



# SOLAR CARPORT

## SINGLE ROW

### INSTALLATION INSTRUCTIONS

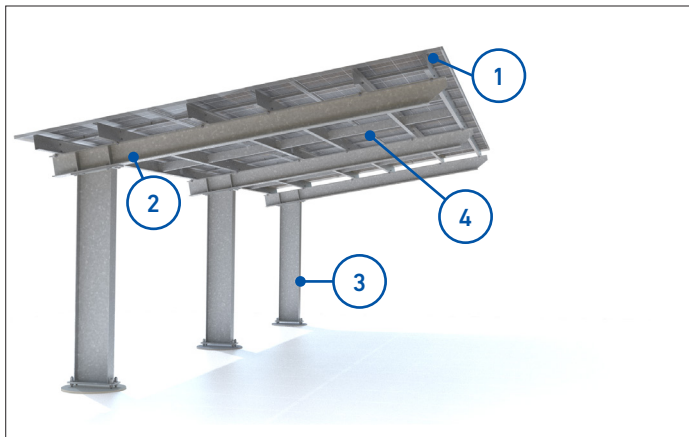


#### IMPORTANT SAFETY INFORMATION

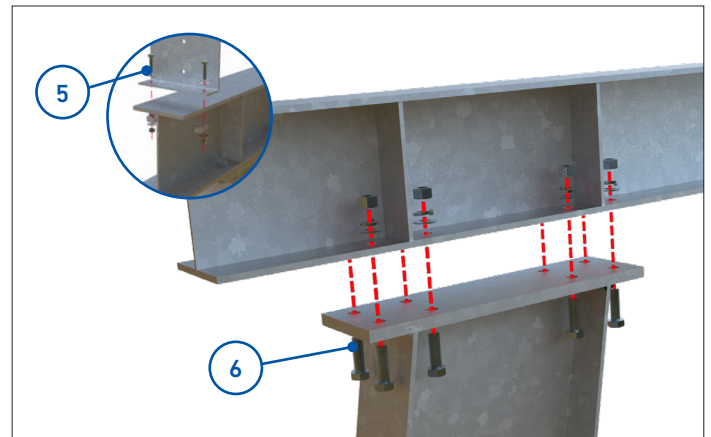
**READ AND COMPLETELY UNDERSTAND ALL INSTRUCTIONS BEFORE INSTALLING PRODUCT. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY OR DEATH.**

This product is intended for use by trained technicians only. This product should not be used by anyone who is not familiar with and not trained to use it. When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact. Be sure to wear proper safety equipment per your company protocol. These instructions are not intended to supersede any company construction or safety standards. These instructions are offered only to illustrate safe installation for the individual. PLP products are intended for the specified application only. Do not modify this product under any circumstances. Do not reuse or reinstall any PLP product unless that capability is expressly indicated in the product's Installation Instructions. For proper performance and personal safety, be sure to select the proper PLP product before installation. PLP products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.

#### PACKAGE COMPONENTS



1. C-Purlin
2. I-Beam Strongback
3. I-Beam Column
4. Blocking Purlins
5. Purlin Attachment Bracket with 1/2" Hardware
6. 1" Hardware



#### Tools Required:

- 7/16" Wrench or Socket for 1/4" Module Hardware
- 3/4" Socket for 1/2" Hardware
- 1-7/8 Socket for 1-1/4" Hardware
- 1-1/2" Socket for 1" Hardware
- 15/16" Socket for 5/8" Hardware
- Tape Measure
- Pneumatic Impact Drill
- Torque Wrench
- Lift or Crane

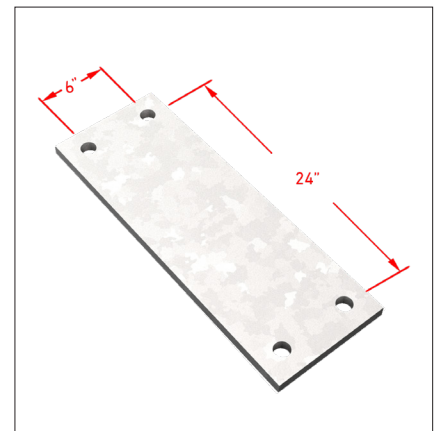
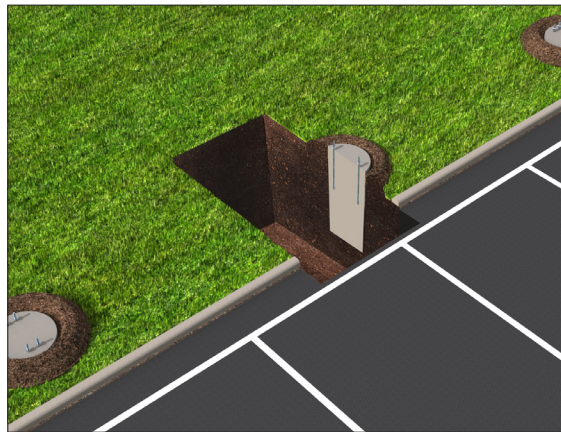
## INSTALLATION

