

509 West Monroe Street Highland, IL 62249 Phone: (618) 654-2184 Fax: (618) 654-9199

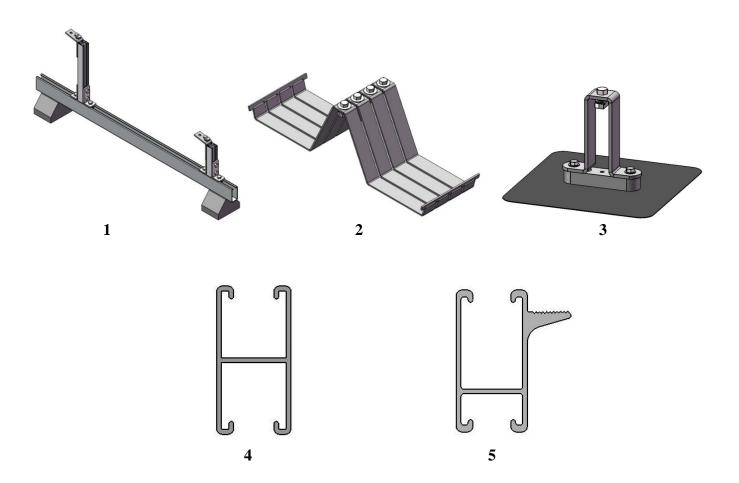
SRIS-001 AristaTM Mounting System Instruction Sheet Solar Rooftop Support Ballasted

Tools Needed For Installation

- 1. ¾" socket and wrench
- 2. Torque wrench
- 3. Tape Measure
- 4. Chalk Box
- 5. Portable saw for aluminum

Components List

- 1. Monolithic Base Assembly
- 2. Ballast Strip
- 3. Mounting Kit
- 4. Portrait Rail
- 5. Landscape Rail



Before Installation

Installer is responsible for:

- Ensuring building structure is capable of supporting all required loads associated with the solar rooftop support assembly. Refer to ASCE (American Society of Civil Engineers) 7-05 for further clarification.
- Conforming to all national and local building codes that may supersede this manual.
- Ensuring that all Cooper B-Line products are suitable for the project installation requirements.
- Ensuring only Cooper B-Line products are used in installation. Any substitution of a part without written Cooper B-Line approval may void any warranty offered on AristaTM Mounting System.
- Ensuring proper installation of all electrical components related to the installed PV array.
- Ensuring all necessary load design factors are taken into account. These factors include wind speed, snow load, topographic, exposure, etc.
- Selecting appropriate flashing to ensure a watertight seal is maintained for structure.
- Selecting proper anchor/lag bolts that have appropriate pull out and shear strength ratings to ensure proper anchoring occurs.
- Ensuring proper placement of ballasts and/or positive attachments along AristaTM Mounting System.

Operation Instructions

1. Position first monolithic base assembly as not to exceed the maximum cantilever rail position as defined as 1 ft. from end of individual rails. Using a chalk box, place a chalk line to form a straight line eastwest and also north-south from preferred starting corner. Next, place and connect stands along north-south chalk line. If required by panel orientation and shading distance, connect the north-south stands to each other using B172PA fittings and optional B11 that is cut to the correct length. Then, use tape measure to position base assemblies proper distance apart from one another along the east-west chalk line. Slide the B172PA fitting onto the top of the monolithic base assembly until two channel nuts are within the B11 channel. Turn the two bolt heads of the B172PA clockwise by hand until each channel nut is engaged under lips of channel. Tighten channel spring nuts to a torque of 40 ft-lbs. Repeat for the top rail.

Next, place the adjoining rails onto the remaining half of the B172PA fittings until the rails are flush with one another. Turn the loose bolt heads of the B172PA clockwise by hand until each channel nut is engaged under lips of channel. Tighten channel spring nuts to a torque of 40 ft-lbs (Make sure channel spring nut is oriented correctly under lips of channel).

Fill the array per the layout drawing.

Note: If any row or column exceeds 60 feet in any direction, replace a B172PA splice fitting with the appropriate expansion splice (per manufacturer's recommendation) at least every 60 feet to account for expansion and contraction of the racking system.

Accurate gap settings at the time of installation are necessary for the proper operation of the expansion splice. The following procedure should assist the installer in determining the correct gap (see chart 1):

- 1. Plot the highest expected metal temperature on the maximum temperature line.
- 2. Plot the lowest expected metal temperature on the minimum temperature line.
- 3. Draw a line between the maximum and minimum points.
- 4. Plot the metal temperature at the time of installation to determine the gap setting.

