

# SILVERBACK INSTALLATION MANUAL

## S-SERIES SOLAR RACKS

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**Introduction..... 2**

    The Silverback Solar® Racking System ..... 2

    This manual ..... 2

    Application ..... 2

**System Overview ..... 2**

    Components ..... 2

**Preparation ..... 5**

    Material Handling..... 5

    Material Storage..... 5

    Tools ..... 6

    Review Shop Drawings ..... 6

**Installation ..... 8**

    Install Base Supports ..... 8

    Assemble Frames ..... 10

    Hat Section ..... 19

    Final Quality Check ..... 21

## INTRODUCTION

### THE SILVERBACK SOLAR® RACKING SYSTEM

The Silverback system was designed to simplify the process of building roof-top racking systems. Our bolt-together pre-manufactured system is easy to install and does not require any special skills. Your basic construction experience and this installation manual are all you need. We have reduced the normal learning curve for you by providing all the methods, tricks and tips we have developed over time for installing the Silverback system. When you follow this manual, you will be pleased at how fast and simple this system is.

### THIS MANUAL

This manual is designed to illustrate the basics of installing our Silverback S-Series Racking System. Every job is different and may require variations from procedures and materials shown in this manual. Examples shown are for a typical configuration and may not match your specific project. Please review your shop drawings to ensure your installation complies with project requirements.

### APPLICATION

The Silverback S-Series racking system is designed to be installed on flat to medium sloped roofs with any type of deck and framing system. However, this system is very versatile, and can be used in a variety of other conditions. It is important to understand that any installation requires engineering calculations by a licensed Professional Engineer to ensure its adequacy for specific conditions that apply.

## SYSTEM OVERVIEW

### COMPONENTS

The following components are for typical installations. Consult your shop drawings for specifics regarding your project and components that may not be included in this manual.

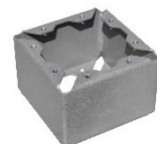
#### BASE SUPPORT

Base Supports, or Bases, are the steel stanchions that mount the Silverback System to the roof structure. They are 6"x 6" steel boxes with holes in the bottom for the attachment bolts.



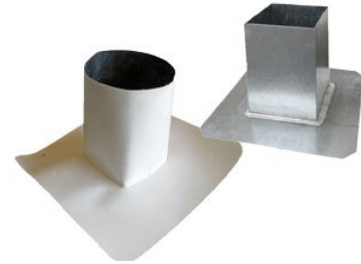
#### BASE EXTENSION

Base Extensions bolt directly to the top of the Base Supports when extra height is needed for thick insulation. Consult your shop drawings to determine if they are included in your order and how they should be fastened.



### ROOF FLASHING

Flashings, available in PVC, TPO, Galvanized and Lead, are optional components from RoofScreen. Check your order and shop drawings to determine if they were included.



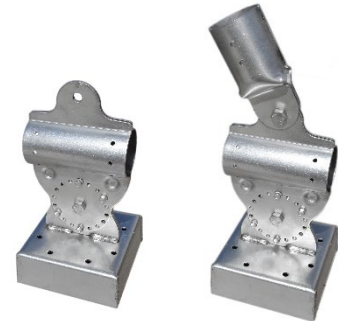
### BASE GASKET (BG11)

The Base Gasket is a self-adhesive EPDM foam seal that is applied around the top of the Flashing before the Base Assembly is installed.



### BASE ASSEMBLY (A10, A12, A18)

Depending on your frame configuration, the Base Assemblies may be with, or without end connectors attached. Consult your shop drawings to ensure the correct assembly is installed in the proper location.



### FIELD CONNECTOR WITH END CONNECTOR (A13 & A28 ASSEMBLIES)

These fittings connect the end of a tube to any point along the length of another tube. For convenience, these fittings are supplied with the bolt, nut and washer loosely installed for quick access during installation. A13 is used with 2.5" round tubes, and A28 is used with 1.5" tubes.



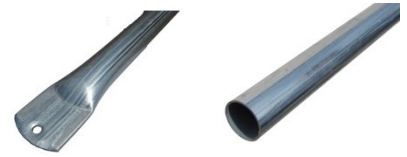
### FIELD CONNECTOR WITH BOLT (A14 ASSEMBLY)

This fitting connects the end of a crimped tube to any point along the length of another tube. For convenience, these fittings are supplied with the bolt, nut and washer loosely installed for quick access during installation.



### TUBING (T10, T11, T12, T13)

Tubing is provided in different diameters and gauges as required by the structural calculations. It is important to carefully review the shop drawings to determine the proper locations for each tube. Some tubes will be crimped (flattened) on the end, which saves time and money by eliminating a fitting.



### HAT SECTIONS (H10, H13, H20, H25)

Hat Sections, or Hats, are typical steel members used as rails to support the solar modules.



### BOLT WITH POLY WASHER (B11)

This is the bolt used to fasten the Base Assembly to the top of the Base Support. It features a special undercut shoulder and sealing washer. Note that the washers are designed for one use only. If you remove the bolt after tightening, you should replace it with a new bolt to ensure a watertight seal.



### TEK 3 SCREWS (S10)

S10 Tek 3 Self-Drilling Screws are the primary fasteners used on Silverback Racking components. Tek 3 Screws have a short drilling point and are typically used when fastening to thin metal like tubing and hat sections. Multiple types and lengths of screws may be specified on the same project, so please carefully review your shop drawings.



### TEK 5 SCREWS (PART NUMBERS VARY)

Tek 5 Self-Drilling Screws have a long drilling point and are useful for fastening to thick metal like steel joists and wide flange beams. Multiple types and lengths of screws may be specified on the same project, so please carefully review your shop drawings.



## PREPARATION

### MATERIAL HANDLING

When receiving material, check to see that the shipping documents match the shipment. Count the number of packages and quantities within each package to the extent possible. Check for damage at the same time. If damage or other discrepancies are found, write a note to that effect on the bill of lading, and have it signed by the driver.

Tubing and hat sections for large orders may be delivered via flatbed truck in bundles with metal bands. For smaller orders, tubing and hat sections may be in wood crates and delivered via flatbed or enclosed trailer. Fittings and hardware are packaged in heavy cardboard pallet crates. These materials are heavy and will require a fork lift or crane to unload.

- ! Do not lift bundles by the metal bands. Either use a fork lift from underneath, or use straps around the entire bundle.
- ! Do not lift wood crates by the slats or cross members. Either use a fork lift from underneath, or use straps around the entire crate.
- ! When using a fork lift, spread the forks as far as possible to balance the load. Drive slowly when moving long bundles over uneven surfaces to avoid tipping the load.
- ! When using a crane or any other type of hoist, position sling straps so that the space between straps is at least 1/3 the length of the bundle. Use sling straps with looped ends, running one end of the strap through the loop at the other end to cinch the bundle when lifted.
- ! When setting loads on the roof, put wood blocks under it to protect the roof and allow space to remove sling straps.
- ! Heavy bundles and crates should be spread out on the roof to avoid overloading the roof structure. Place materials directly over major supports such as beams or trusses.
- ! Bundles of tubing should be positioned parallel to the roof slope so they don't roll down-slope when unbundled.
- ! Use caution when cutting metal bundle straps as tension on the strap may cause it to spring up potentially causing injury.

### MATERIAL STORAGE

If material is going to be stored outdoors for any period of time, we recommend covering it with plastic or tarps. Bundles of tubing and hat section can be left uncovered if the load is raised at one end to allow water to run off.