- 1 Using an augur, dig the foundation hole. Refer to the engineered plans provided for your project. Before pouring the concrete foundation, assemble a rebar reinforcement cage in the hole. The rebar should consist of #3 circular ties and #7 vertical ties throughout. Refer to the engineered plans provided for your project for more detail.

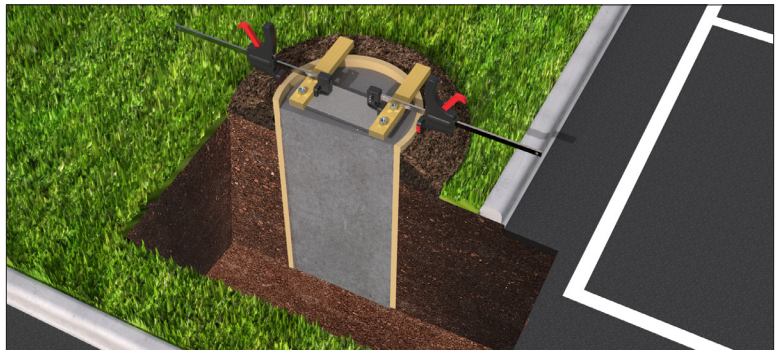
If your project calls for a conduit run through the concrete pier, now is a good time to position the conduit in the foundation hole. If multiple conduit runs are being installed, take care to leave a full conduit diameter between each conduit run.

Next, pour the concrete foundation. If your project calls for a raised foundation, use concrete forms during the pour. The foundation's height should not exceed 3 ft. The minimum compressive strength of the concrete after a 28 day cure time should be 4500 psi. Refer to the engineered plans provided for your project for more detail.

Finally, the anchor bolts can be placed into the wet concrete. Using 1-1/4" Grade 55 Anchor bolts, embed them in the concrete a minimum of 36" in depth. Forms can be used to hold the anchor bolts in place while the concrete cures. Below is a template to assist with dimensions for bolt placement.



- 2 Once the concrete is cured, remove the forms holding the anchor bolts. At this time, add the supplied 1-1/4" leveling nuts and washers to the anchors to prepare for setting of the vertical column.



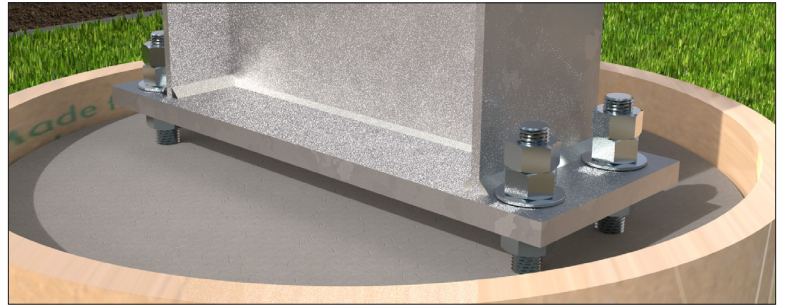
- 3 Position the vertical beam over the anchor bolts. It is recommended to use a lift or a crane to lower the beam into position. Check the column for plumbness in all directions and loosen/tighten the leveling nuts as necessary.



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Fix the column in place using 1-1/4" washers and double nut. Tighten the bolts until snug, then go a 1/2 turn more.

