at least 3-1/2" deep.
6. Using eight (8) 1/2" stainless steel lag screws (minimum 5" length) or two (2) sections of 3/4" wide stainless steel strapping, secure the solar bracket onto the pole.
7. Locate your site and find the latitude of your location. For the Northern Hemisphere, add or set the tilt angle at the value specified below:

Latitude Range	Tilt Angle
90° - 60°	60°
60° - 25°	+15°
25° - 20°	+5°
20° - 0°	25°

Tilt angles are limited to a minimum of 25° and maximum of 60° degrees.

8. Find the vertical distance Y for your setup from the tilt angle charts.

For any other type of pole, such as a galvanized steel pole, install the side mount solar bracket as follows:

1. Uncrate and identify the various parts. An empty box can be used as a platform to protect assembly and modules from damage.
2. Start by placing the solar modules face down with their junction boxes toward center for the 55W modules or toward top for the 110W panels.

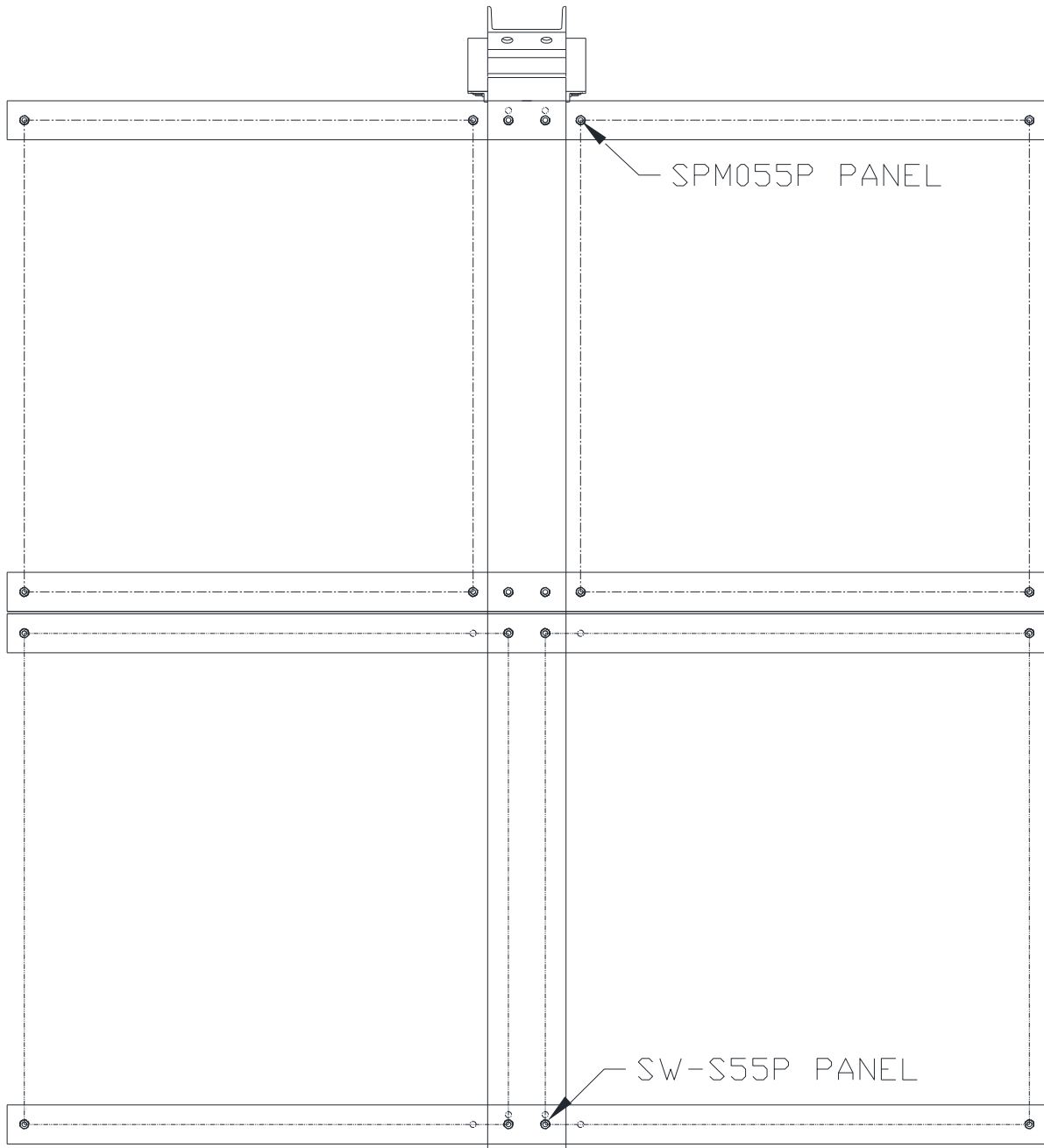
NOTE: 55W modules come in two alternate sizes (See 55W Module Placement).

3. The solar bracket is to be assembled onto the solar modules per final assembly drawing. Apply thread locking compound to all fastening hardware to ensure secure assembly.
4. Find the desired elevation on the pole. For best results, the solar modules must face true south. Mark the two (2) placement locations on the pole for the bracket.
5. Using two (2) sections of $\frac{3}{4}$ " wide stainless steel strapping and the tilt angle charts, secure the solar bracket by clamping it onto the pole.
6. Locate your site and find the latitude of your location. For the Northern Hemisphere, add or set the tilt angle at the value specified below:

Latitude Range	Tilt Angle
90° - 60°	60°
60° - 25°	+15°
25° - 20°	+5°
20° - 0°	25°

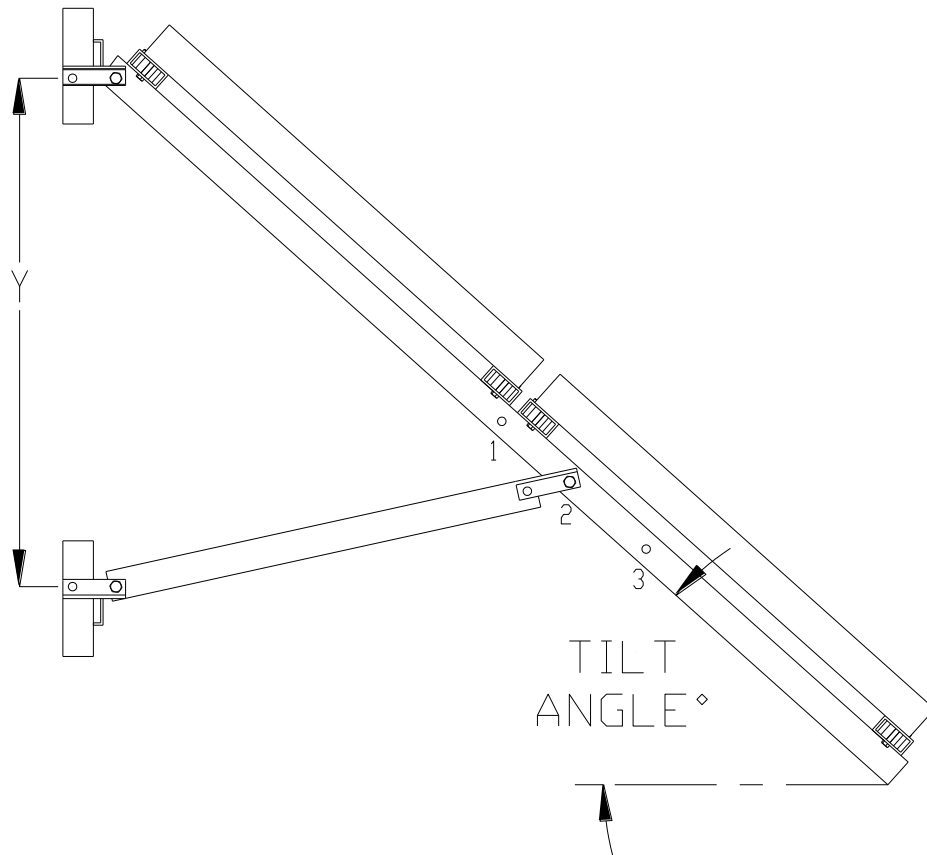
Tilt angles are limited to a minimum of 25° and maximum of 60° degrees.

7. Find the vertical distance Y for your setup from the tilt angle charts.



55W MODULE PLACEMENT
(TOP VIEW)

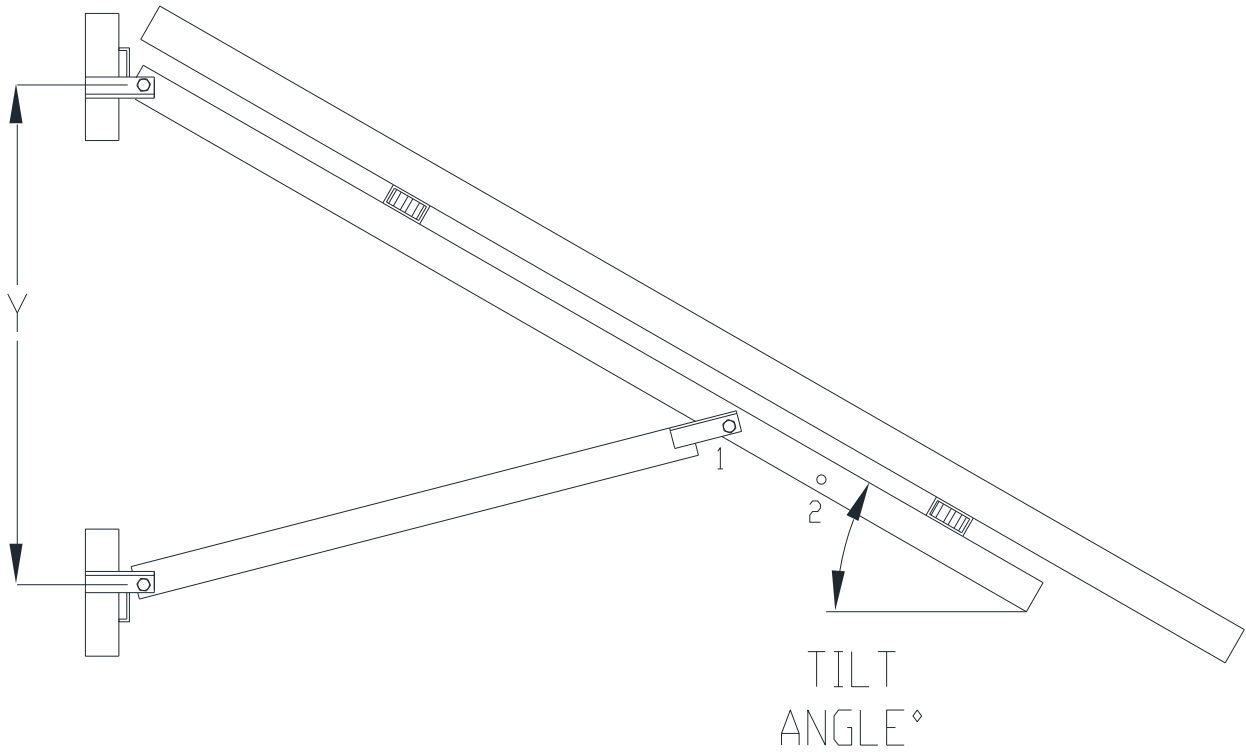
Side Pole Mount (55W MODULES):



291355B

TILT ANGLE FROM HORIZONTAL (DEG)	VERTICAL DISTANCE Y		HOLE NUMBER
	(inches)	(cm)	
25	15.00	38.10	1
30	20.50	52.07	1
35	26.00	66.04	1
40	26.00	66.04	2
45	31.50	80.01	2
50	33.50	85.09	3
55	42.50	107.95	3
60	48.00	121.92	3