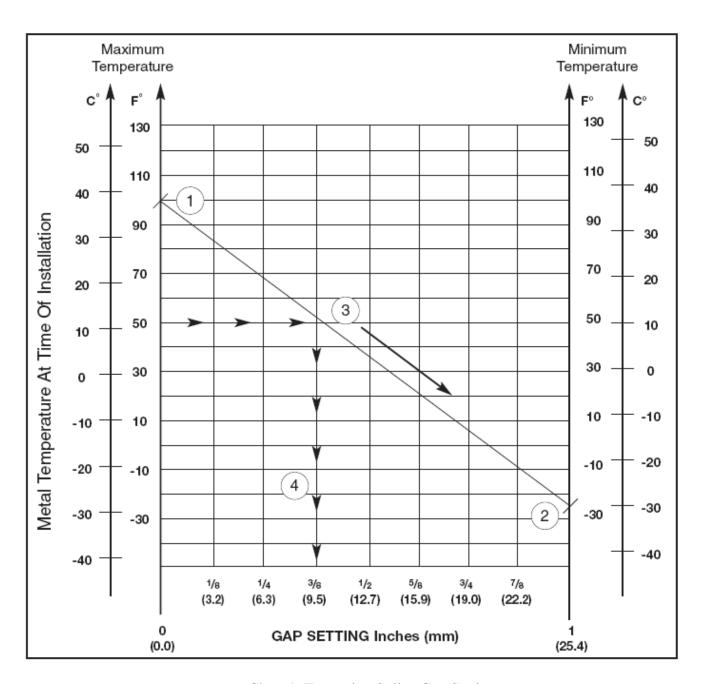
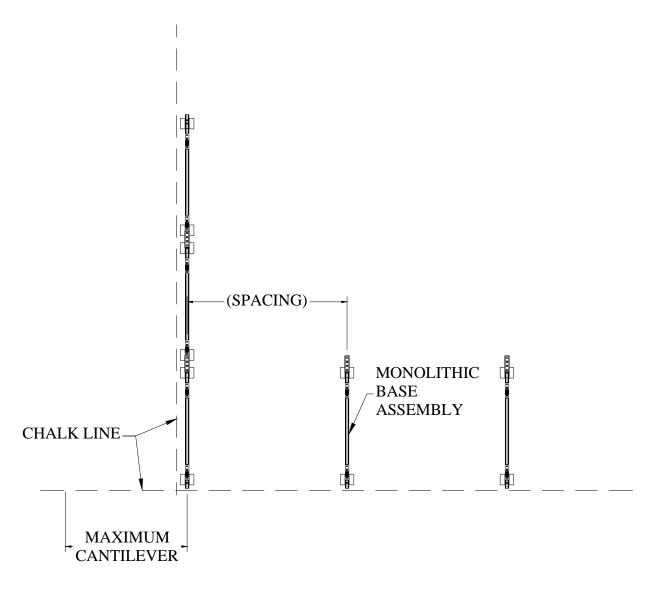
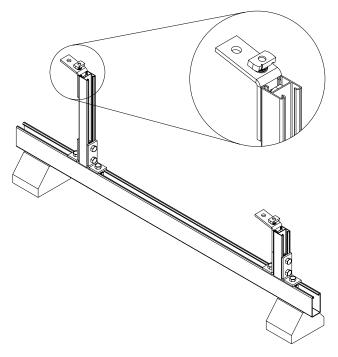