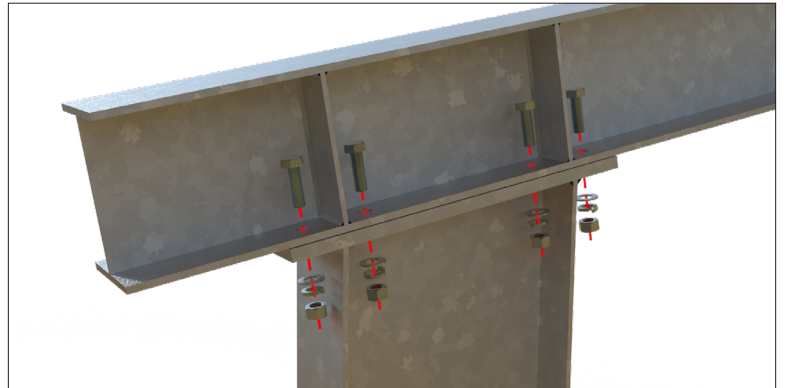
Repeats Steps 3 and 4 for each column needed for your project.



5

Using a lift or crane, position the Strongback beam over the column. Hold the Strongback in position while adding the hardware to secure the beams together. Using the supplied 1" hardware, secure the bolt, washers, lock washer, and nut. Torque to 425 - 508 ft-lbs.

Repeat this process for remaining columns in your project.



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Continue the installation by positioning the purlin brackets on the Strongback.

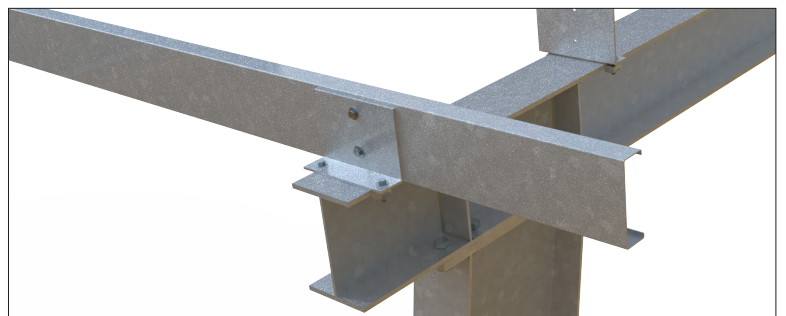
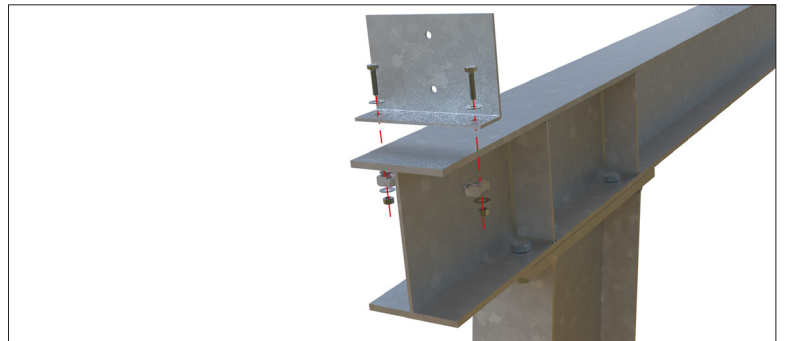
The purlin bracket is meant to sit on top of the Strongback, and using the supplied 5/8" hardware, clamp onto the beam flange.

Refer to your engineered project plans for specific placement of the brackets. The module manufacturer's specifications will also help with spacing between the panel mounts.

With the bracket in position, start by hand tightening each side of the bracket onto the Strongback flange. With a torque wrench, torque the hardware to 73 ft-lbs.

Repeat this process for the remaining purlins in your system.

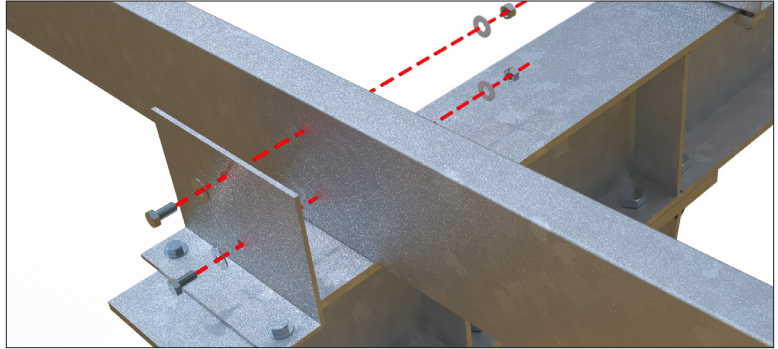
**NOTE:** Purlins alternate directions. While positioning the purlin brackets, make sure they are positioned to always mount to the face of the purlin, and not the channel.





- 7 Mount the purlins by resting them on the Strongback and against the fastened purlin bracket. Using the provided 1/2" hardware, secure the purlin to the purlin bracket. Torque to 37 ft-lbs.