Side Pole Mount (110W MODULES):



TILT ANGLE FROM HORIZONTAL	VERTICAL DISTANCE Y		HOLE NUMBER
	(DEG)	(inches)	
30	23.00	58.42	1
35	30.00	76.20	1
40	28.75	73.03	2
45	37.50	95.25	2
55	48.00	121.92	1
60	51.25	130.18	1

To install a top-of- pole solar bracket, proceed as follows:

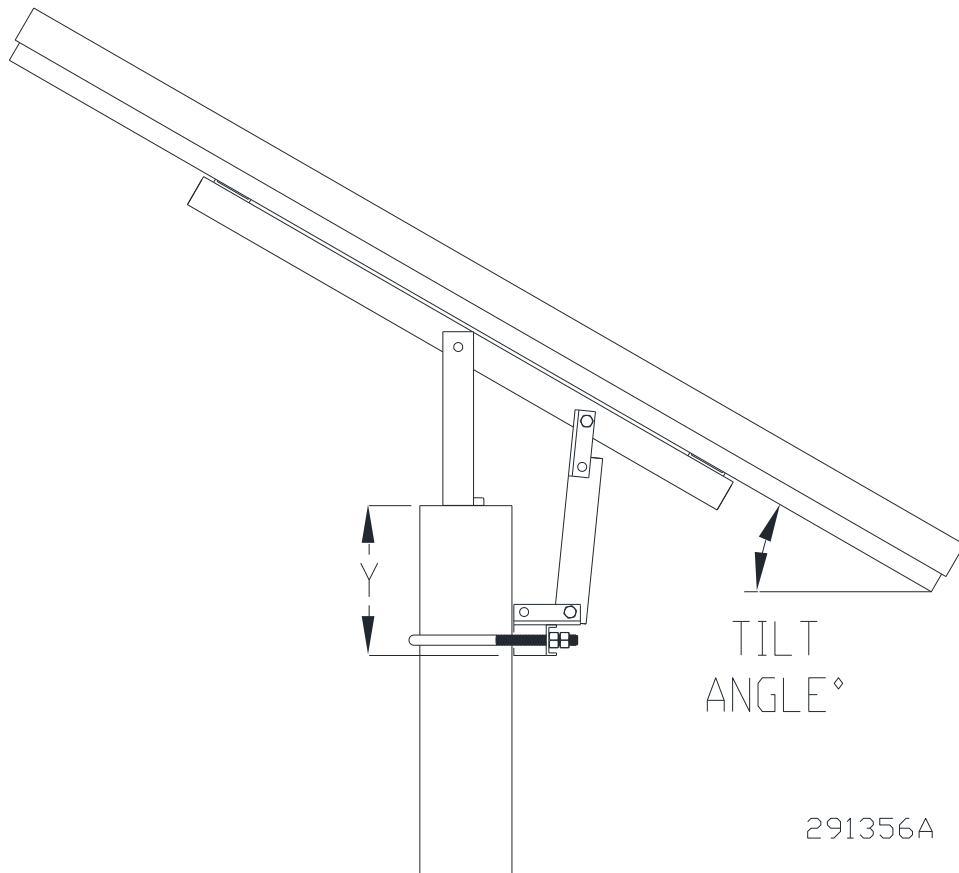
1. Uncrate and identify the various parts. An empty box can be used as a platform to protect assembly and modules from damage.
2. Start by placing the solar modules face down with their junction boxes toward center for the 55W modules or toward top for the 110W panels.
3. The solar bracket is to be assembled onto the solar modules per final assembly drawing. Apply thread locking compound to all fastening hardware to ensure secure assembly.
4. Locate your site and find the latitude of your location. For the Northern Hemisphere, add or set the tilt angle at the value specified below:

Latitude Range	Tilt Angle
90° - 60°	50°
60° - 25°	+15°
25° - 20°	+5°
20° - 0°	25°

Tilt angles are limited to a minimum of 25° and maximum of 50° degrees.

5. Find the vertical distance Y for your setup from the tilt angle chart. For best results, the solar modules must face true south.
6. Using the stainless steel u-bolt provided, secure the solar bracket onto the pole.

Top-of-Pole Mount:



TILT ANGLE FROM HORIZONTAL	VERTICAL DISTANCE Y	
	(DEG)	(inches)
25	5.00	12.70
30	5.50	13.97
35	6.25	15.88
40	7.00	17.78
45	7.50	19.05
50	7.75	19.69

SECTION 3

POWER SUPPLY & WIRING

POWER SUPPLY

Four (4) 55W, 12V solar modules are to be connected in series to supply a **48VDC** power supply for the 2001-130 and Eclipse⁸ electromechanical siren controls.

Four (4) 55W, 12V solar modules are to be connected in series/parallel to supply a **24VDC** power supply for the UV electronic siren controls.

Two (2) 110W, 12V solar modules are to be connected in series/parallel to supply a **24VDC** power supply for the UV electronic siren controls.

WIRING

JUNCTION BOX WIRING FOR 48 VOLTS (55W MODULES)

1. Open the module junction box covers.
2. Knock out the appropriate junction box holes in the modules to allow addition of cable clamps. An additional knockout will be required for the array output wires leading from the array to the control cabinet.
3. Coat module terminals with NO-OX or an equivalent corrosion inhibitor to prevent corrosion.
4. Cut the 3-conductor cable (8-foot* length) into three 32-inch† sections.
5. Connect the black wires from the 3-conductor cable sections as follows:
 - negative (-) terminal of module **A** to positive (+) terminal of module **B**,
 - negative (-) terminal of module **B** to positive (+) terminal of module **C**,
 - negative (-) terminal of module **C** to positive (+) terminal of module **D**.
6. Run one side of the 2-conductor PV output cable (30-foot‡ length) through the cable clamp, to module **D** junction box. Connect the black wire to the negative (-) terminal and butt splice the red wire to the red wire from the 3-conductor cable within the junction box. Use wire tie wraps provided to secure the output cable to the bracket.
7. Measure the voltage between red (+) and black (-) wires at the end of the PV output cable with the modules exposed to sunlight. If the wiring is correct, the voltage

* 8 ft [2.44 m]

† 32 in [81.28 cm]

‡ 30 ft [9.144 m]

should measure between 60 and 92 Volts. If the voltage in this range is not obtained, the wire connections should be checked over to ensure all steps were followed.

8. Close junction box covers.
9. Run the other side of the 2-conductor PV output cable (30-foot length) down the pole to the control cabinet. Use wire tie wraps provided to secure the output cable. Form a drip loop where the cable enters the control cabinet. Run the cable through the ½" NPT aluminum cord grip provided and connect to solar regulator using the spade terminals.
10. Installation is now complete.

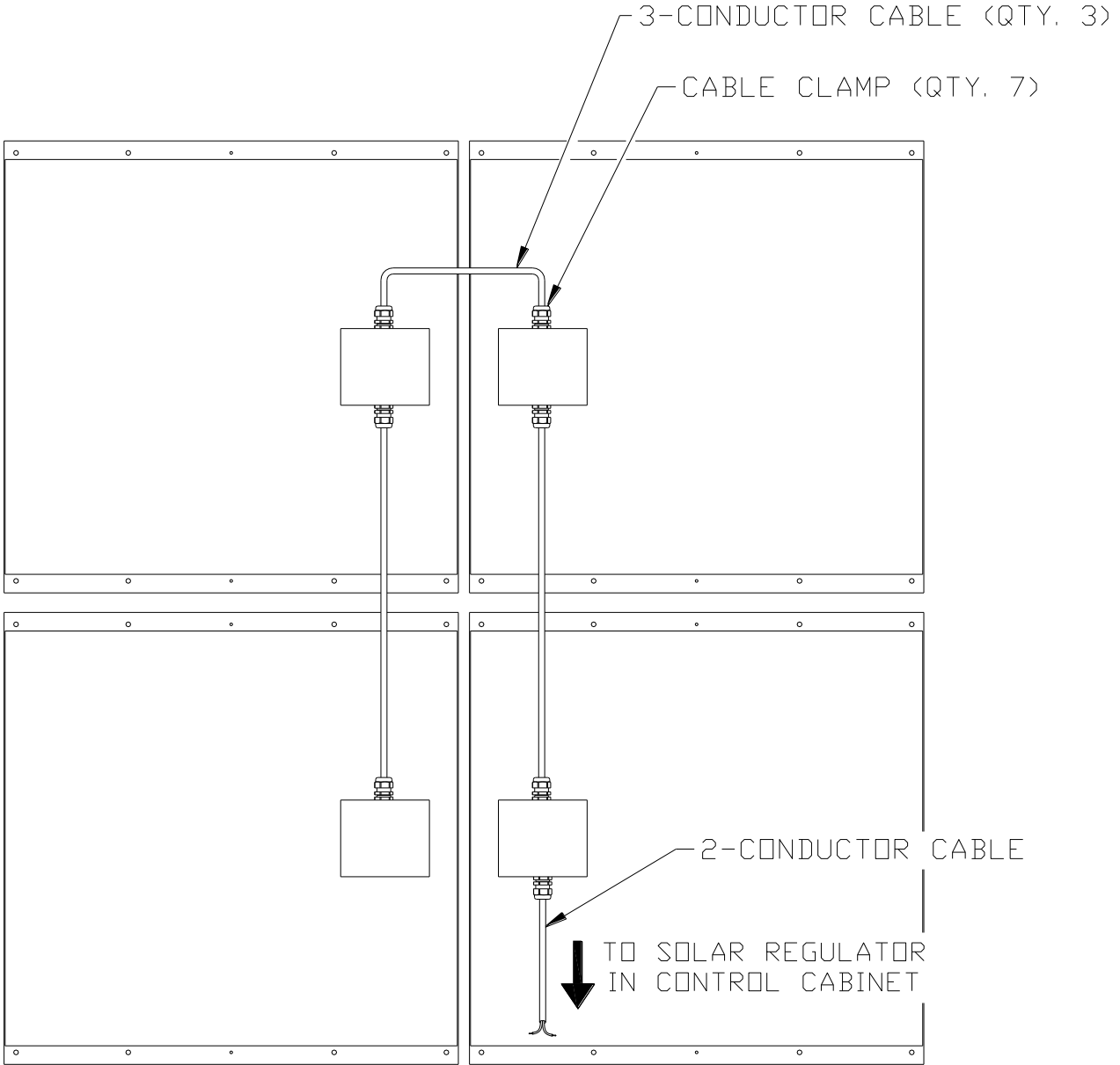
JUNCTION BOX WIRING FOR 24 VOLTS (55W MODULES)

1. Open the module junction box covers.
2. Knock out the appropriate junction box holes in the modules to allow addition of cable clamps. An additional knockout will be required for the array output wires leading from the array to the control cabinet.
3. Coat module terminals with NO-OX or an equivalent corrosion inhibitor to prevent corrosion.
4. Cut a 32-inch* section from the 3-conductor cable (8-foot† length).
5. Connect the white wire from the 3-conductor section as follows:
 - negative (-) terminal of module **A** to positive (+) terminal of module **B**,
 - negative (-) terminal of module **C** to positive (+) terminal of module **D**.
6. Run the 2-conductor PV output cable (30-foot‡ length) through the cable clamp, to module **D** junction box. Connect the black wire to the negative (-) terminal and butt splice the red wire to the red wire from the 3-conductor cable within the junction box. Use wire tie wraps provided to secure the output cable to the bracket.
7. Measure the voltage between red (+) and black (-) wires at the end of the PV output cable with the modules exposed to sunlight. If the wiring is correct, the voltage should measure between 30 and 46 Volts. If the voltage in this range is not obtained, the wire connections should be checked over to ensure all steps were followed.
8. Close junction box covers.
9. Run the 2-conductor PV output cable (30-foot length) down the pole to the control cabinet. Use wire tie wraps provided to secure the output cable. Form a drip loop where the cable enters the control cabinet. Run cable through the ½" NPT aluminum cord grip provided and connect to solar regulator using the spade terminals.
10. Installation is now complete.