## TOOLS

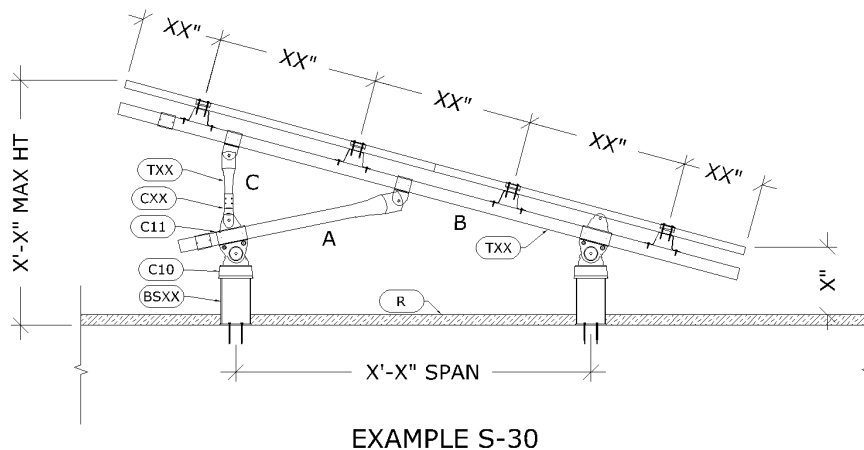
The following is a list of recommended tools to perform the installation:

1. 200' tape measure
2. String line
3. 6" "Torpedo" level
4. Digital inclinometer (Smart Level)
5. Construction crayon
6. Ear plugs
7. Safety glasses
8. Heavy-duty extension cords
9. Large Vise Grip Clamps
10. Open end and socket wrench set
11. Power drill
12. ½" drive power impact driver
13. Cordless drill/driver gun
14. Self-leveling laser level with tripod.
15. Power skill saw with metal cutting blade
16. Reciprocating saw with metal cutting blade
17. Several lengths of wood 2x4 material (length should equal height of array from roof deck)

## REVIEW SHOP DRAWINGS

At this point, it is a good idea to read this entire installation manual in conjunction with reviewing the shop drawings. The shop drawings are very detailed and contain specific information about how to properly install the system that may not be covered in this manual. It is highly recommended to obtain a full-size print of the drawings so all the details and dimensions are readable. The drawings will include one or more section details of the racking frames similar to the examples shown in Figures 1-3.

**Important:** Figures 1-3 are examples of a few common configurations out of the many possible with Silverback S-Series Racking. Consult your shop drawings for details specific to your project



**FIGURE 1**

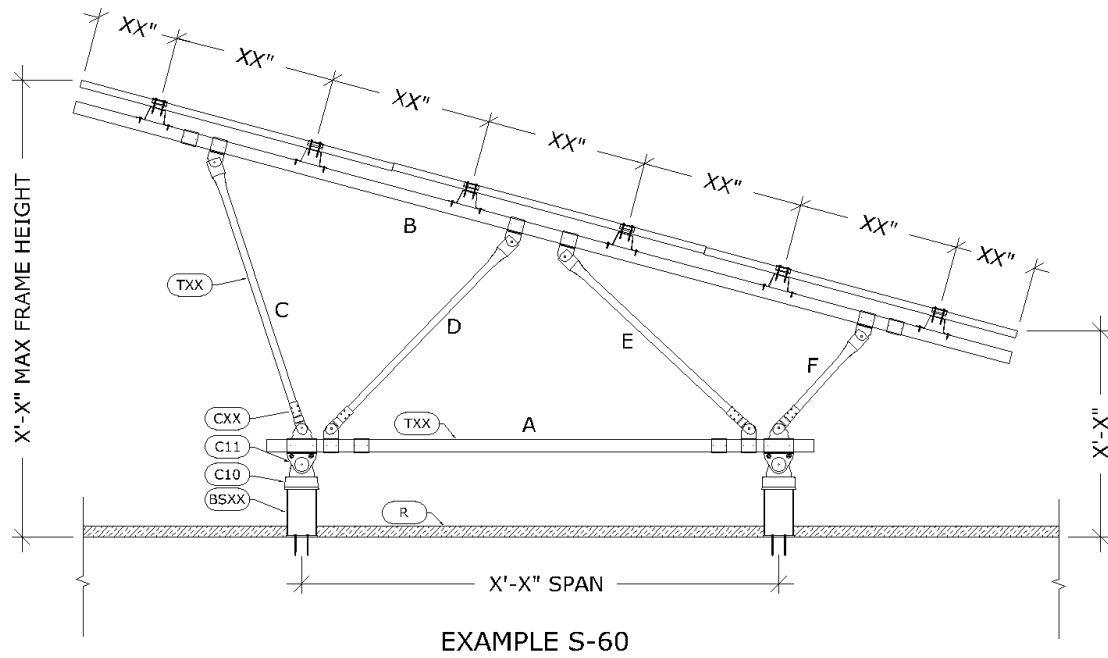


FIGURE 2

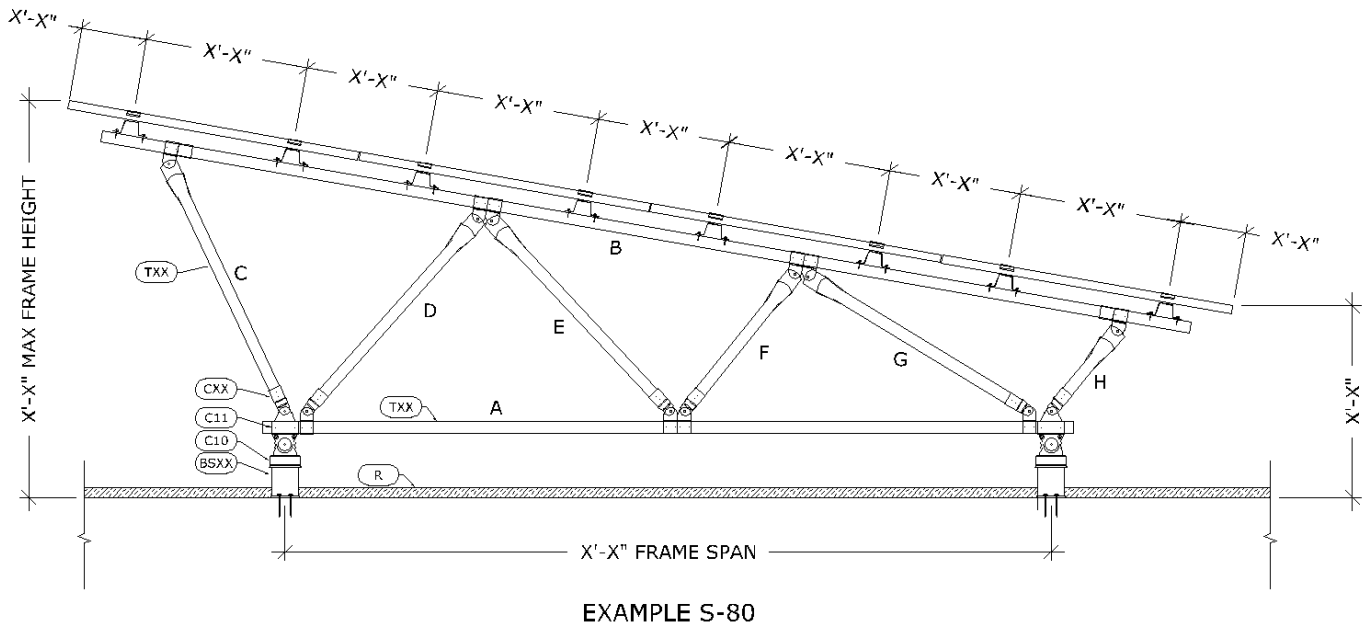


FIGURE 3

Frame configurations shown on shop drawings are based on engineering calculations and should be followed exactly. If any parameters cannot be followed, please contact us at 877-765-2759 for assistance. Section details cross reference to the roof plan layout on the drawings. If multiple frame types are included in your project, it is important to ensure you build the frames to specifications in the details and place them in the correct locations in the layout. Please also note the callout bubbles on the details, which reference specification notes. These notes contain important information about the installation, including quantity and type of fasteners required for different components.

Frame details also contain tubing labels, typically A, B, C, D, E and F, to correspond with the pre-cut tubes in your shipment.

## INSTALLATION

This manual covers techniques and procedures for installing a typical Silverback S-Series Racking System. For illustrative purposes, this manual shows an S-60 Racking System. However, there are many variables that make each project unique, so please use this manual as a general guideline for installing our product. If you have a specific question that is not covered in this manual, or you would like some help with your installation, please feel free to contact us at 877-765-2759.

### INSTALL BASE SUPPORTS

#### STEP 1: INSTALL BASE SUPPORTS AT ARRAY ENDS

Referring to array layouts in the shop drawings, place the Base Supports for the first and last frame in each array in their proper location (see Figure 4). Mount the Base Supports to the roof structure per requirements specified in the shop drawings. To install the remaining Base Supports, a string line will be pulled between end Bases as illustrated in Figure 4 and described in the next step.