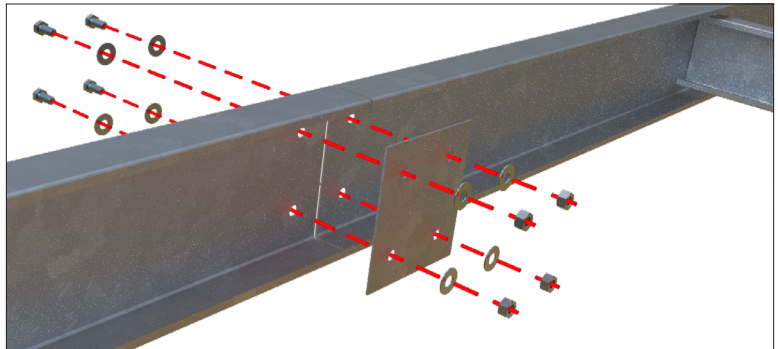
Repeat this process for all intersections of the Strongback and purlins.



- 8 Depending on the size of your project, the purlins may need to be spliced together. When two purlins come end to end, a splice is required.

For mounting, use the provided splice kit and 1/2" hardware to thru bolt to the face of the purlins. Hand tighten the hardware before using a torque wrench to secure. Torque to 37 ft-lbs.

Repeat for all purlin to purlin intersections.



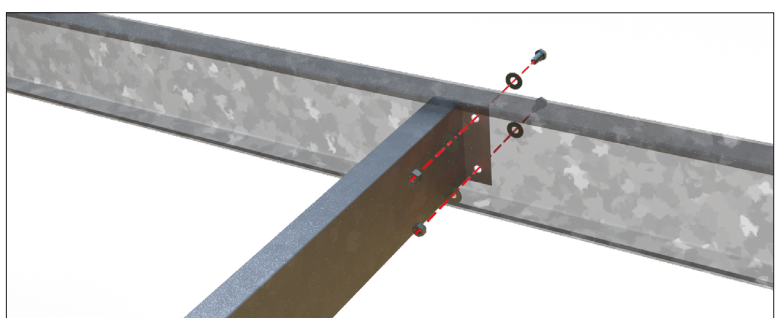
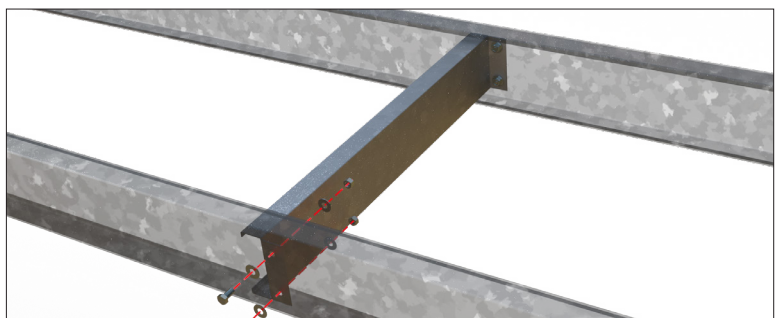
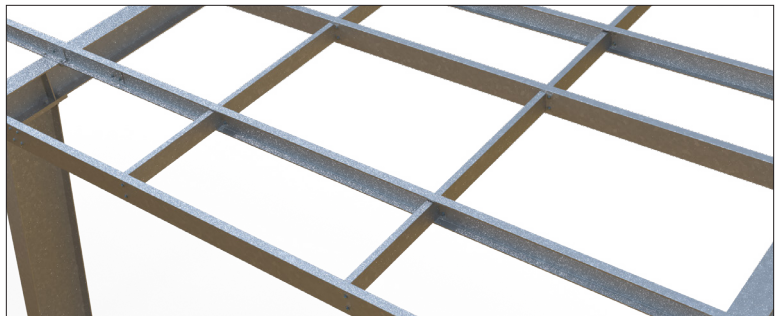
- 9 Next, is installing the blocking between purlins for additional bracing. The project installation kit will include short and long braces. The short braces are to be installed on purlins that are supporting the same solar module, while the long braces attach to the inner-row purlins.

Start by installing the shorter braces on one of the outer most purlins. Align the holes of the bracing with the holes in the face of the purlin and insert the provided 1/2" hardware.

Repeat the process for the longer braces.

**NOTE:** The 1/2" hardware is shared between the short and long brace connection.

Continue alternating short and long braces as you move down the purlins. There should be a column of braces every 6'4" for the entire length of the array.