* 32 in [81.28 cm]

† 8 ft [2.44 m]

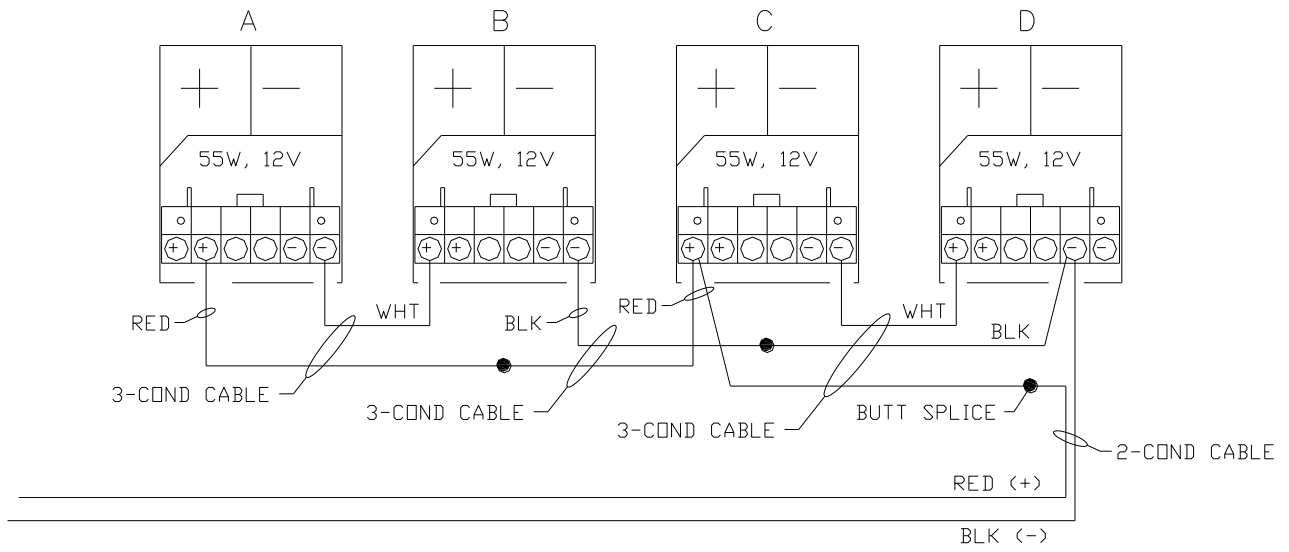
‡ 30 ft [9.144 m]



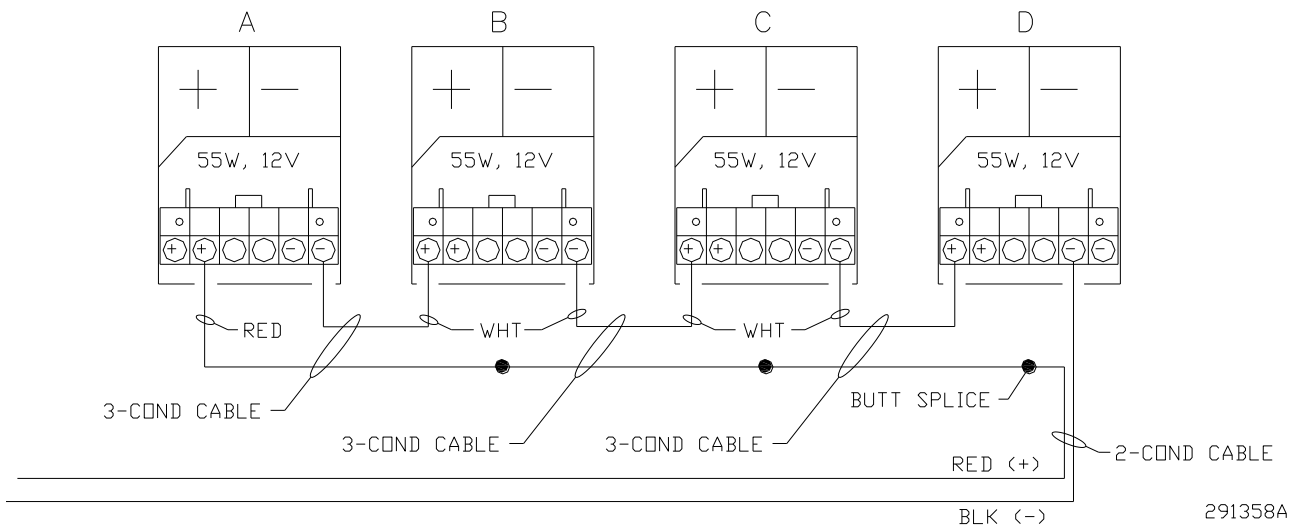
(BACK VIEW)
MODULE WIRING

291357B

24 VOLT SYSTEM (PVS220W-24)



48 VOLT SYSTEM (PVS220W-48)



291358A1

JUNCTION BOX WIRING FOR 24 VOLTS (110W MODULES, 3-CONDUCTOR)

1. Open the module junction box covers.
2. Knock out the appropriate junction box holes in the modules to allow addition of cable clamps. An additional knockout will be required for the array output wires leading from the array to the control cabinet.
3. Coat module terminals with NO-OX or an equivalent corrosion inhibitor to prevent corrosion.
4. Connect the white wire from the short 3-conductor cable (3-foot* length) as follows:
 - negative (-) terminal of module **A** to positive (+) terminal of module **B**.
5. Run the long 3-conductor PV output cable (60-foot† length) through the cable clamp, to module **B** junction box. Connect the black wire to the negative (-) terminal and butt splice the red wire to the red wire from the 3-conductor cable within the junction box. Use wire tie wraps provided to secure the output cable to the bracket.
6. Measure the voltage between red (+) and black (-) wires at the end of the PV output cable with the modules exposed to sunlight. If the wiring is correct, the voltage should measure between 30 and 46 Volts. If the voltage in this range is not obtained, the wire connections should be checked over to ensure all steps were followed.
7. Close junction box covers.
8. Run the 3-conductor PV output cable (60-foot length) down the pole to the control cabinet. Use wire tie wraps provided to secure the output cable. Form a drip loop where the cable enters the control cabinet. Run cable through the ½" NPT aluminum cord grip provided and connect to solar regulator using the spade terminals. Ensure wire connections are made per drawing 259298C.
9. Installation is now complete.

* 3 ft [91.44 cm]

† 60 ft [18.288 m]

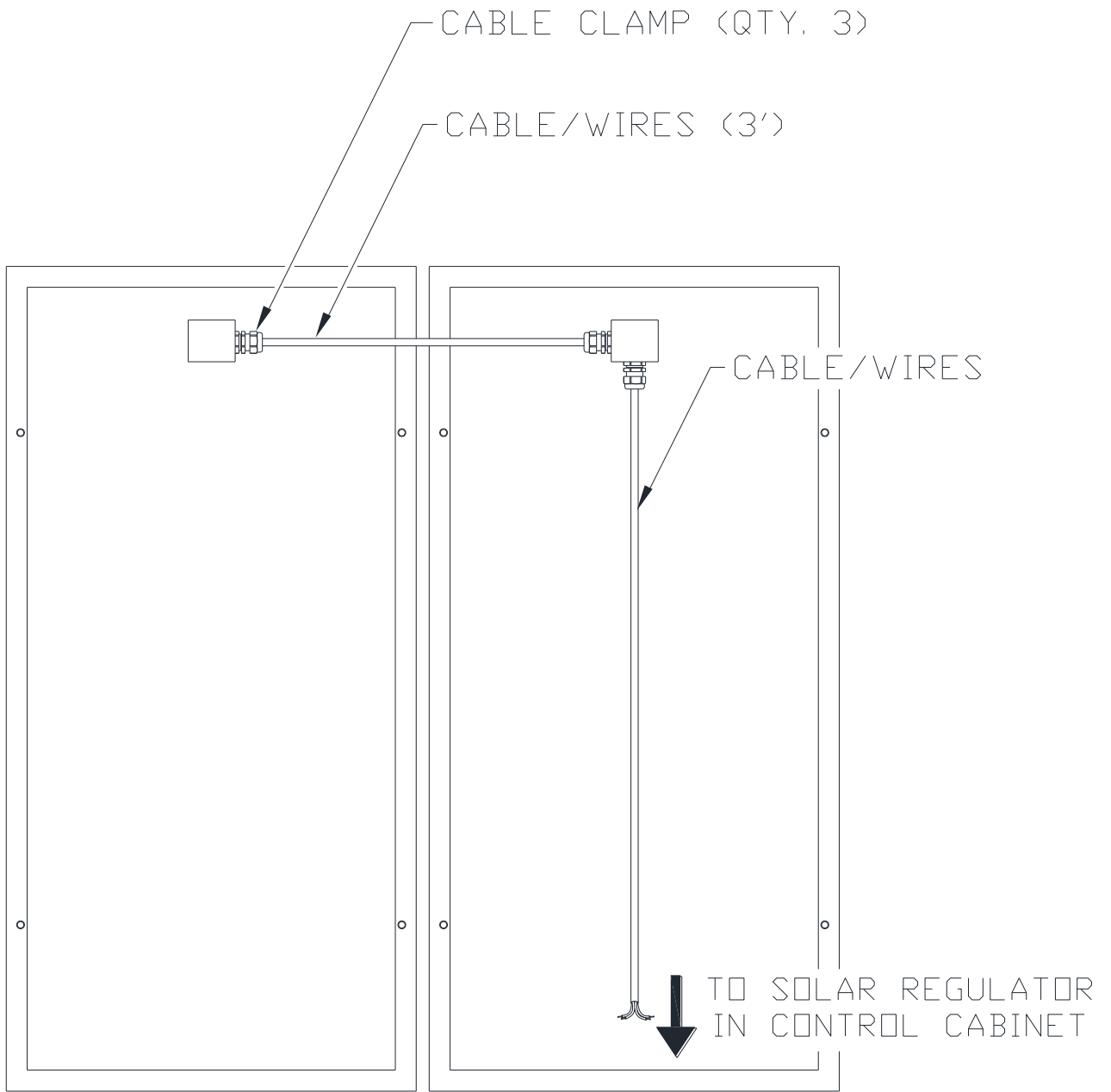
JUNCTION BOX WIRING FOR 24 VOLTS (110W MODULES, 4-WIRE HAWAII)

1. Open the module junction box covers.
2. Knock out the appropriate junction box holes in the modules to allow addition of cable clamps. An additional knockout will be required for the array output wires leading from the array to the control cabinet.
3. Coat module terminals with NO-OX or an equivalent corrosion inhibitor to prevent corrosion.
4. Run the wires (60-foot^{*} length for top mount or 30-foot[†] for side mount, with an additional 3-foot[‡] length) through the cable clamp, to module **B** junction box. Connect the shorter wires to the positive (+) and negative (-) terminals of module **B**. Run the longer wires out and connect to terminals of module **A**. Use wire tie wraps provided to secure the output cable to the bracket.
5. Measure the voltage between the 2 sets of red (+) and black (-) wires at the end of the PV output wires with the modules exposed to sunlight. If the wiring is correct, the voltage on each set of wires should measure between 15 and 23 Volts. With a jumper installed on terminal blocks in the UV control cabinet, the series combination of the two modules should measure between 30 and 46 Volts DC. If either of these voltage values is not obtained, the wire connections should be checked over to ensure all steps were followed per wiring diagram 259298C.
6. Close junction box covers.
7. Run the wires down the pole to the control cabinet. Use wire tie wraps provided to secure the output cable. Form a drip loop where the cable enters the control cabinet. Run cable through the ½" NPT aluminum cord grip provided and connect to solar regulator using the spade terminals.
8. Installation is now complete.