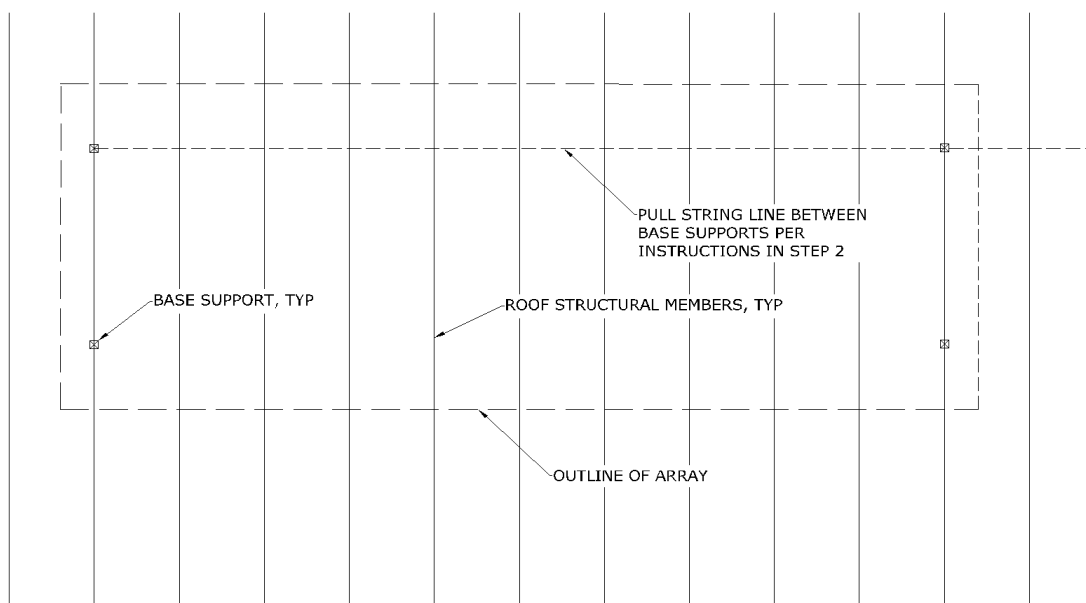
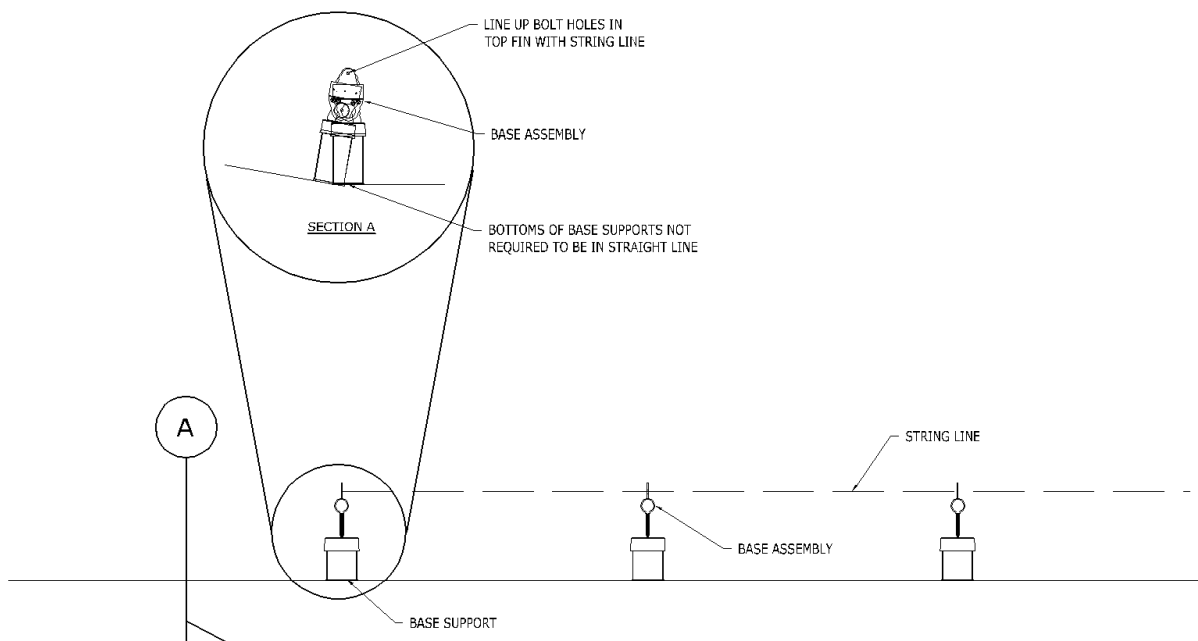


FIGURE 2



### STEP 2: INSTALL REMAINING BASE SUPPORTS

Install the remaining Base Supports following the details and layout in the shop drawings. For the solar array to plane and level correctly, the Base Supports must be installed so that the bolt holes in the top fins of the Base Assemblies are in a straight line (see Figure 5). If the roof is perfectly flat or all the Bases are in the same smooth plane, this process is simple. You can pull a string line from the top of the end Base Supports to use as a guide to line up the remaining Base Supports. When the Base Assemblies are installed later, the bolt holes will line up. However, if the roof has varying slope directions or other undulations, you must follow these instructions: Install the end Base Supports with Base Assemblies temporarily mounted to them. Pull a string between the two, using the bolt hole in the upper fin as the tie-off point. If the distance between Bases is too far to use a string, you will need to use a laser level set up in vertical mode. The remaining Base Supports should then be installed by temporarily mounting a Base Assembly on each one to line up the top bolt hole along the string. Note that the bottoms of the Base Supports may not be exactly lined up due to undulations in the roof slope, but it is important to place them so that the bolt holes in the upper fin *are* lined up.



**FIGURE 3**

### STEP 3: INSTALL FLASHINGS

Flashing type varies depending on the project and type of roofing system. A qualified professional roofing contractor should install the flashings and roof them in with appropriate methods for the type of roofing system being used.

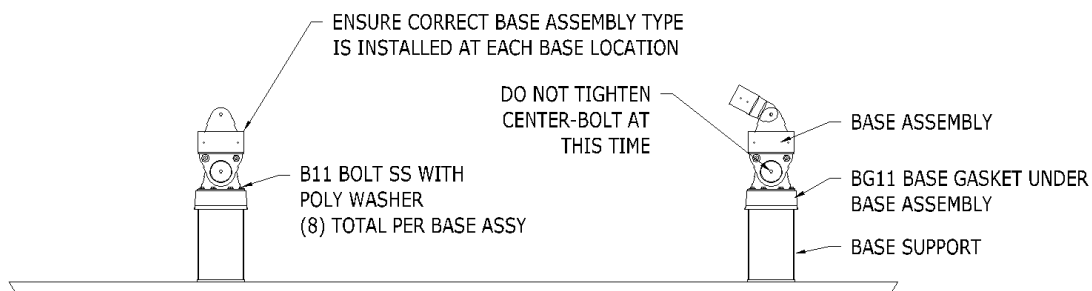
Note: Use care in handling the Flashing Boots. If they are bent and dented from rough handling, they may not fit easily over the Base Supports.

Either the roofer or the racking installer should adjust the height of the Flashing Boots to account for thickness of roofing and insulation. The Base Flashing should terminate flush with the top of the Base Support when possible, but not more than ½" below.

**STEP 4: INSTALL BASE GASKETS AND BASE ASSEMBLIES**

With all Base Supports installed and roofed in, install the Base Gaskets over the flashings. The gasket strip is self-adhering and has a removable backing. Peel the backing off and stick the gasket on the outside of the flashing, flush with the top. The gasket is not meant to be pulled or stretched during installation, however it may be necessary to stretch it slightly at the end so the ends meet evenly.

After the Gaskets are in place, install the Base Assemblies. Refer to the shop drawings to determine the correct Base Assembly for each frame. Base Assemblies are attached with (8) Bolts with Poly Washers, Part# B11. The bolts thread into pre-tapped holes in the top of the Base Support. Start the bolts by hand, threading each one a few turns to make sure they are not cross-threaded. Once all 8 bolts are started, tighten the bolts moving in a crisscross pattern similar to tightening lug nuts on a car wheel. Do not tighten the center bolt in the RotoLock of the Base Assembly at this time. See Figure 6.