Chart 1: Expansion Splice Gap Setting

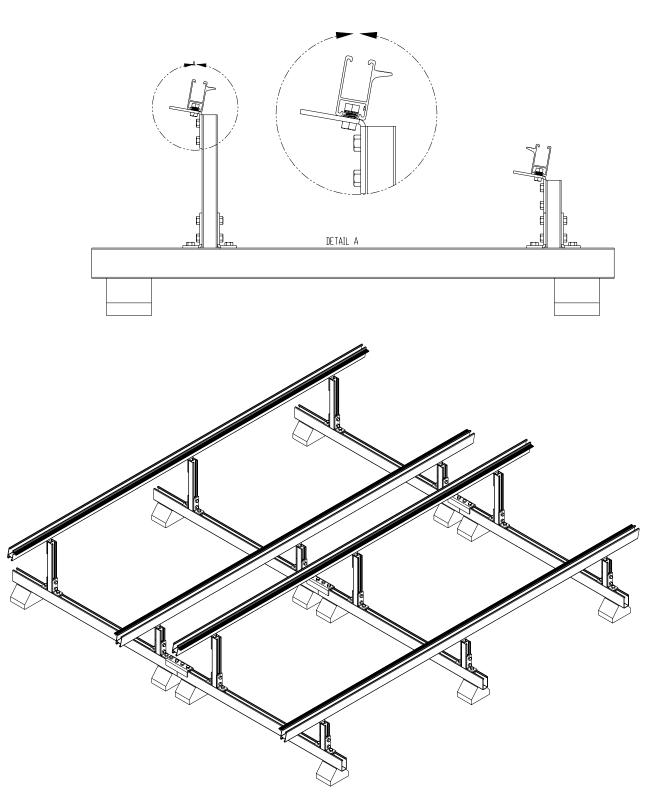


2. Correctly orient channel nuts on assemblies to allow for attachment of the rails.



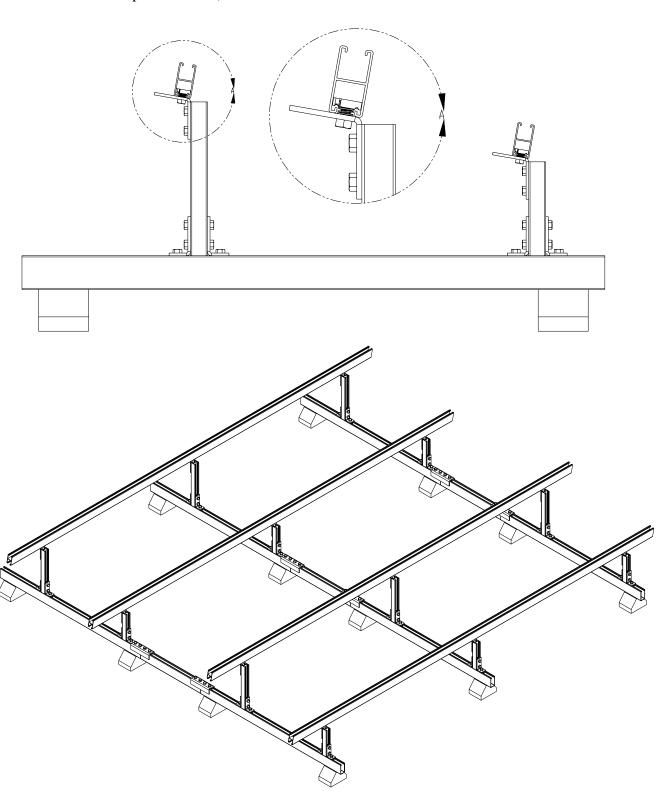
A. Landscape Mount

Align landscape solar rails (2) as shown below with pre-assembled brackets attached to the top strut assembly. Position rails to where maximum cantilever is not exceeded. Ensure top and bottom rails have an equal cantilever distance. Once rails are in position resting on the pre-assembled brackets, turn the bolt heads clockwise by hand until channel nuts are engaged under lips of channel. The landscape solar rails will form parallel lines with one another. Tighten channel spring nuts to a torque of 40 ft-lbs (Make sure channel spring nut is oriented correctly under lips of channel).



B. Portrait Mount

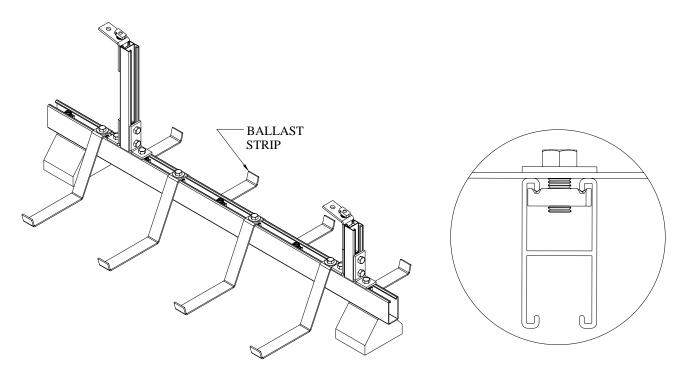
Align portrait B22A rails (2) as shown below with pre-assembled brackets attached to the top strut assembly. Position rails to where maximum cantilever is not exceeded. Ensure top and bottom rails have an equal cantilever distance. Once rails are in position resting on the pre-assembled brackets, turn the bolt heads clockwise by hand until channel nuts are engaged under lips of channel. The portrait B22A rails will form parallel lines with one another. Tighten channel spring nuts to a torque of 40 ft-lbs (Make sure channel spring nut is oriented correctly under lips of channel).



3. Install ballast strip or mounting kit onto base strut assembly as required.

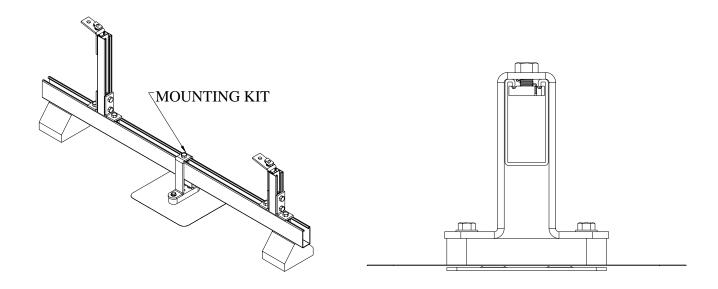
A. Ballast Strip

Position a ballast strip onto the base strut assembly by aligning the channel nuts with the bottom strut. Once ballast strip is resting on base strut, turn the bolt head clockwise by hand until channel nut is engaged under lips of channel. Tighten channel spring nuts to a torque of 20-30 ft-lbs ensuring channel nuts are oriented correctly under lips of channel (see picture below). Repeat as shown on the provided layout drawings.