* 60 ft [18.288 m]

† 30 ft [9.144 m]

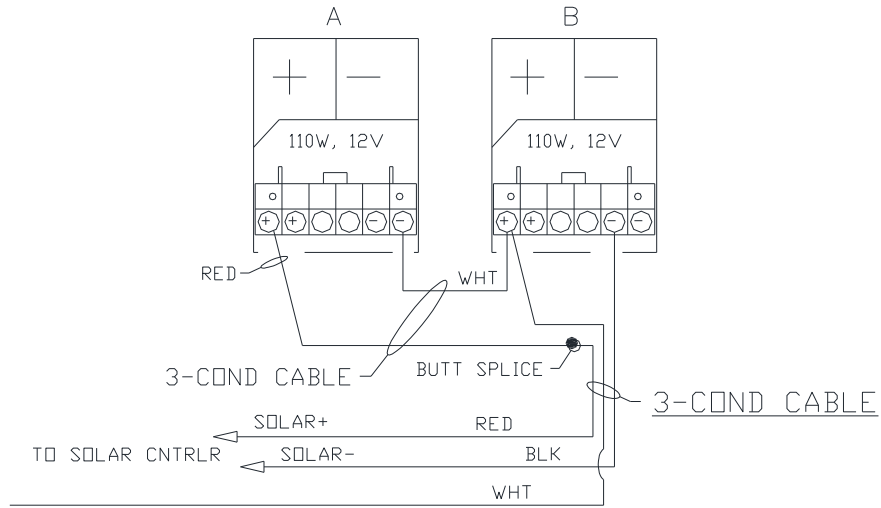
‡ 3 ft [91.44 cm]



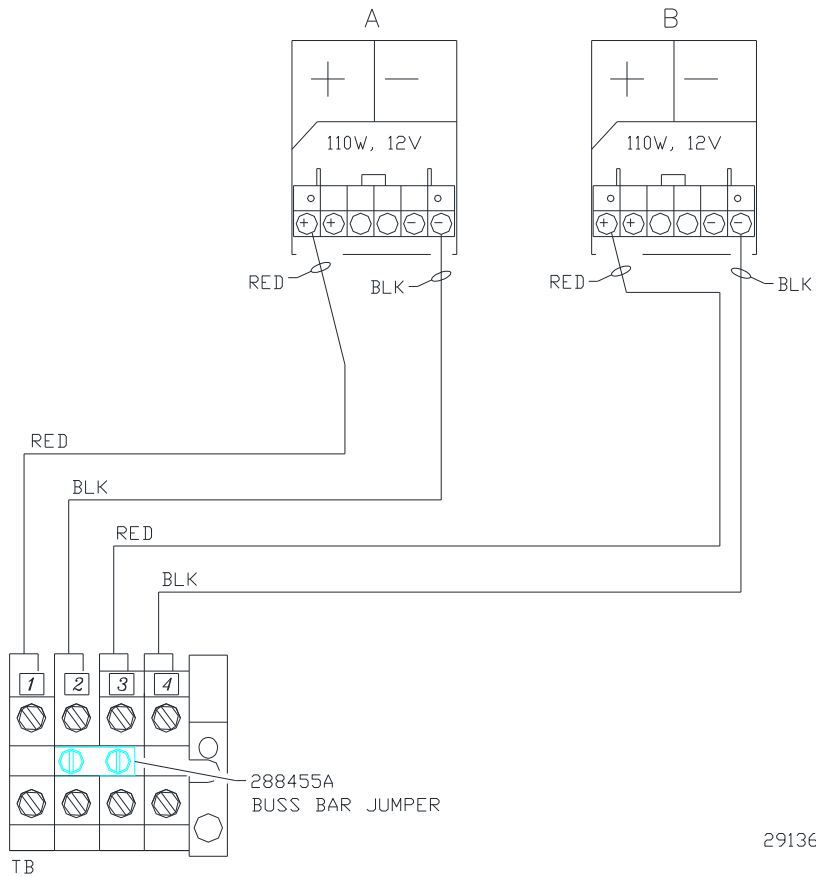
(BACK VIEW)
MODULE WIRING
110W PANELS

291359B

24 VOLT SYSTEM: 288996 (PVS220W-24)

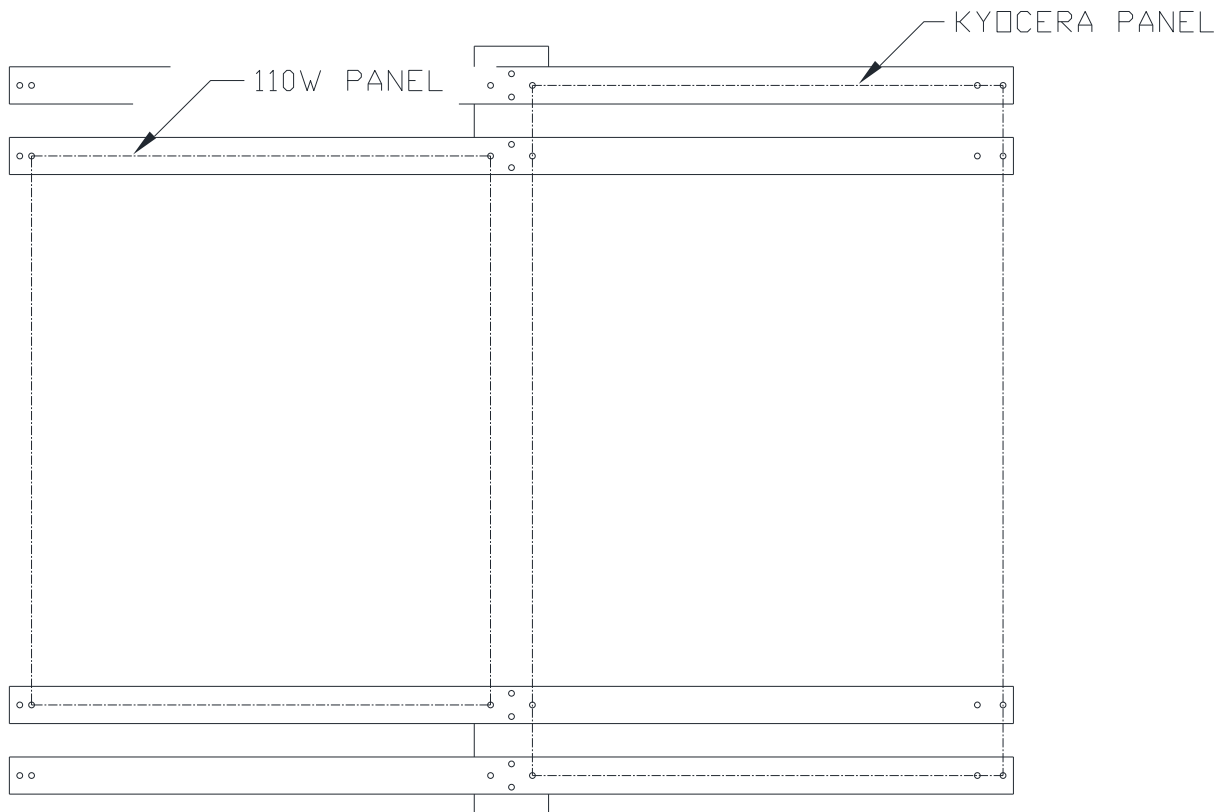


24V STANDARD VERSION WIRING



291360C1

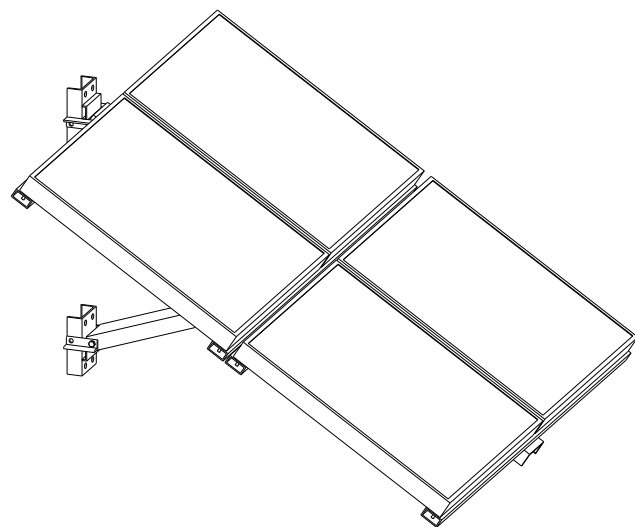
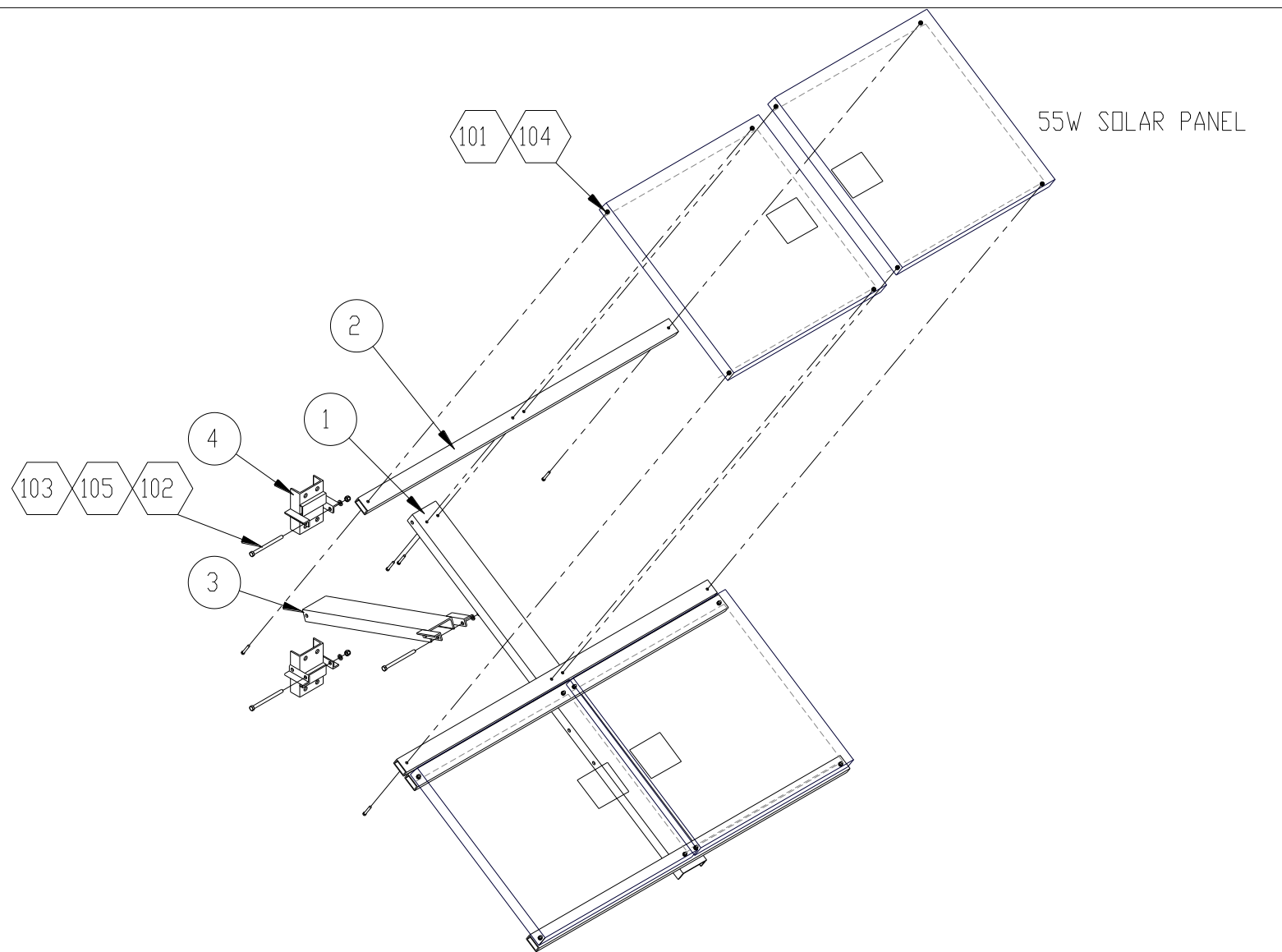
24V HAWAII VERSION WIRING