**FIGURE 4**

## ASSEMBLE FRAMES

**STEP 5: DETERMINE FRAME HEIGHT**

Sloped roofs will have varying Frame Heights. The frame detail(s) shown in the shop drawings represents the tallest frame allowed by engineering. All tubes are pre-cut and delivered to dimensions of that tallest frame. Since the top of the array is typically at a consistent elevation, the tallest frame on the project is where the roof slope is at its lowest point. Frames located where the roof slope rises beyond the lowest point will be built shorter, which will require trimming of the tubing lengths. See Figure 7.

It is important to note that frames also have a minimum height specified in the shop drawings. Make sure to build the array high enough to allow for this minimum height for frames located in areas where the roof slope is at its highest point.

The detail(s) in the shop drawings also show the maximum elevation to the top of the array from ground level. This maximum engineered height cannot be exceeded. Set a laser level to the desired top-of-array elevation and measure from the laser beam to the lowest point in the roof (where a frame will be located). This measurement represents the tallest frame on the project and must be equal or less than the max frame height shown on the shop drawings.

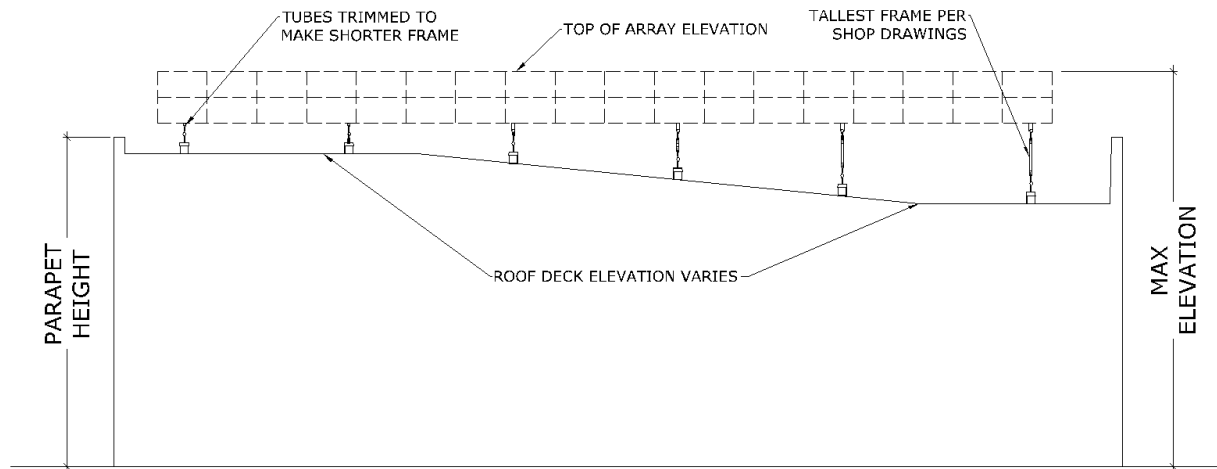


FIGURE 5

**STEP 6: PLAN FOR LATERAL BRACING**

Before you begin to build the frames, you must fully understand where lateral bracing will be placed because many of the brace connectors will be installed while the frames are assembled. Failure to include the brace connectors during frame assembly may result in the requirement to disassemble the frames later to install the fittings.

Lateral bracing configuration is specific to each project and will be detailed in the shop drawings. A common configuration is illustrated in Figure 8, with braces in every other bay (spaces between frames) and positioned at the high and low ends of the array.

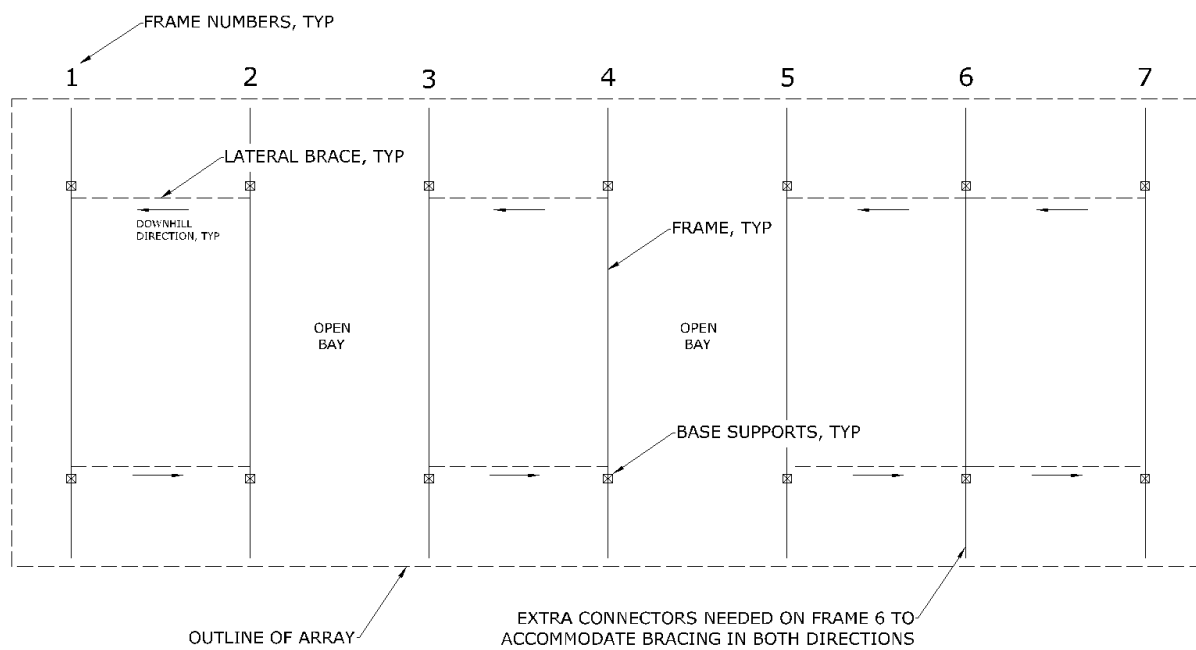


FIGURE 6

In some cases, there will be lateral bracing in two consecutive bays as shown in Figure 8 (bay 5-6 and 6-7). This is important to note because as you build the frame (#6 in the example), more connectors will need to be installed for the bracing to accommodate bracing in both directions.

Lateral braces typically consist of A14 and A13 Assemblies and a length of tubing crimped at one end. Figure 9 illustrates the typical configuration and possible locations of these assemblies. Make sure to review your shop drawings for specifics on your project. If lateral brace connectors are to be placed above or below the last tube connector assemblies, they may be installed later.

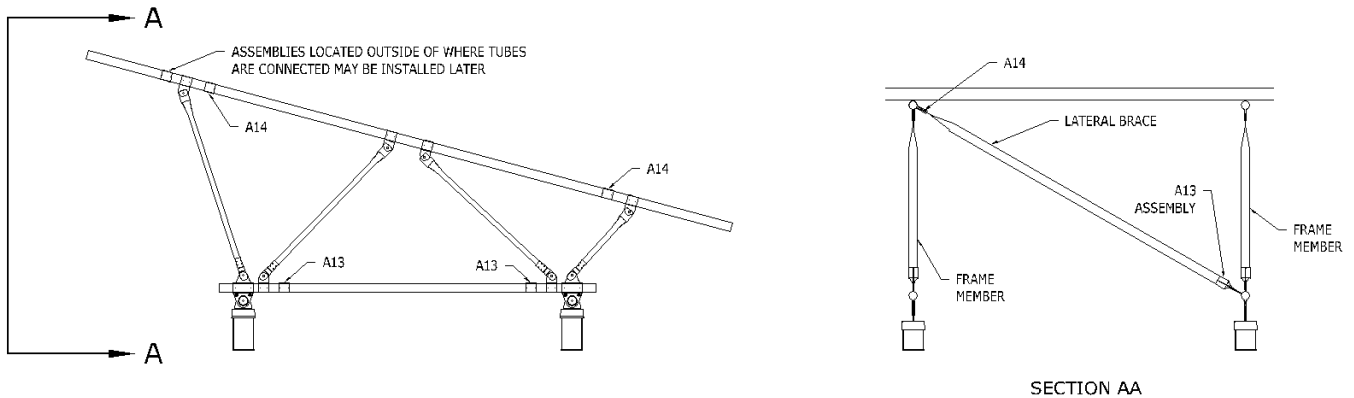


FIGURE 7

**STEP 7: INSTALL HORIZONTAL TUBES**

For purposes of this installation manual, we will be referring to tube labels as shown in Figure 2, which is the typical labeling scheme. In some cases, the tubes may be labeled differently so it is important to review your shop drawings carefully.