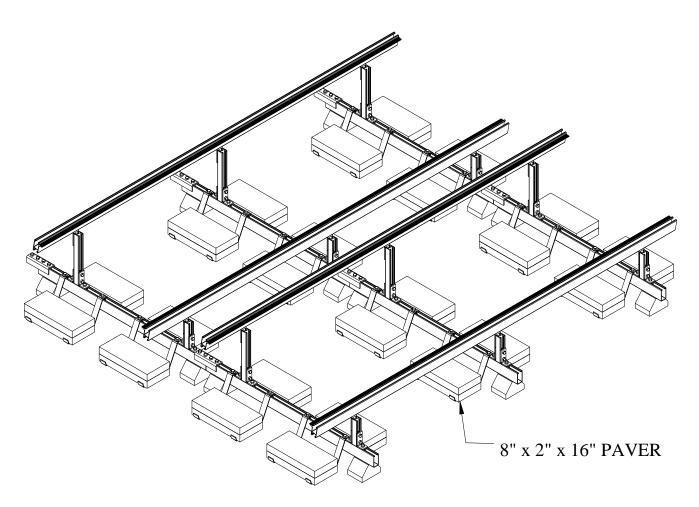


B. Mounting Kit

Position a mounting kit onto the base strut assembly by aligning the channel nut with the bottom strut. Once mounting kit is resting on base strut, turn the bolt head clockwise by hand until channel nut is engaged under lips of channel. Tighten channel spring nut to a torque of 40 ft-lbs ensuring channel nut is oriented correctly under lips of channel (see picture below). Repeat as shown on the provided layout drawings. Please refer to mounting kit installation instructions for proper attachment to building structure.



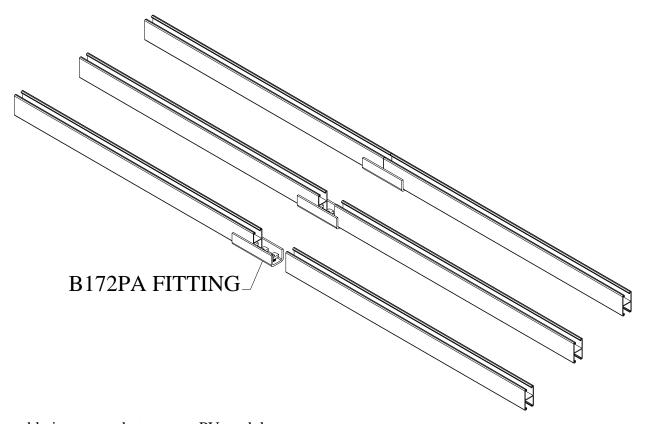
Insert equal amount of weights on both sides of ballast strips in order to meet the minimum weight requirements. Weights are based on standard 8" x 2" x 16", 16 pound concrete pavers (verify paver dimensions). Other weights can be used if minimum required weight is satisfied. Pavers are to be attached to each ballast strip and to each other with a bead line of landscape concrete paver construction grade adhesive.



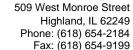
1. (OPTIONAL):

If ganging is necessary, use B172PA four hole pre-assembled splice plates to properly connect top and bottom rails of consecutive assemblies. Slide the B172PA fitting into bottom of the bottom rail until two channel nuts are within the channel. Turn the two bolt heads of the B172PA clockwise by hand until each channel nut is engaged under lips of channel. Tighten channel spring nuts to a torque of 40 ft-lbs. Repeat for the top rail.

Next, place the adjoining rails onto the remaining half of the B172PA fittings until the rails are flush with one another. Turn the loose bolt heads of the B172PA clockwise by hand until each channel nut is engaged under lips of channel. Tighten channel spring nuts to a torque of 40 ft-lbs (Make sure channel spring nut is oriented correctly under lips of channel).



Assembly is now ready to mount PV modules.





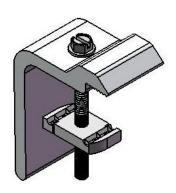
SRIS-002 AristaTM Mounting System Instruction Sheet Landscape Hold Down Clamp Assembly

Tools Needed For Installation

- 1. $\frac{3}{4}$ " and $\frac{7}{16}$ " socket and wrench
- 2. Torque wrench
- 3. Tape Measure

Components List

1. Landscape Hold Down Clamp



1

Before Installation

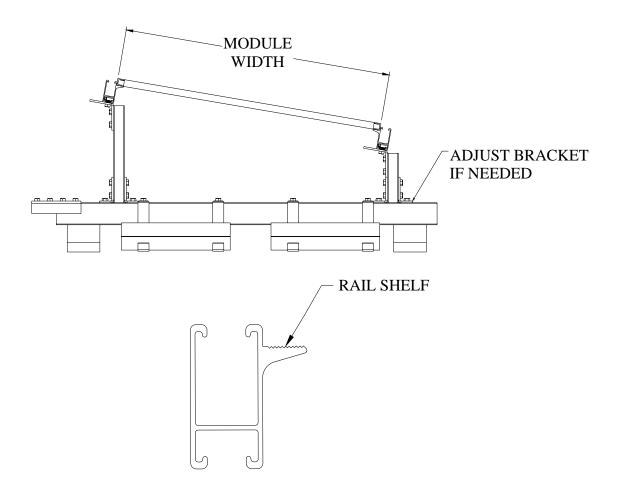
Installer is responsible for:

- Ensuring building structure is capable of supporting all required loads associated with the solar rooftop support assembly. Refer to ASCE (American Society of Civil Engineers) 7-05 for further clarification.
- Conforming to all national and local building codes that may supersede this manual.
- Ensuring that all Cooper B-Line products are suitable for the project installation requirements.
- Ensuring only Cooper B-Line products are used in installation. Any substitution of a part without written Cooper B-Line approval may void any warranty offered on AristaTM Mounting System.
- Ensuring proper installation of all electrical components related to the installed PV array.
- Ensuring all necessary load design factors are taken into account. These factors include wind speed, snow load, topographic, exposure, etc.