110W MODULE PLACEMENT
 (TOP VIEW)

291367A1

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	2881278C	CHANNEL, BASE
2	4	2881279B	TUBING, RECTANGULAR
3	1	2881284A	CHANNEL SUPPORT
4	2	2881286A	CHANNEL BRACKET
5	1	2881333B	HARDWARE KIT
			HARDWARE KIT PARTS ARE LISTED BELOW
101	16	7000A311-28	SCR,HEX HD,SS,1/4-20X1-7/8
102	3	7002080A-80	SCREW,HEX,SS,3/8-16 X 5,FULL THRD
103	3	7058A013	NUT,EL STOP,HEX,LT SS,3/8-16
104	16	7058050A	NUT,MACH SCR,KEPS,1/4-20
105	3	7074A046	LKWSHR, SPLT, SS, 3/8



Tolerances Unless Otherwise Specified
Angles ----- ± 0.5°
X.XX ----- ± 0.015
X.XXX ----- ± 0.005

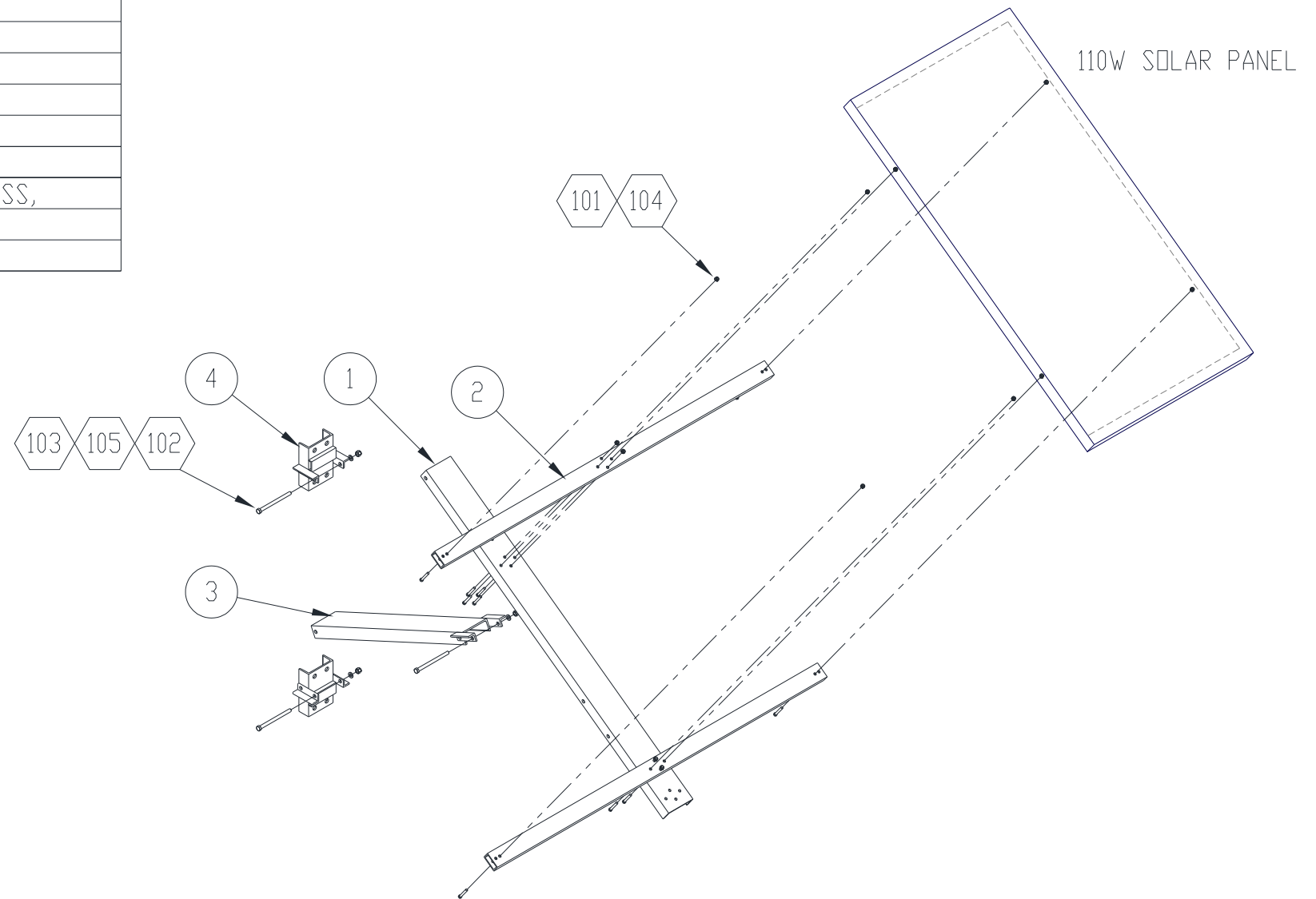
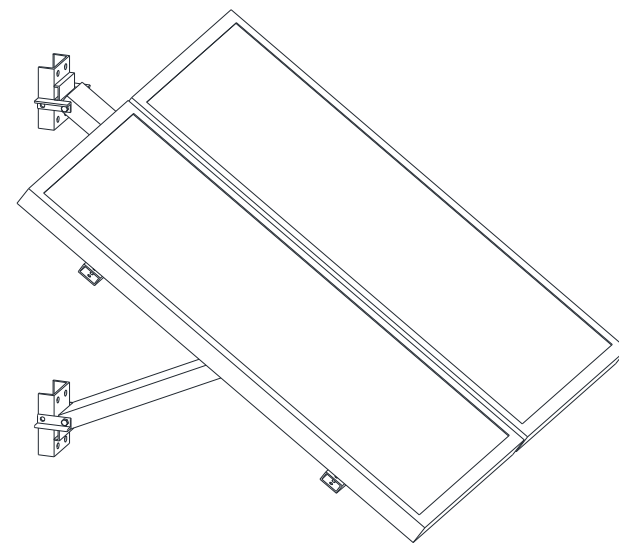
SIGNAL
DIVISION
Federal Signal Corporation
2645 FEDERAL SIGNAL DRIVE - UNIVERSITY PARK, IL 60484

REV	CHANGE	DATE	BY
C	SEE ECR# 10-7179	11/1/10	VT
B1	SEE ECR #09-5802	1/8/10	MAF
B	SEE ECR# 09-4542	3/10/09	VT

FINISH:	NONE
	REMOVE BURRS, SHARP CORNERS AND EDGES
MATERIAL:	AS SPECIFIED
UNIT OF MEASURE:	PC
NAME:	FINAL ASSEMBLY, SOLAR BRACKET 55W (4 PANEL)

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DRAWN BY: VT	CHKD. BY: SC	SCALE AT B SIZE: NONE
DATE: 1/30/09	DATE: 2/2/09	
DRAWING NUMBER:		2881287C

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	861000124A	CHANNEL, BASE, SOLAR SIDE MT 110W
2	2	861000053A	TUBING, RECTANGULAR, SOLAR 110W
3	1	861000126A	ASSY., WELD, SUPPORT, CHANNEL SIDE MT 110W
4	2	2881286A	CHANNEL, BRACKET, WELD
5	1	2881333B	HARDWARE KIT
			HARDWARE KIT PARTS ARE LISTED BELOW
101	12	7000A311-30	SCR,HEX HD,SS,1/4-20X1-7/8
102	3	7002080A-80	SCREW,HEX,SS,3/8-16 X 5,FULL THRD
103	3	7058A013	NUT, EL STOP, 3/8-16, 0.468/0.438" THK, SS,
104	12	7058050A	NUT,MACH SCR,KEPS,1/4-20
105	3	7074A046	LKWSHR, SPLT, SS, 3/8



Tolerances Unless
Otherwise Specified
Angles ----- ±0.5°
X.XX ----- ±0.015
X.XXX ----- ±0.005

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REV	CHANGE	DATE	BY
A0	SEE ECR# 841	6/24/13	VT