Slide the horizontal tube labeled A through the front and rear Base Assemblies of the first frame. While doing so, slide on the correct number of connector assemblies for the diagonal truss tubes and lateral bracing as detailed in your shop drawings. Depending on the frame configuration, the assemblies may be either A13 Assemblies, A28 Assemblies, or a combination of both (see Figure 10). Do not put any Tek Screws in the tubing or assemblies at this time.

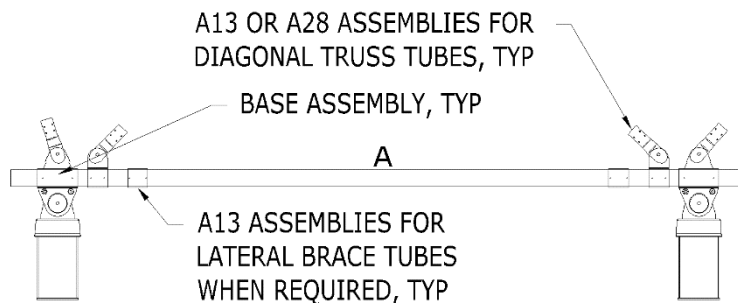


FIGURE 8

Once the horizontal tube is properly positioned, install the Thread-Cutting Screws (Part# S44) in the aligned holes of the RotoLock feature of the Base Assembly. Alternate sides per screw as shown in Section AA of Figure 11 so that approximately 1/2 of the screws are installed from each direction.

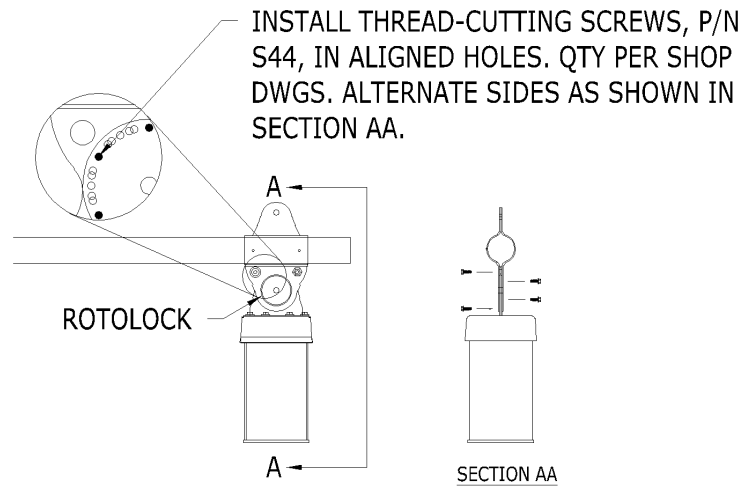


FIGURE 9

**Important Note: The quantity of S44 Thread-Cutting Screws is critical to the strength of the RoofScreen Frame and its ability to resist wind loads. Please refer to shop drawings for exact quantity required.**

To finish this step, tighten the Center Bolt in the RotoLock feature and install the Tek Screws in the Base Assembly fittings as shown in Figure 12. The Center Bolts only need to be reasonably tightened and do not need to be torqued to any specific setting. Also, please note that not every hole in the Base Assemblies necessarily requires a screw. Refer to the shop drawings for exact quantity and placement.

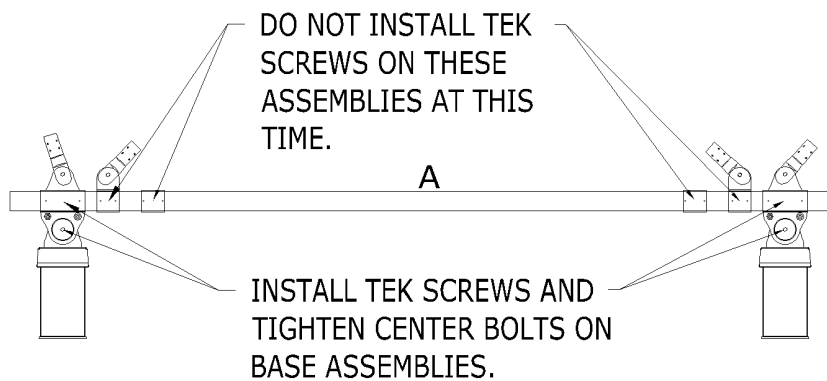


FIGURE 10

Repeat the above instructions for the remaining frames until all the horizontal tubes are installed and secured. Do not fasten the other assemblies on the horizontal tube at this time.

**Important:** Be sure to sweep or vacuum metal shavings from the top of the Base Assemblies after drilling Tek Screws to prevent rust from forming on the shavings. The Base Assemblies are stainless steel so no harm will come to them from rusted shavings. However, it is not aesthetically pleasing and the end customer may think the parts are rusting.

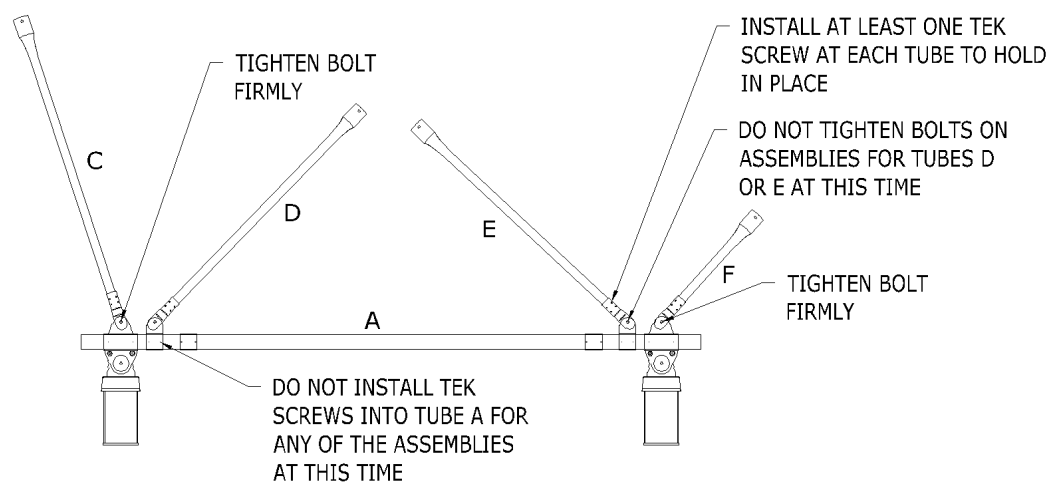
**STEP 8: BUILD FIRST FRAME**

The first frame to build should be the tallest of the array, which would be where the roof is at its lowest point, even if that frame is not at the end of an array (review Step 5 for information on locating the tallest frame). If the roof is perfectly flat, or the entire array is on a level plane, you may start with any frame.

The reason to start with the tallest frame is that the tubing is pre-cut to those dimensions. When the frame is assembled per the instructions below, this frame becomes the reference height for the remaining frames, which may be shorter due to roof slope.

**Important:** Always put the crimped ends of any frame tube at the uphill side to prevent the tubes from filling with rainwater, which could lead to premature corrosion.

Locate tubes labeled C through F and connect to their corresponding assemblies on the horizontal tube as illustrated in Figure 13. Install at least one Tek Screw in the End Connector of each assembly to hold the tubes in place. Firmly tighten the bolts in the assemblies for tubes C and F. This will give them enough rigidity to assist in the assembly of the upper tube which will be installed in the next step. Leave all the other assemblies loose, and do not install any Tek Screws into tube A for any of the assemblies at this time.



**FIGURE 11**

Next, find the tube labeled B. Slip all the A14 Assemblies on the tube. Be sure to include the assemblies for the lateral bracing as required. Using the S10 self-drilling Tek Screws, fasten only the two A14's on the ends of the tube and leave the rest loose. Refer to the shop drawings for dimensions showing the distance in from each end of the tube. See Figure 14.