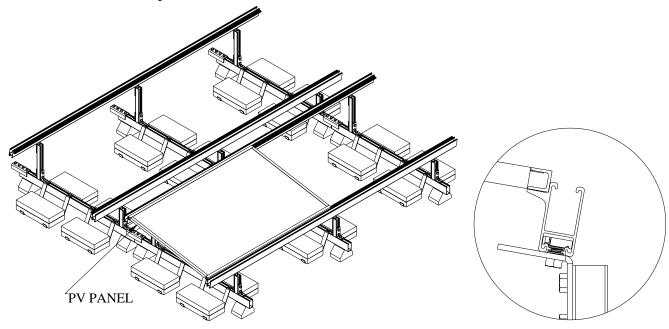
Operation Instructions

Ballasted support method shown below. Stanchion support method will follow same procedure.

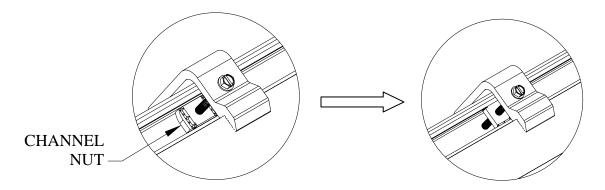
1. Verify rails are parallel with each other and are spaced correctly to accommodate your module. Ensure distance between rails is no more than ¼" greater than the width of the PV module to be installed. Adjust lower rail accordingly by loosening bolts on lower pre-assembled bracket and positioning bracket to correct module width. Torque ½" bolts on pre-assembled bracket to 40 ft-lbs. The module should rest on the rail shelves.



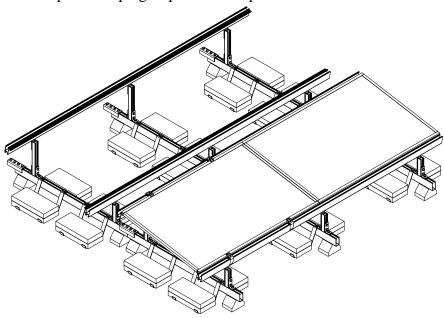
2. Place first PV module on shelves of top and bottom rails and ensure rail spacing is correct. Position module to ends of the top and bottom rails.



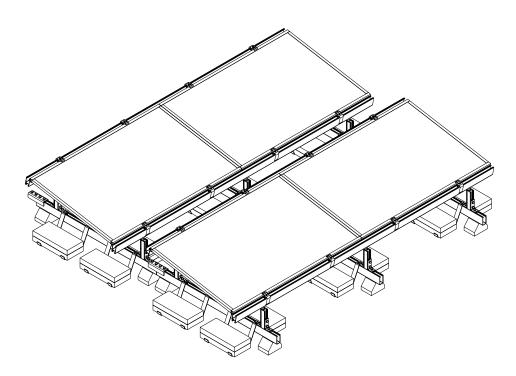
3. Position B-Line module clamps per the PV module manufacturer's installation instructions on both top and bottom rails. Ensure that clamps are pressed flush against the module frame (Adjust module clamp to ensure channel nuts are positioned correctly under lips of channel). Once module is in position resting on the rail shelves, turn the bolt heads clockwise by hand until the channel nut is engaged under lips of channel. Tighten down end clamps to a torque of 6 ft-lbs.



4. Place next PV module in line with previous installed module. Ensure there is no gap between modules sitting on the rails. Repeat clamping sequence of step 3.



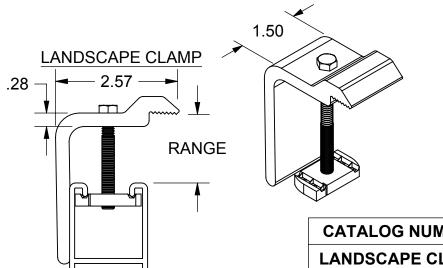
5. Repeat step 4 until PV modules are installed along the entire length of the rails.



-FASTENS SOLAR MODULES TO SOLAR ROOFTOP ASSEMBLY -TORQUE 4 TO 6 FT-LBS

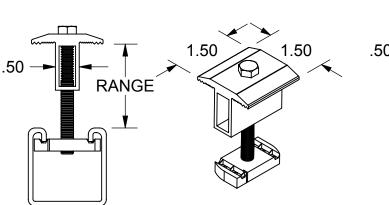
PRE-ASSEMBLY INCLUDES:

- 1 EXTRUDED ALUMINUM CLAMP
- 1 1/4"-20 SLOTTED WASHER HEX HEAD CAP SCREW
- 1 N224WO CHANNEL NUT

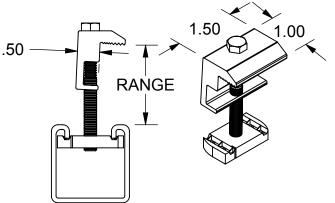


CATALOG NUMBER LOAD RANGE RATING (lbs) LANDSCAPE CLAMP 300 .75" - 1.75" SHDLND08 1.75" - 2.50" SHDLND18 300

MID CLAMP



END CLAMP



MID CLAMP		END CLAMP		
CATALOG NUMBER	LOAD RATING (lbs)	CATALOG NUMBER	LOAD RATING (lbs)	RANGE
SHDMID10	600	SHDEND10	250	1.0"-1.5"
SHDMID15	600	SHDEND15	250	1.5"-2.0"
SHDMID20	600	SHDEND20	250	2.0"-2.5"