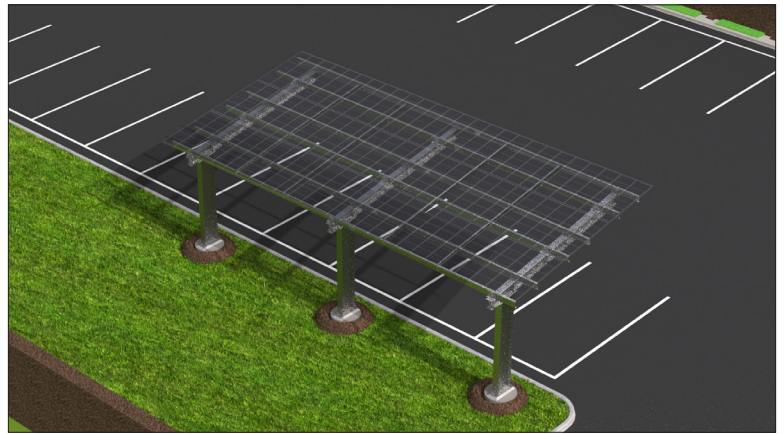


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Install the solar modules by placing them on top of the purlins. The panels will align with holes pre-drilled into the purlins to match with the solar panel selected for your project. Insert the provided 1/4" hardware and leave hand tight for now.

Continue adding panels throughout the carport until complete. Take care to maintain a 1/2" gap between each panel on all sides.

With the 1/2" gaps maintained, go back and tighten the hardware using a torque wrench. Torque to 10 ft-lbs.