INCLUDE ALL REQUIRED A14 ASSEMBLIES PER SHOP DRAWINGS FOR TRUSS TUBES AND LATERAL BRACES

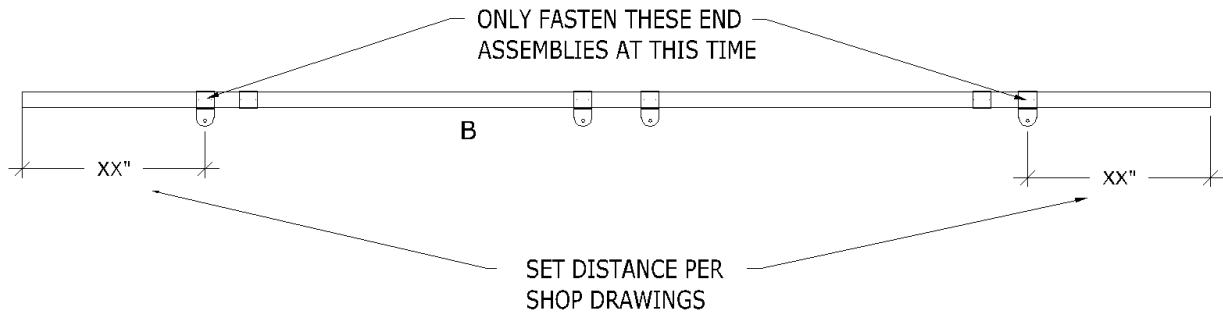


FIGURE 12

With two people, lift tube B into place as shown in Figure 15, connecting tubes C and F to the assemblies that were fastened near the ends of tube B in the previous step. While one person holds the frame from falling over, the second person can connect tube D to its corresponding assembly, leaving it loose for now so the slope of the tube can be adjusted.

Using the inclinometer set on the top of tube B, adjust the frame to the correct tilt angle shown on the shop drawings. Once the correct angle is found, fasten the A14 Assembly at the top of tube D to tube B with S10 Tek Screws to lock the frame at the angle. The position of the A14 assembly for tube D, and subsequent tubes, should follow dimensions shown on the shop drawings.

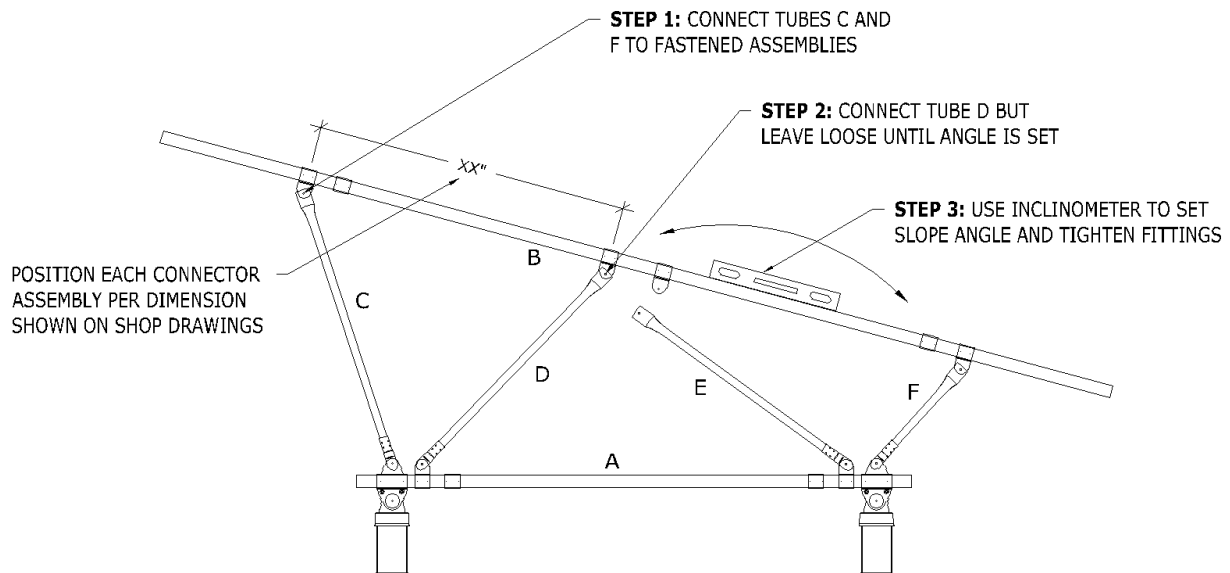


FIGURE 13

Finish by connecting tube E, installing all the Tek Screws, and tightening the bolts on all the connectors in the frame.

**Important:** The frames will be very flexible side-to-side until the Lateral Braces and Hat Sections are installed. If the frames are short, they should stand on their own during assembly. However, if they are very tall, the weight of the frame may cause them to tip sideways, potentially bending the connector fittings. If this is the case, it is recommended to use rope or twine to temporarily tie the frames together. See Figure 16.

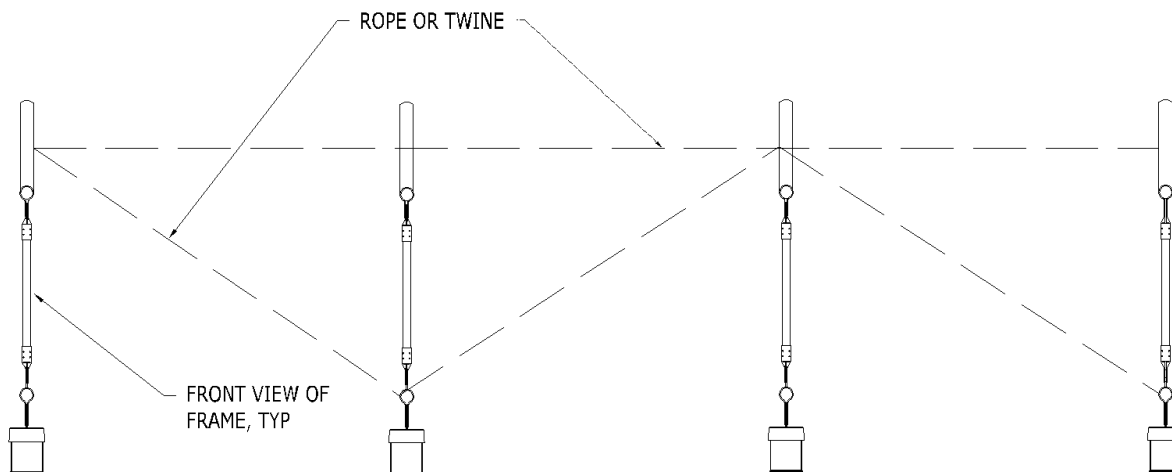


FIGURE 14

### STEP 9: BUILD REMAINING FRAMES

If the roof deck is perfectly flat, or the entire array is on the same plane, you can simply follow the procedure described in Step 8 to build the remaining frames. However, if the roof slopes and has undulations, you must use the following procedures to ensure the array is level.

Since the first frame built in Step 8 is the tallest frame (from now on referred to as *Reference Frame*), it will be used as the height reference for the remaining frames. To ensure the array is level and square, tube B on the subsequent frames must be at the same elevation and tilt angle as the reference frame. It must also have the same amount of cantilever from the front and rear Base Supports. Since the roof deck is at different heights, tubes C through F will need to be trimmed accordingly during frame assembly.

Wood 2x4's are useful for properly positioning tube B on subsequent frames. To begin, set the 2x4's on the Base Supports of the reference frame as shown in Figure 17. Use a level to ensure the 2x4's are plumb. Measure the distance of the cantilever from the end of tube B to the 2x4 at both ends of the tube.

Prepare tube B for subsequent frames by following the procedure in Step 8 and Figure 14. As each one is prepared, also mark the tube for the cantilever distance measured from the reference frame.