SUBMITTAL DRAWING



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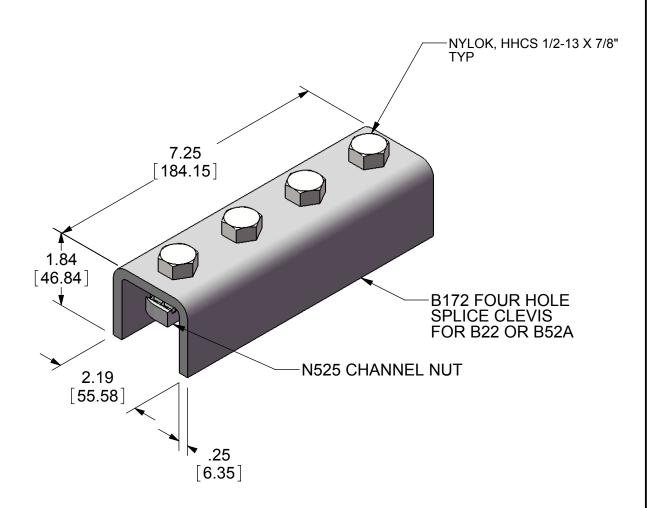
FAX (618) 654-5499

ITLE:	
	SOLAR MODULE HOLD DOWN
	PRE-ASSEMBLED

FERENCE DWG(S):	SUBMITTAL NO:
	S00017106

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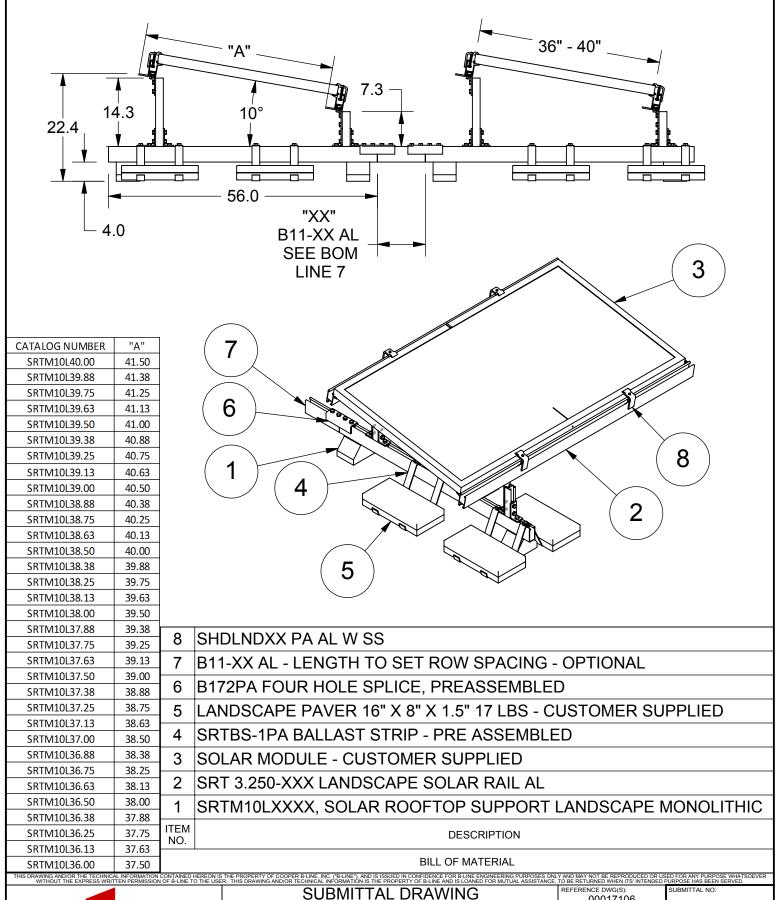


DIMENSIONS IN BRACKETS [] ARE MILLIMETERS

- BOLTS AND CHANNEL NUTS PREASSEMBLED TO FITTING FOR FASTER INSTALLATION

- FINISH: ELECTRO-PLATED - WT/PC: 3.22 LBS [1.46 KG]







509 W. Monroe Street Highland, IL 62249 Phone (618) 654-2184 FAX (618) 654-5499

AX (618) 654-549 www.cooperbline.com ARISTA MONOLITHIC ROOFTOP SOLAR RACKING SYSTEM 10 DEGREE LANDSCAPE 36"-40" SOLAR MODULES

EQUIPMENT FURNISHED HAS BEEN FABRICATED IN ACCORDANCE WITH THIS DRAWING.