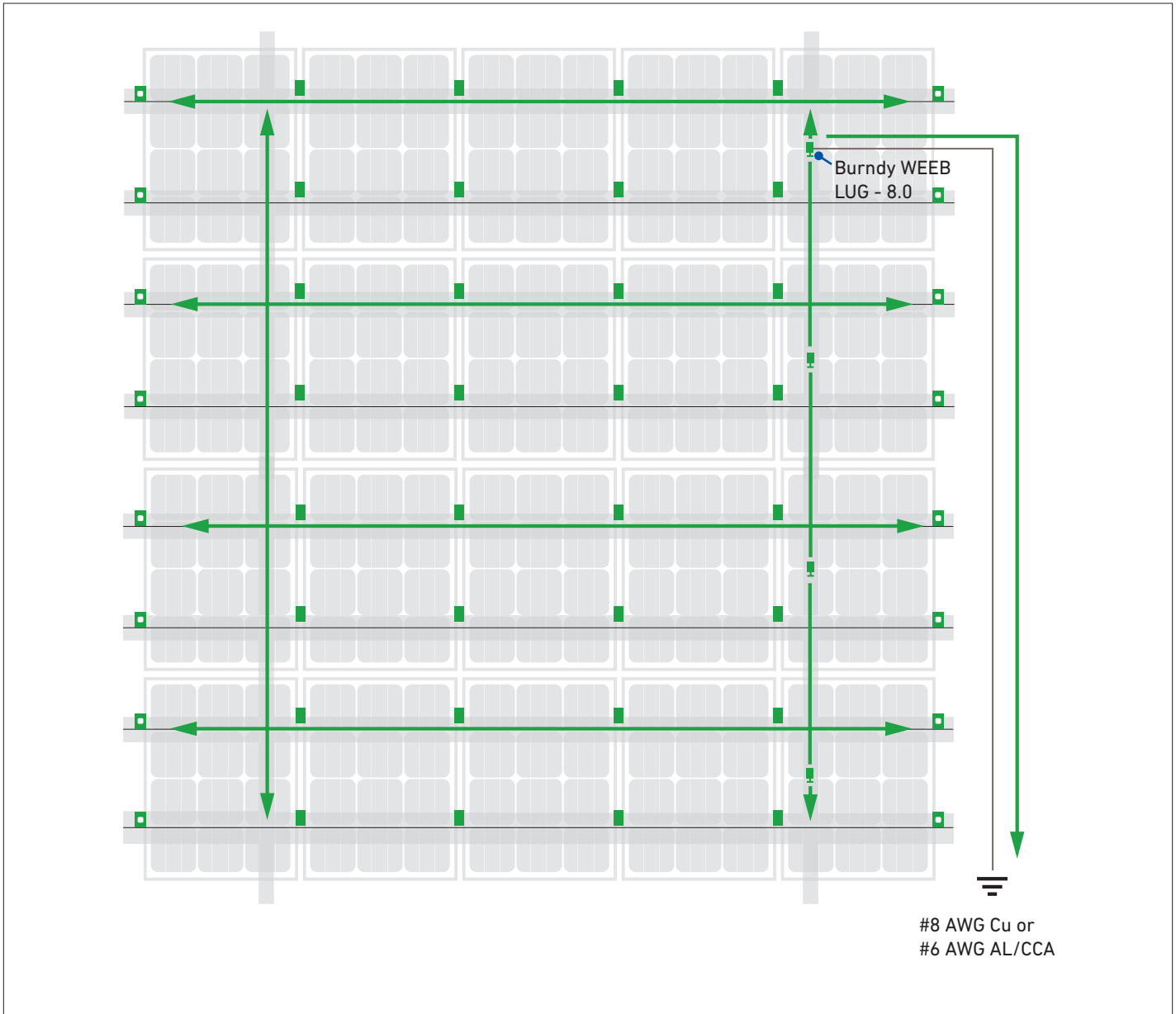


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Finish the installation by adding 2" of grout to the base of the column for a clean look.



## WEEB LUG AND WIRING



■ Module Mounting Hardware    ■ Burndy WEEB LUG - 8.0    → Ground Path

## APPENDIX: WIRE MANAGEMENT OPTIONAL

Cable management accessories, microinverters, optimizers, signs, lighting fixtures, and other equipment may be attached directly to PLP Carports per the following guidelines:

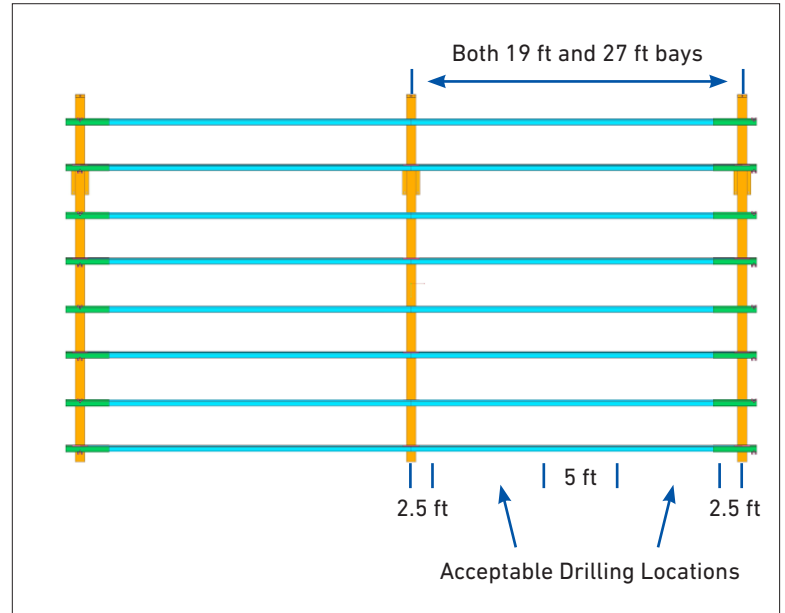
### Attachments and Cable Routing

- Drilling self-tapping screws along the C-Purlin to attach cable management accessories and equipment is acceptable.
- Holes may be drilled in the centerline of the 6" face of the C-Purlins. Maximum hole size is 1" diameter.
- Holes may not be drilled in C-Purlins within 2-1/2 ft of the I-Beam Strongback or within the middle 5 ft section of the span. Reference diagram at right.
- If multiple holes are required in a C-Purlin, the holes must be a minimum 3 ft apart with a maximum of 2 holes in the space allowed for drilling.
- Holes may be drilled near the top of the HSS Column to route cable down through the HSS tube. Maximum hole size is 1" diameter and located in the vertical centerline of the HSS Column faces.

### Equipment Weight Limits

- The maximum weight of all equipment attached to a C-Purlin including lighting fixtures, signs, and other accessories is 50 lb per C-Purlin.
- The maximum weight limit of all equipment attached to the HSS Column is 200 lb.

**NOTE:** Holes are included in the base of the HSS Column for cable routing.



## APPENDIX: PAINTING OPTIONAL

PLP Carport structures can be painted if the structure is galvanized. PLP recommends following the surface treatment specifications for painting over galvanizing noted in ASTM D6386 (ASTM D7396 for Roll Formed Purlins) and using a paint product that is designed to adhere to galvanized surfaces.



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