FINISH: NONE
REMOVE BURRS, SHARP CORNERS AND EDGES

MATERIAL: AS SPECIFIED
UNIT OF MEASURE: PC

NAME: FINAL ASSEMBLY, SOLAR BRACKET SIDE MOUNT 110W

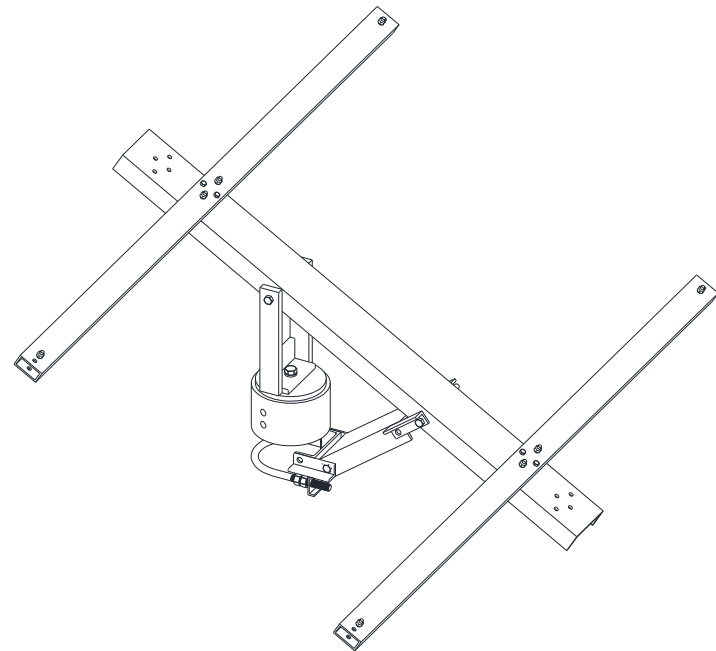
DRAWN BY: VT
DATE: 6/12/13

CHKD. BY: SAC
DATE: 6/14/13

SCALE AT B SIZE: NONE

DRAWING NUMBER: 861000127A

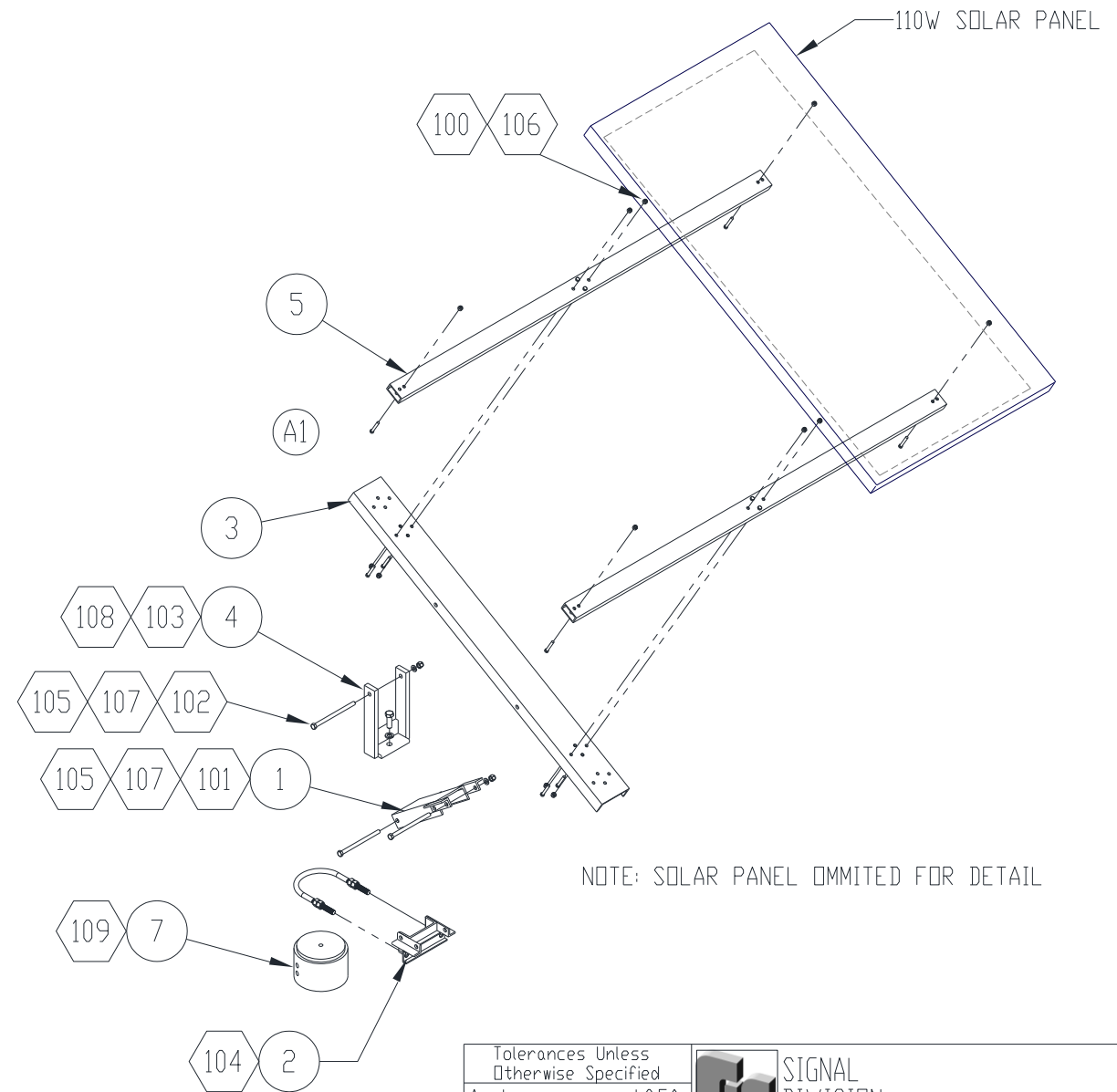
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	2881295A	ASSY, WELD, CHANNEL SUPPORT, TOP-OF-PO
2	1	2881298A	WELD ASSY, BRACKET, TOP-OF-POLE MOUNT
3	1	861000052A	CHANNEL, BASE, SOLAR 110W
4	1	2881294A	ASSEMBLY, WELD, BASE BRACKET
5	2	861000053A	TUBING, RECTANGULAR, SOLAR 110W
6	1	2881335	HARDWARE KIT
7	1	8570073A	WELDMENT ASSY, PIPE SLEEVE, SOLAR, PVS
			HARDWARE KIT PARTS LISTED BELOW
100	12	7000A311-28	SCR,HEX HD,SS,1/4-20X1-7/8
101	2	7002080A-88	SCREW,HEX,SS,3/8-16 X 6-1/2
102	1	7002080A-96	SCREW,HEX,SS,3/8-16 X 6
103	1	7002A014-24	SCREW,CAP,HEX HD,SS,1/2-13 X 1-1/2
104	1	7003018A	BOLT, U, 1/2-13, , SS, FOR 4" PIPE
105	3	7058A013	NUT, EL STOP, 3/8-16, 0.468/0.438" THK
106	12	7058A010	NUT, EL STOP, 1/4-20, , SS,
107	3	7074A046	LKWSHR, SPLT, SS, 3/8
108	1	7074A059	WASHER, SPLT, 1/2, .873 OD, 0.135/0.125"
109	2	7000A338-104	SCREW HEX HD 1/2-13 SS



(A2)

(A2)

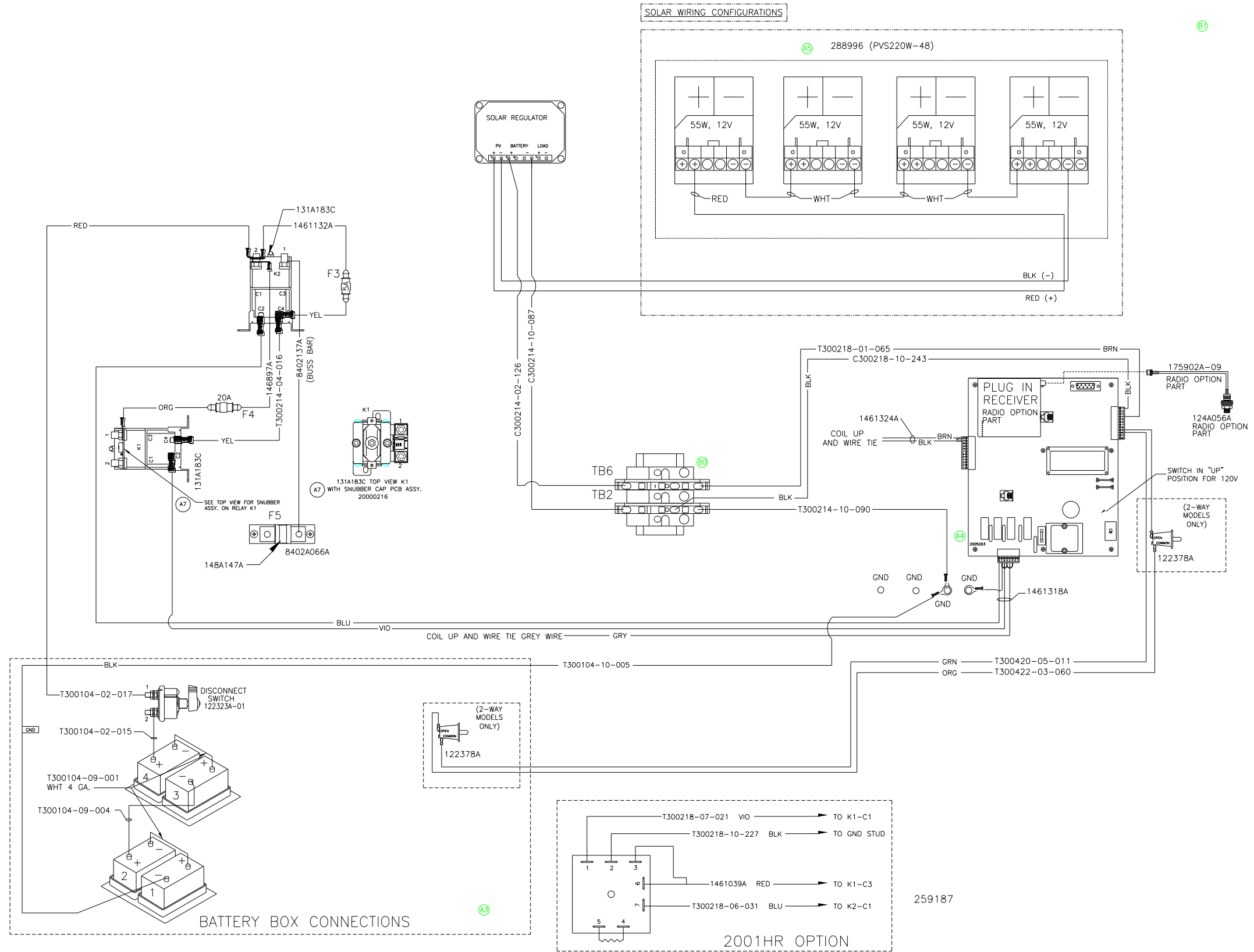
(A2)



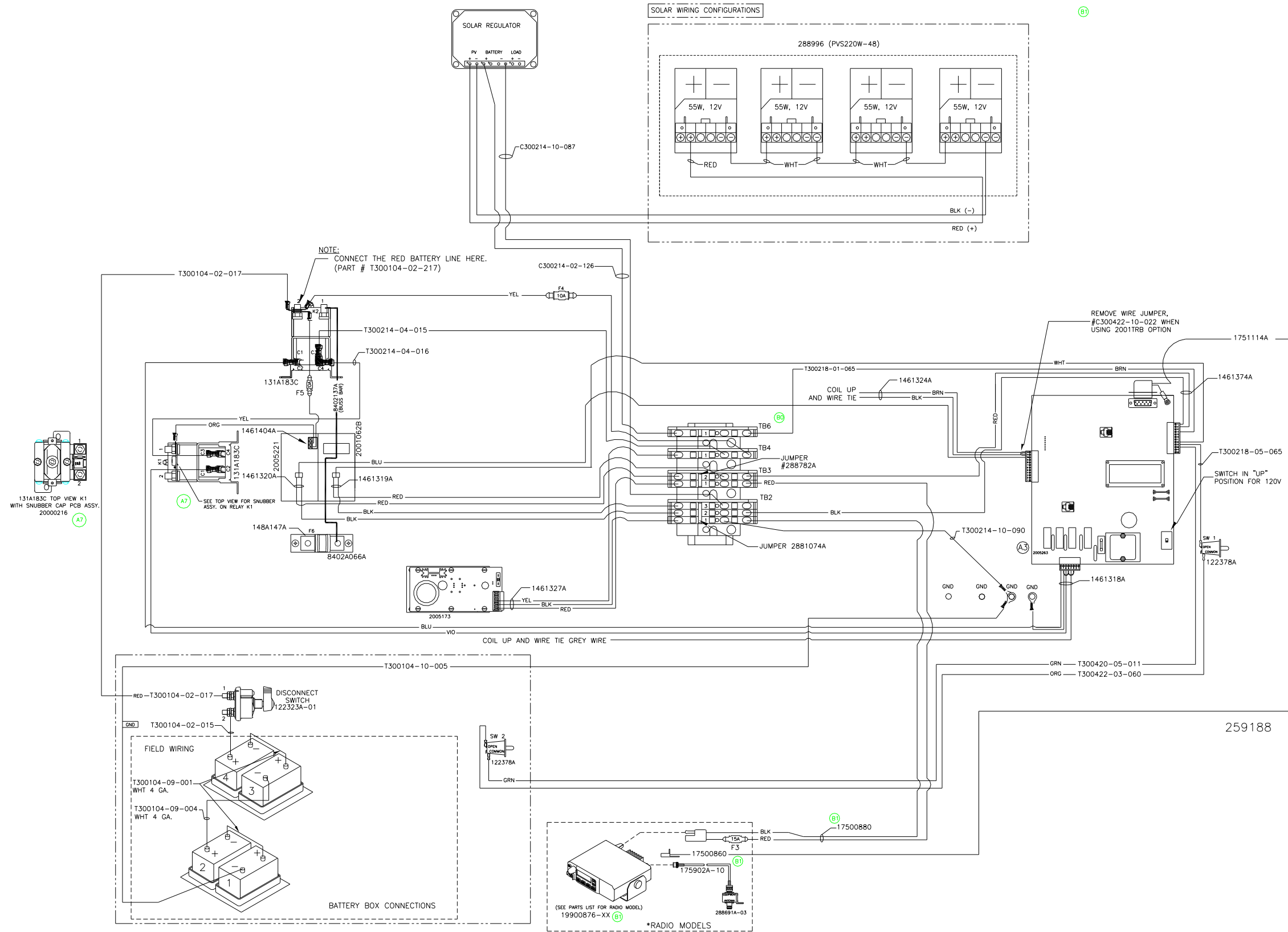
Tolerances Unless Otherwise Specified	
Angles	± 0.5°
X.XX	± 0.015
X.XXX	± 0.005