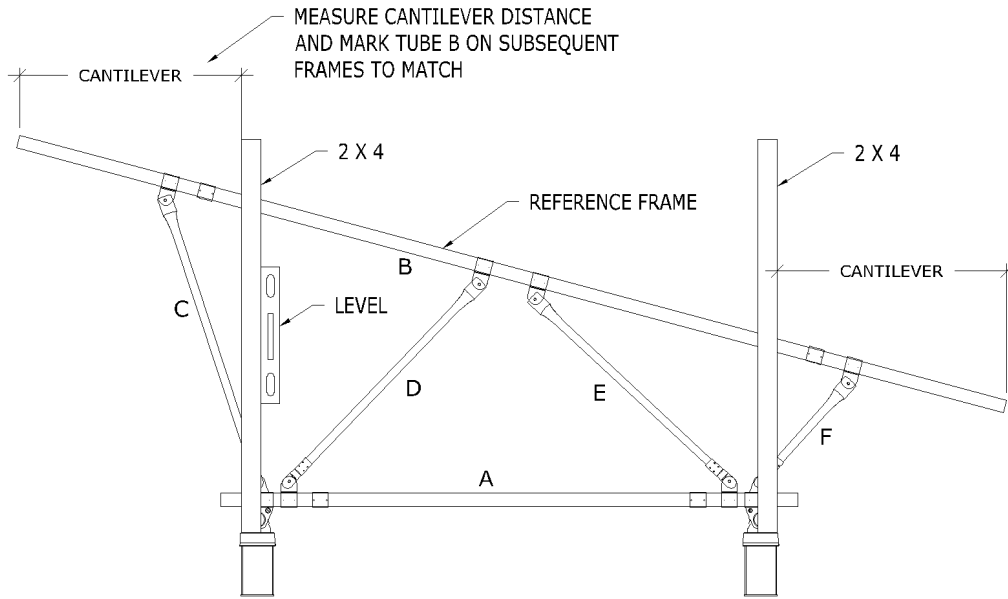


FIGURE 15

The next frame to build should be at the array end farthest from the reference frame. Set the 2x4's on the Base Supports and clamp them in place using large Vise Grip clamps. Use a level to ensure the 2x4's are plumb. Lift tube B into position and clamp it to the 2x4's to hold it in place. See Figure 18.

To properly position tube B, you must do the following:

- Set elevation at the high end of the tube to match the reference frame. Use a laser level or string line to accomplish this.
- Set the tilt angle to match the reference frame using the inclinometer.
- Align the cantilever marks with the edges of the 2x4's.

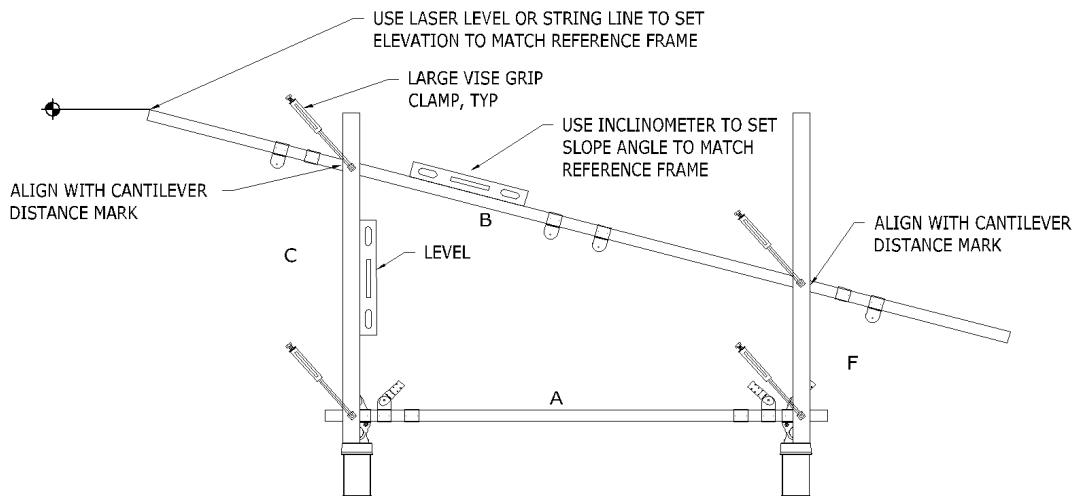


FIGURE 16

Once tube B is temporarily held in position with the 2x4's and clamps, the remaining tubes can be measured, cut and installed. Starting with tube C, hold the tube into position, allowing the lower end of the tube to extend past the assembly at the bottom. Once the tube is aligned with the End Connector on the lower assembly, mark the tube to the correct length to fit all the way inside the End Connector. Using a reciprocating saw or skill saw with metal cutting blade, trim the length of tube C to the mark. Insert the tube into the lower assembly, then rotate it up to align with the bolt hole in the upper assembly. Complete by installing 4 Tek Screws in each fitting and tightening the bolts. See Figure 19.

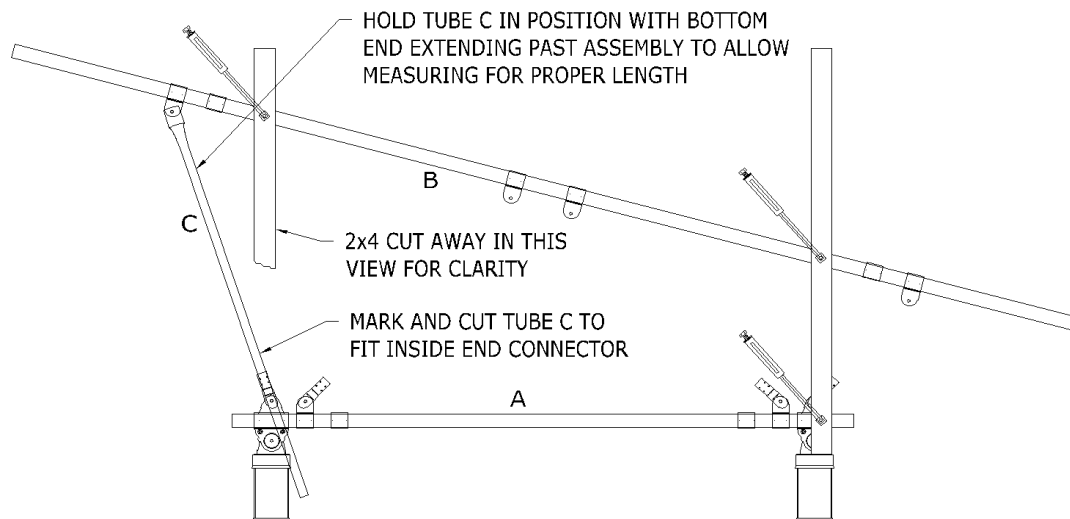


FIGURE 17

Repeat this process for tubes D through F to complete the frame. Use the same procedure as described above to complete all frames in the array, using string lines or a laser level as necessary to keep the array level. Make sure to position all A14 assemblies on the B tubes per dimensions shown on the shop drawings.

#### STEP 10: INSTALL LATERAL BRACES

If all lateral braces for the project are identical, they will be labeled LB. If there are various lengths or sizes of braces, they will be marked with unique numbers that correspond to labels in the shop drawings showing where each brace is to be installed.

**Important:** Always put the crimped ends of any tube at the uphill side to prevent the tubes from filling with rainwater, which could lead to premature corrosion.

Lateral braces must be measured and cut to fit in locations as detailed on the shop drawings. The procedure for doing this is very similar to the way the tubes were measured and cut for the frame in the previous step.

For each brace, hold the tube in position allowing the lower end of the tube to extend past the assembly at the bottom. Once the tube is aligned with the End Connector on the lower assembly, mark the tube to the correct length to fit all the way inside the End Connector. Using a reciprocating saw or skill saw with metal cutting blade, trim the tube length to the mark. Insert the tube into the lower assembly, then rotate it up to align with the bolt hole in the upper assembly. Complete by installing 4 Tek Screws in each fitting and tightening the bolts.

### STEP 11: INSTALL ALL TEK SCREWS AND TIGHTEN ALL BOLTS

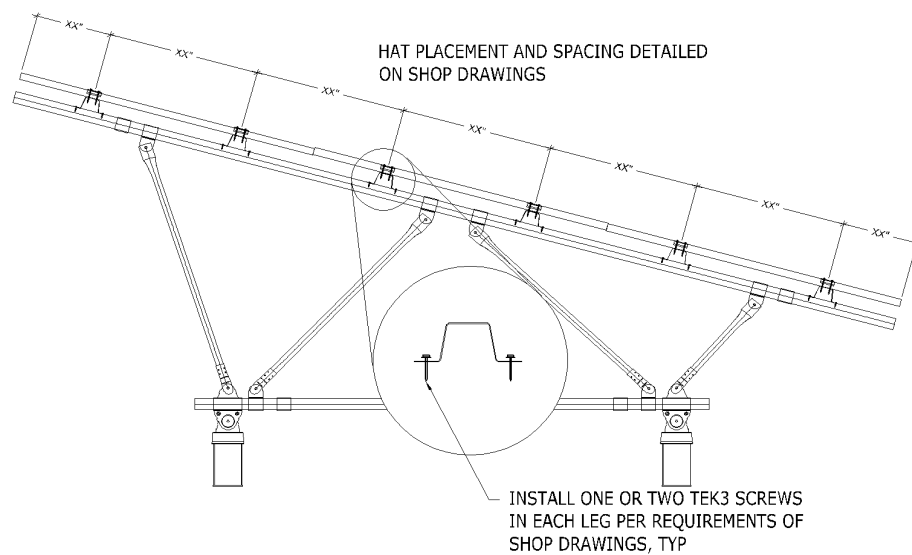
With all the frames and lateral braces installed, check each frame to ensure all the Tek Screws are installed and bolts are tightened. Typically, there are 4 Tek Screws per fitting, but this may not always be the case so check the specifications on the shop drawings. While doing this, make sure all metal shavings from drilling Tek Screws are removed from the framing and fittings to prevent rust from forming.