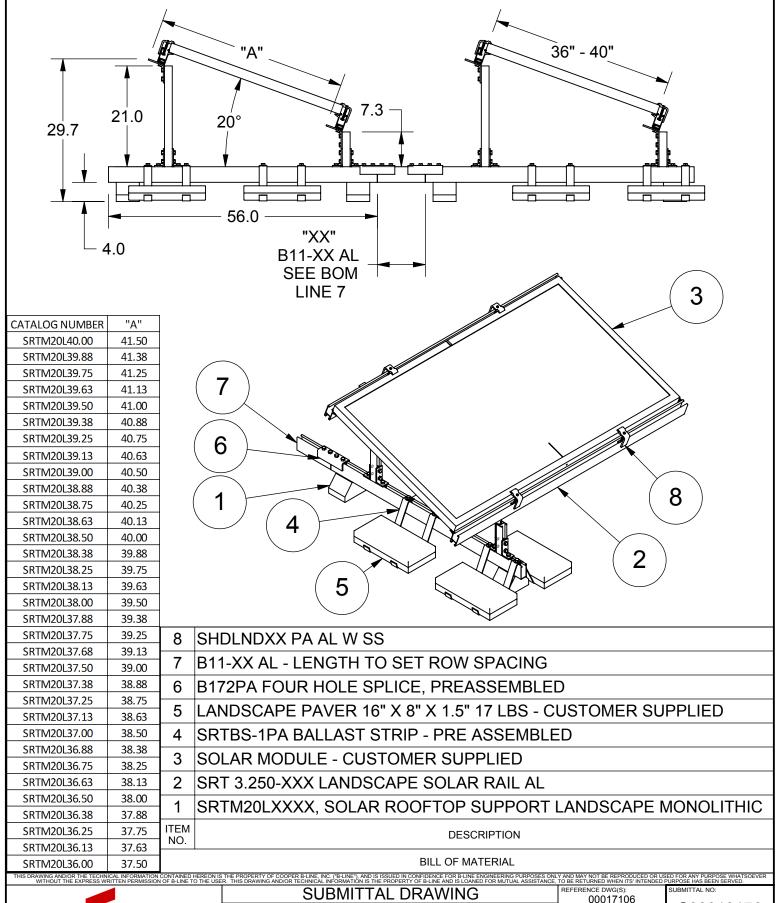
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DATE: 01/31/2011

MODEL SOURCE FILE: S00018175

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ARISTA MONOLITHIC ROOFTOP SOLAR RACKING SYSTEM 20 DEGREE LANDSCAPE

20 DEGREE LANDSCAPE 36"-40" SOLAR MODULES

EQUIPMENT FURNISHED HAS BEEN FABRICATED IN ACCORDANCE WITH THIS DRAWING.

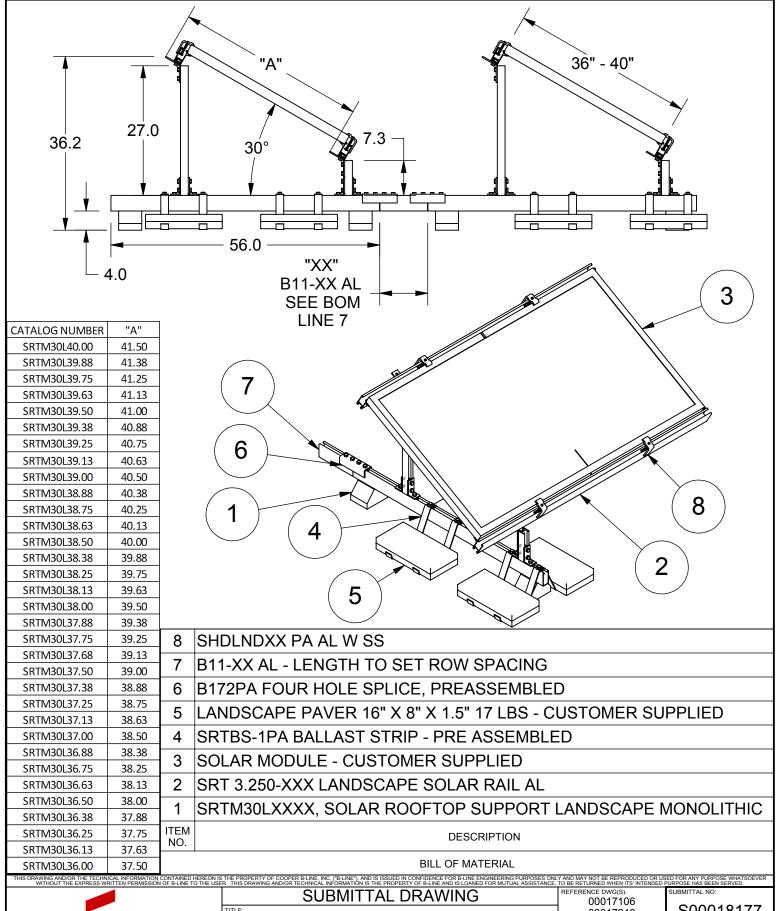
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DATE: 01/31/2011

S00018175 1 OF 1





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ARISTA MONOLITHIC ROOFTOP SOLAR RACKING SYSTEM 30 DEGREE LANDSCAPE 36"-40" SOLAR MODULES