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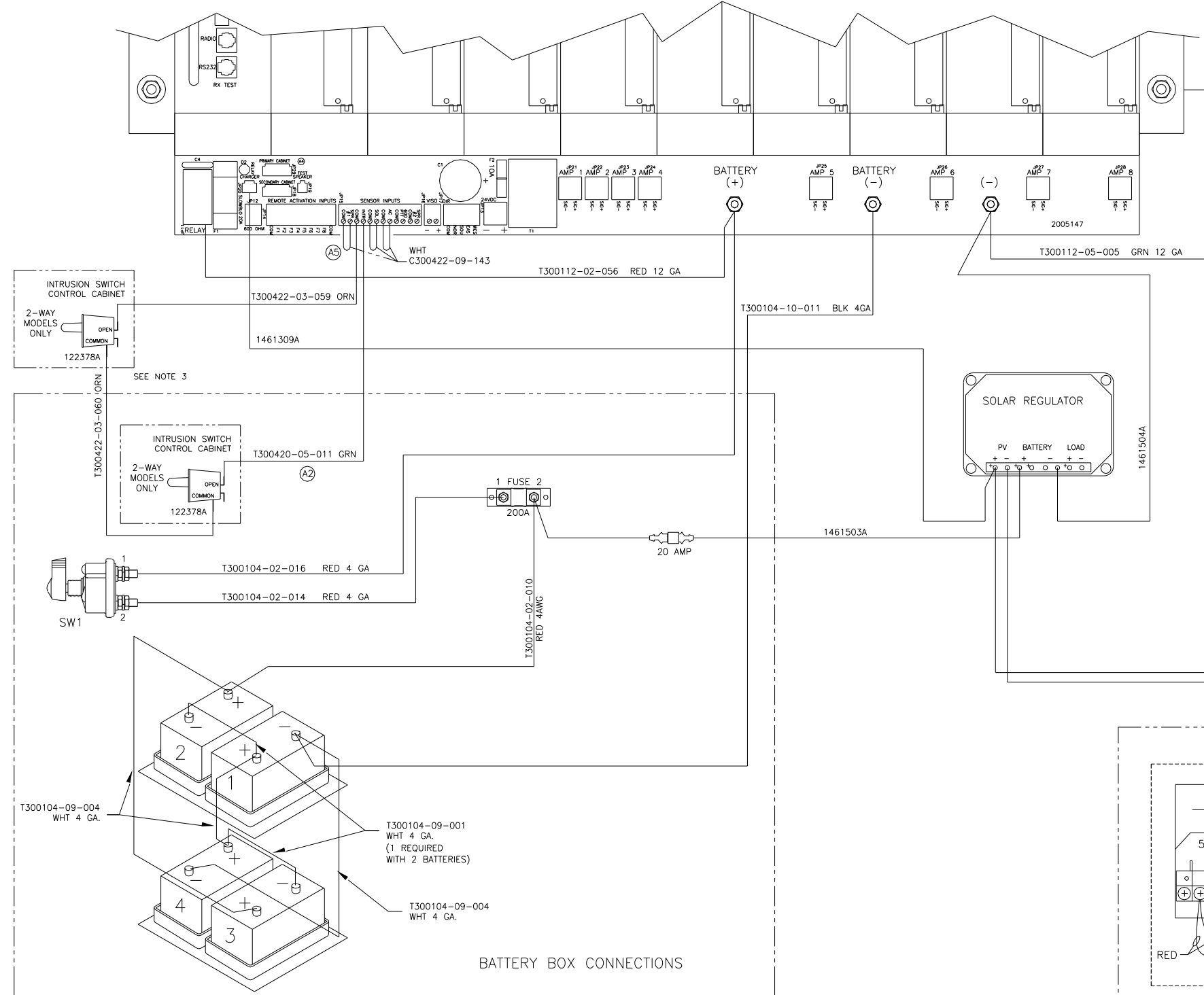
				FINISH: NONE REMOVE BURRS, SHARP CORNERS AND EDGES	MATERIAL: AS SPECIFIED	UNIT OF MEASURE: PC	DRAWN BY: VT DATE: 10/29/12	CHKD. BY: SAC DATE: 10/30/12	SCALE AT B SIZE: NONE
A2	SEE ECR # 2268	8/5/14	VT	NAME: FINAL ASSEMBLY, SOLAR BRACKET TOP-OF-POLE MOUNT 110W (2 PANEL)					
A1	SEE ECR # 768	5/21/13	VT						
A0	REL. TO ECR # 113	10/30/12	VT						
REV	CHANGE	DATE	BY	DRAWING NUMBER: 861000039A					



DCB & DCFCB Solar Wiring

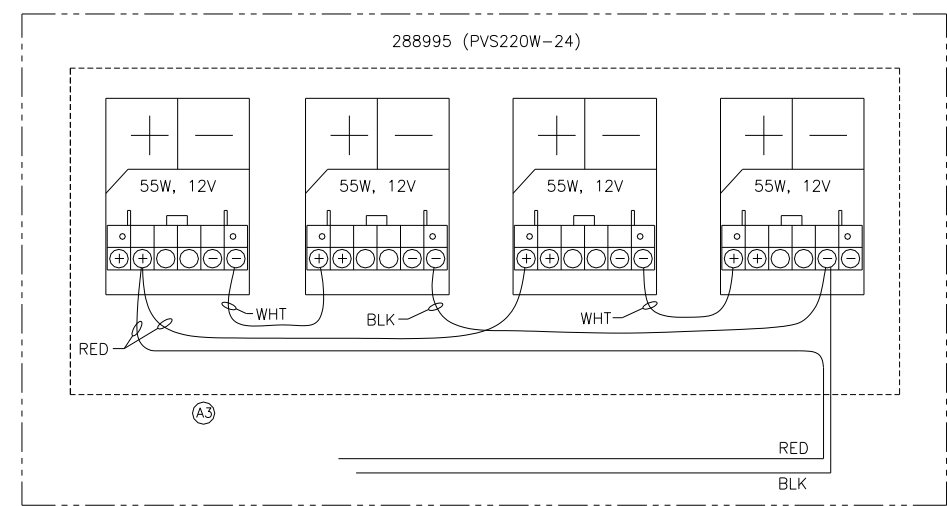
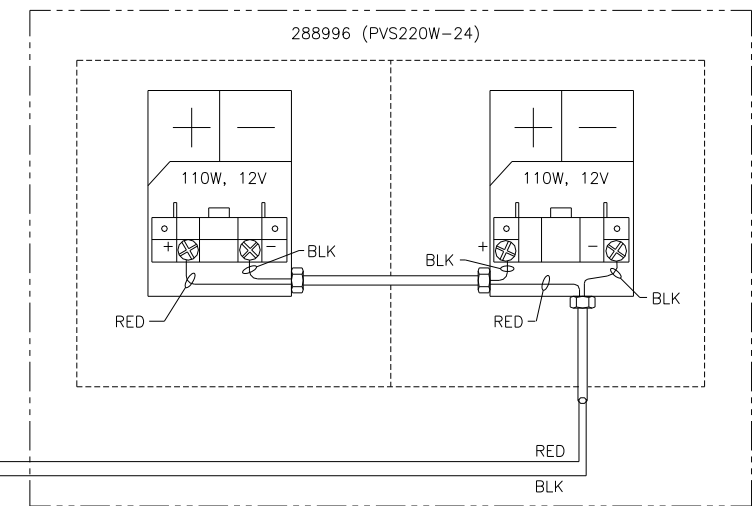