## HAT SECTION

Hat Sections, or Hats, are the typical members used to span across the horizontal tubes, providing an attachment rail for the modules.

### STEP 12: INSTALL HAT SECTIONS

Two rows of Hats are installed per solar module. Placement and spacing between Hats will be detailed on the shop drawings. Hats are attached to the frames with Tek3 Self-Drilling Screws, Part Number S10, through the legs of the Hats into the tube below. See Figure 20.



**FIGURE 18**

Place the first length of Hat Section on the frames, beginning at the top row and first frame in the array. Position the Hat with the correct distance down from the end of the tube and allow it to extend past the first frame per the distance shown on the shop drawings. Use large Vise Grip clamps to hold the Hat in the correct position while installing the Tek Screws. During this process, make sure the frames are plumb as illustrated in Figure 21.

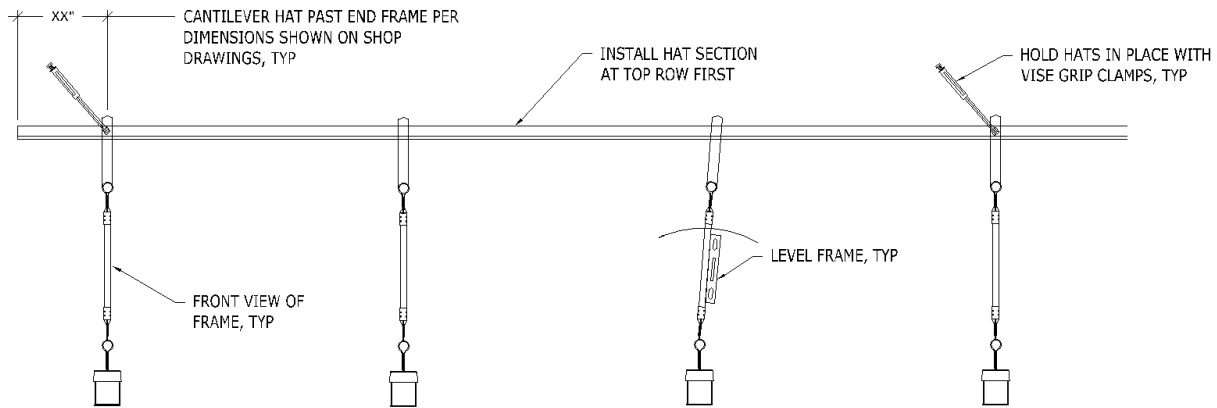


FIGURE 19

Continue installing the rows of Hat, completing the top row first, then the lower rows. Hat Sections are supplied in 20' lengths. To splice Hats end-to-end, refer to the detail in the shop drawings. The detail will show how many screws to use in the splice, similar to Figure 22. Splices may be installed at any point along the array and are not required to be located over a frame tube unless specified to do so in the shop drawings. Use Vise Grip clamps to hold the splice tight to the Hat. Position the splice with ½ slipped into the installed Hat and ½ extending out to receive the next length of Hat. Install the S10 screws in the side legs of the Hat as shown in Figure 22. Do not put screws in the top surface of the Hat as the screw heads may interfere with the PV modules later.

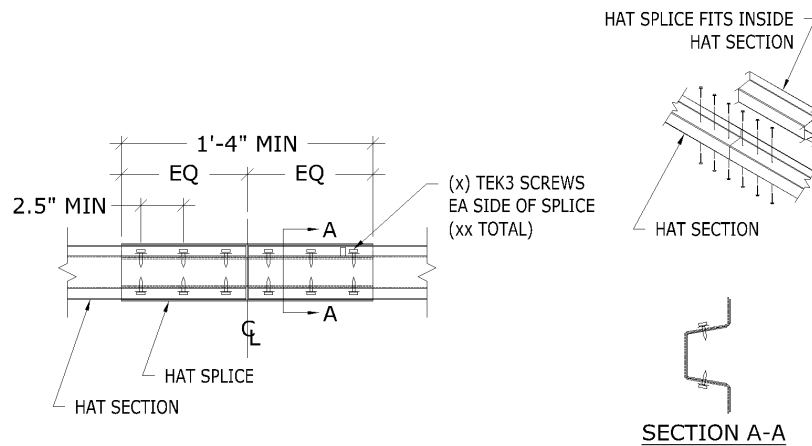
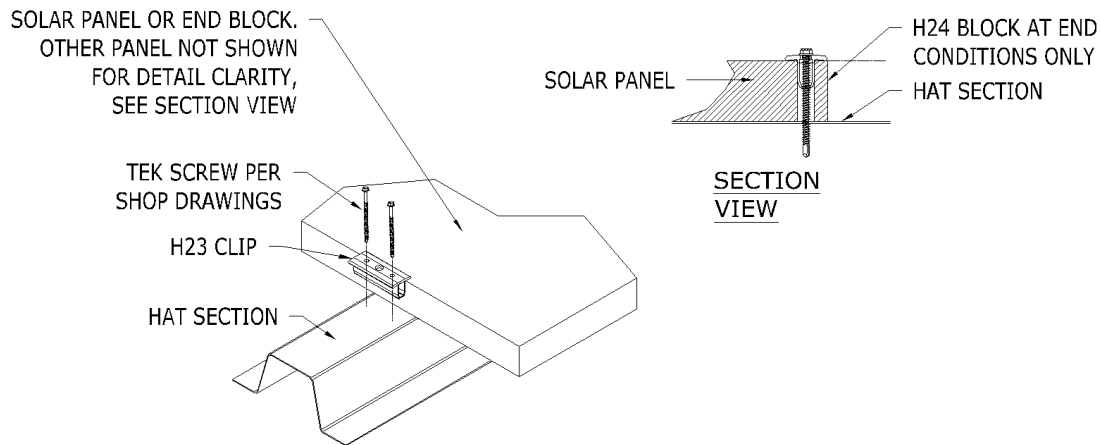


FIGURE 20

**STEP 13: INSTALL MODULE CLIPS**

Position the first module on the Hat Sections. Secure the outside edge of the module with a Clip (H23) and End Block (H24). Bring the next module into position, placing clips between modules and directly over the Hat Sections. Hold the module tightly against the clips and install two Self Drilling Tek Screws through holes in the clip and into the Hat Sections below. See Figure 23. Continue this process for the remaining modules.

If WEEB grounding hardware is being used, a bolt, nut and washer will be used in the center hole of the clip instead of the Tek Screws in the two outer holes. Please see the shop drawings and WEEB Silverback Installation Manual for more information.



**FIGURE 21**

**Important:** Improper grounding or inadequate grounding is not only dangerous, but it can lead to “stray current” corrosion and degradation of the racking components. This could result in a voided warranty as well as structural rack failure.

## FINAL QUALITY CHECK

Perform a final quality control inspection. Check that all the Tek Screws have been installed in the frames. Make sure that all the assembly bolts are tight. Vacuum or sweep all metal shavings left over from the installation of Tek Screws to prevent rust from forming. Pick up any screws and other miscellaneous items that may have been dropped to prevent damaging the roof membrane should someone step on them.

Ensure system is properly grounded. The Silverback racking system is approved for use with WEEB grounding washers between the PV modules and Hat Sections. However, grounding is the responsibility of the installer. Proper grounding, meeting all requirements by the Building Code and Electrical Code is required.