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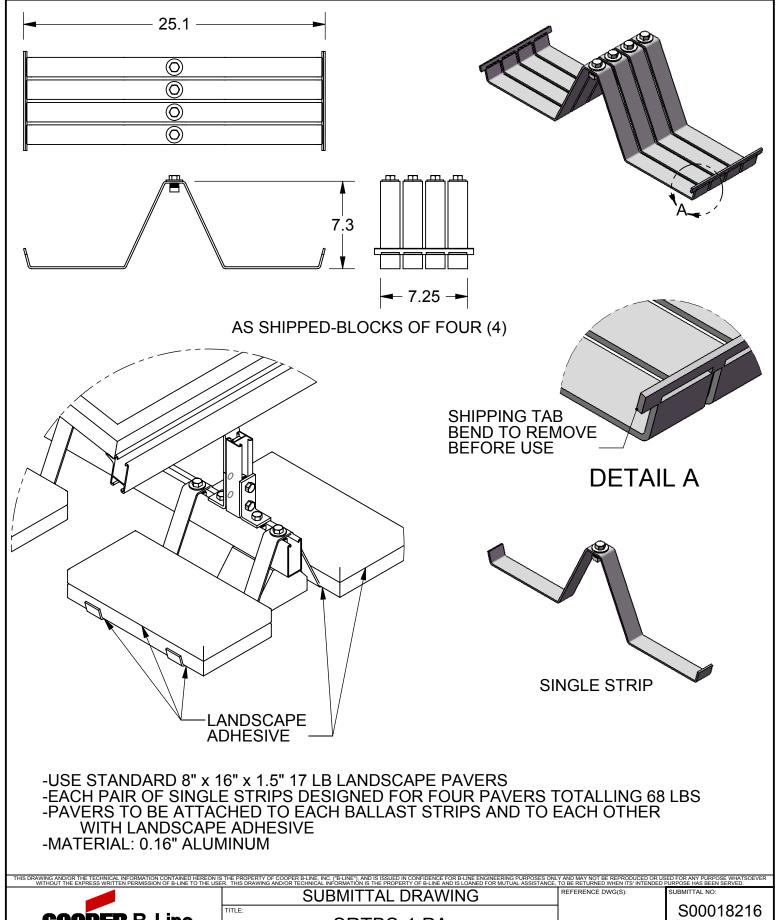
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MODEL SOURCE FILE:

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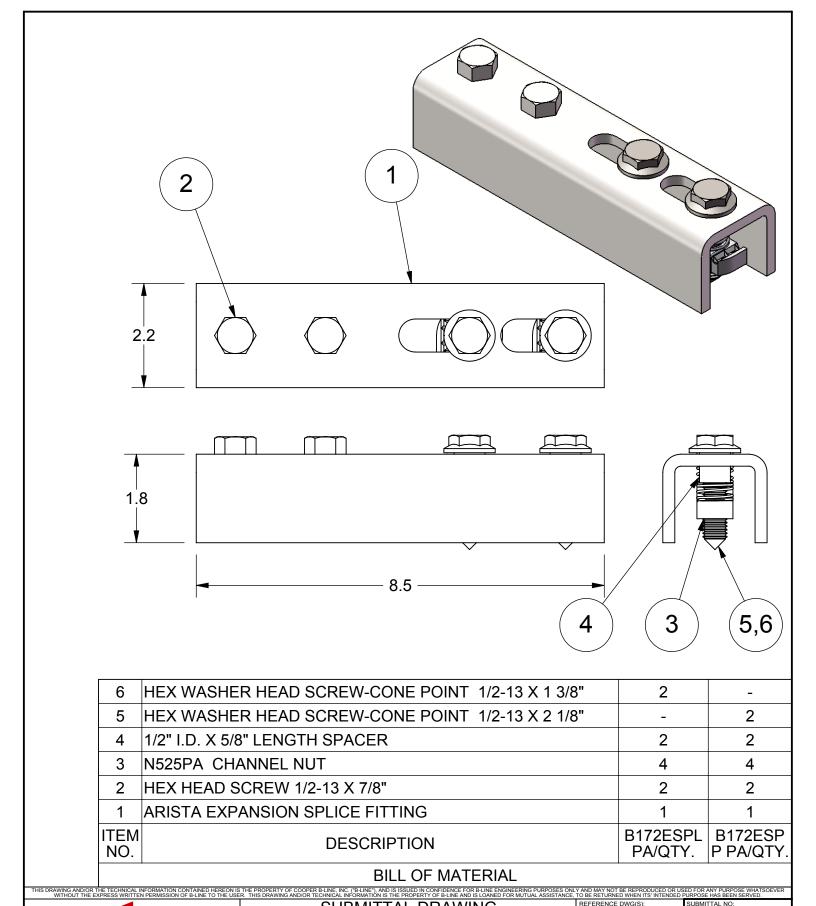
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COOPER B-Line

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SUBMITTAL DRAWING TITLE:

B172ESPLPAZN B172ESPPPAZN ARISTA MONOLITHIC **EXPANSION SPLICE**

EQUIPMENT FURNISHED HAS BEEN FABRICATED IN ACCORDANCE WITH THIS DRAWING.

SSK2987 **ERN**

02/02/2011 MODEL SOURCE FILE:

1 OF 1 SK2987