DCFCB Solar Wiring

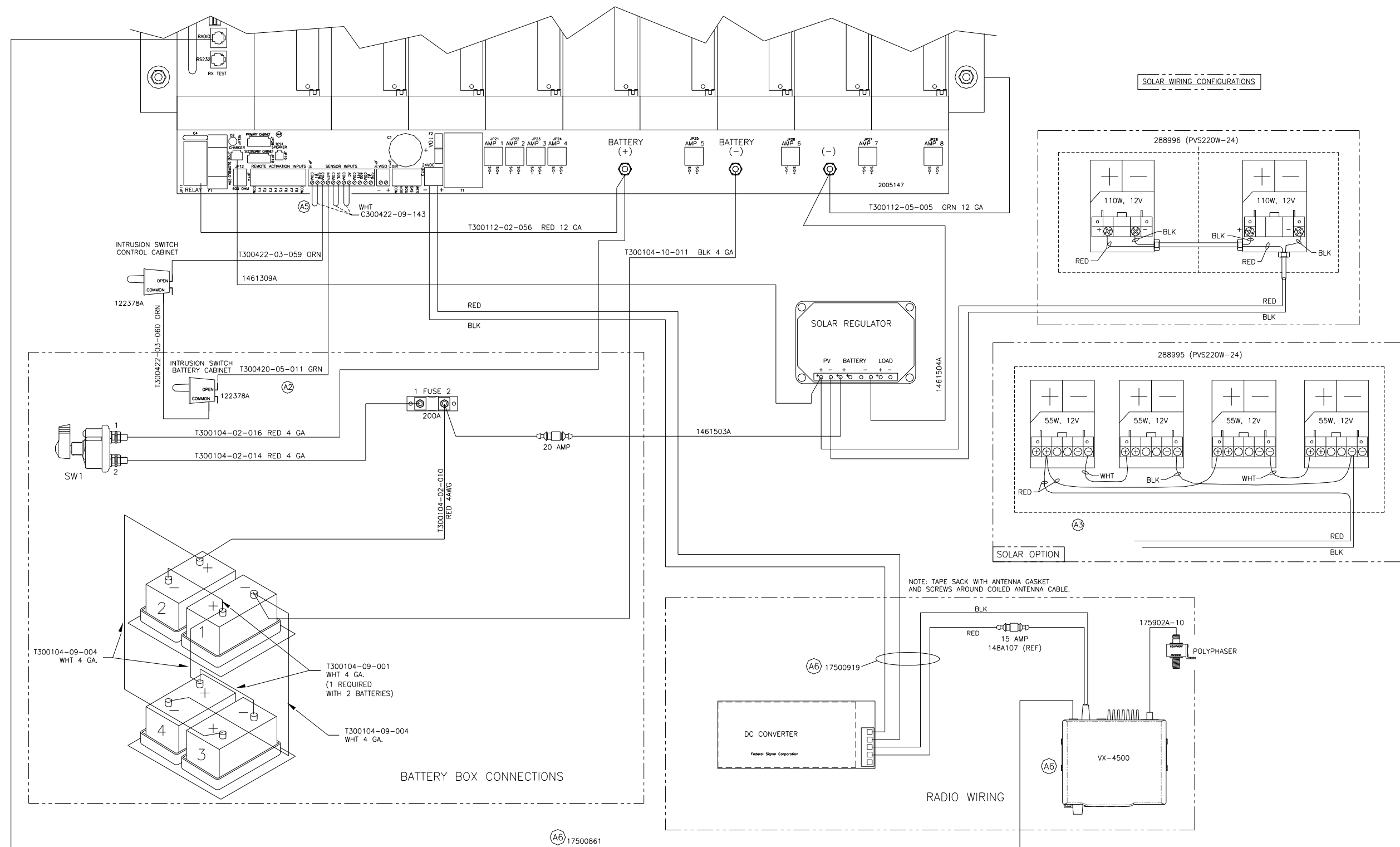


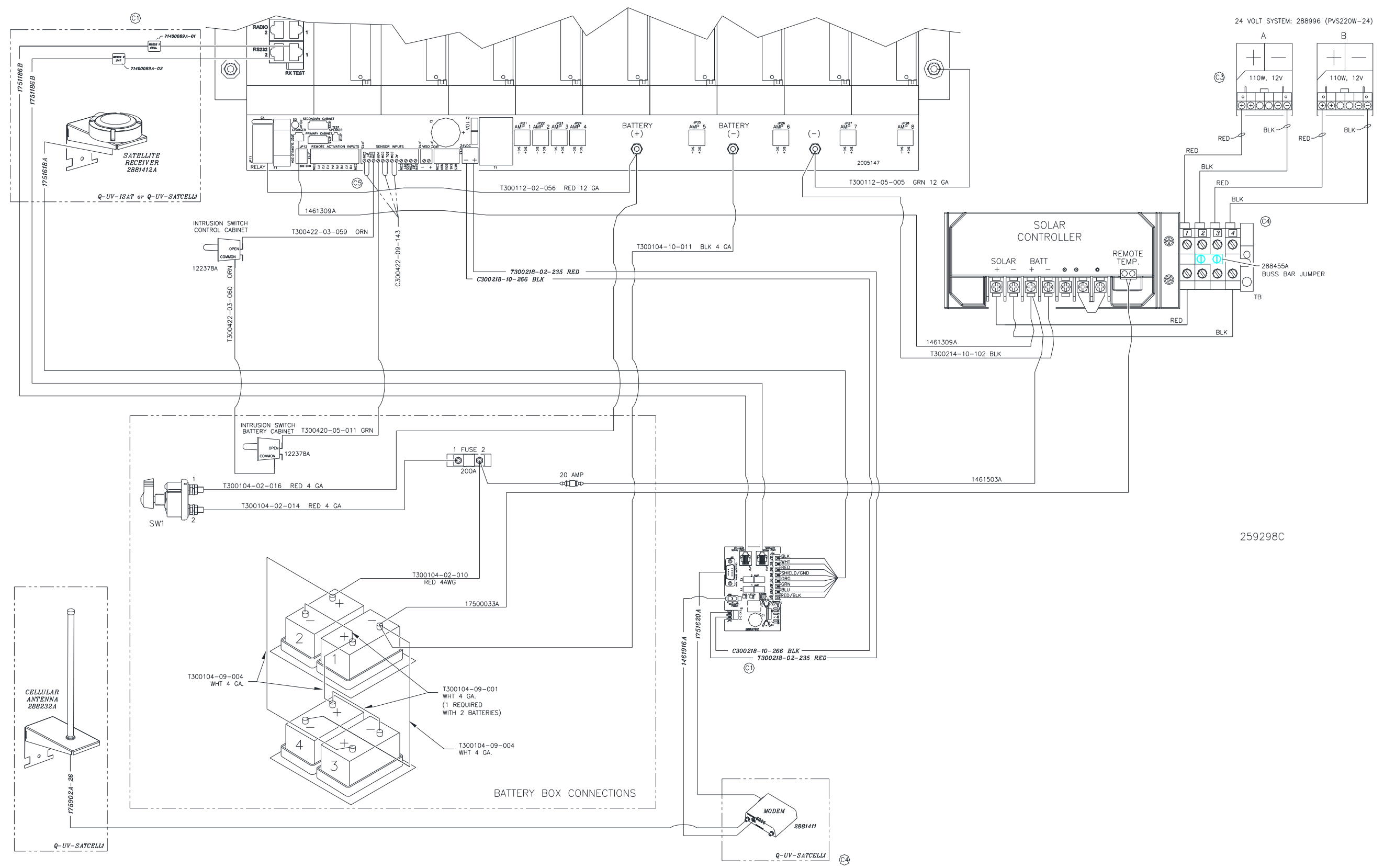
(A6)

SOLAR WIRING CONFIGURATIONS

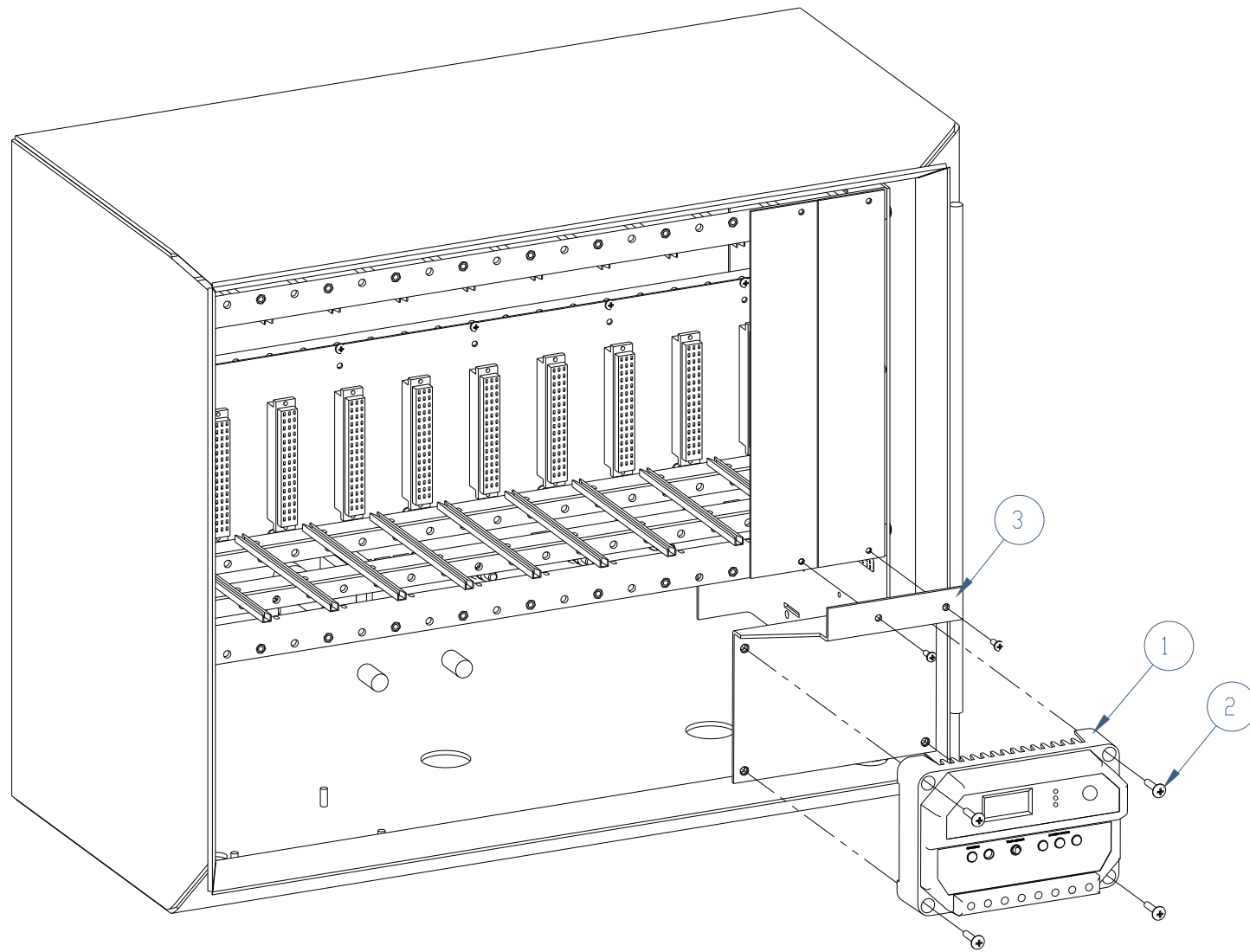


(A3)





Wiring Diagram Hawaii in UV



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	288964A-24	SOLAR REG,PROSTAR,PS-30M
2	4	7000A070-12	SCR, PHIL. HD., SS, 10-32 X 3/4 LG
3	1	8600148A-01	BRKT ASSY,SOLAR,PROSTAR,UV
*	1	1461503A	WIRE LEAD,BATTERY (+),SOLAR,UV
*	1	1461504A	WIRE LEAD,SOLAR GND TO MOTHERBOARD
*	2	C300422-09-143	CUT WIRE,1/4NT:1/4NT,1.5"
(B3) **	1	288996B	SOLAR KIT,SUNWIZE PVS220W-24
REF	0	259078B	WIRING DIA,UV 1-WAY,SOLAR
REF	0	259072B	WIRING DIA,UV 2-WAY,SOLAR
REF	0	8600109A	FINAL ASSY,UV 1-WAY
REF	0	8600111A	FINAL ASSY, UV 2-WAY

DELETIONS FOR SOLAR OPTION (1-WAY & 2-WAY)		
QTY.	PART NUMBER	DESCRIPTION
1	120816B	CHARGER,24V,10A
1	1612393B	LABEL,DIN RAIL,UV
2	229218A	BRKT,T-BLOCK,END
4#	229282A	TERM. BLOCK,1-POLE,35MM DIN
1##	229283A	CAP,END,TERM BLOCK,1 POLE
1	229288A	GROUND TERM BLOCK,3 POS
1	288810A-04	DIN RAIL,ALUM,UNCOATED,4.00"
1###	288454B	INPUT MODULE,120V
2	7011A152-06	#8 SHT METAL SCREW,SS
(B2) 6	7058050A	NUT,MACH SCREW,KEPS 1/4-20
1	8600112A-01	BRKT ASSY,PWR SUPPLY
1	1751064A-04	CABLE,AC TERMINATED
2###	C300218-09-119	WIRE,CUT,WHT,5"
2###	C300218-10-258	WIRE,CUT,BLK,5"
1###	T300422-02-094	T-WIRE,RED,28"
1###	T300422-06-060	T-WIRE,BLUE,28"
1###	T300422-10-099	T-WIRE,BLACK,28"
1	8549A193A	LIGHTNING PROTECTOR
1	1461243A	WIRE LEAD,FUSED,POWER SUPPLY
(B2) 1	81461875B	LABEL,NAMEPLATE,UL
1	1612875A-05	LABEL, ELECTRICAL RATINGS

* SHOWN ON WIRING DIAGRAM # ONLY QTY 2 ON 1-WAY
 ** NOT SHOWN, SHIPPED DIRECT TO CUSTOMER ## ONLY 1-WAY MODELS
 ### ONLY 2-WAY MODELS

Tolerances Unless Otherwise Specified
Angles ----- ± 0.5°
X.XX ----- ± 0.015
X.XXX ----- ± 0.005

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REV	CHANGE	DATE	BY
B3	SEE ECD #08-2746	2/26/08	VT
B2	SEE ECD #05-4180	11/22/05	MAF
B1	REL TO PROD ECD #05-4142	9/21/05	MAF

FINISH:	N/A		
MATERIAL:	N/A		
NAME:	SOLAR ASSY,UV		
UNIT OF MEASURE:	RF	DRAWN BY: MAF	CHKD. BY: MJF
		DATE: 7/8/05	DATE: 9/21/05
		SCALE AT B SIZE: NONE	
		DRAWING NUMBER: 8600124B	

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