Solar Mounts, LLC.
Post Driven Ground Mount
Installation Manual

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Safety Information

- General Safety Guidelines



  - Only trained personnel should perform installations.
  - Always follow OSHA guidelines for fall protection and workplace safety.
  - Wear appropriate PPE, including hard hats, safety glasses, gloves, steel-toed boots, and harnesses where applicable

- Equipment Safety



  - Inspect tools and equipment before use.
  - Use caution when operating heavy machinery like skid steers and post drivers.
  - Use licensed operators to ensure skilled operation of equipment



Hazard Warnings

  - Be mindful of overhead power lines when lifting materials.
  - Secure all materials properly to prevent tipping or falling.



Tools & Equipment Required



- Hand Tools
  - Impact Driver
  - Torque Wrench
  - Solar Mounts V-Clamp, or Needle Nose Pliers
  - 15/16” Socket for 5/8” Bolt
  - 1/2” Socket for 5/16” Bolt
  - 3/4" Socket for 1/2" Bolt
  - 15/16” Combination Wrench
  - 3/4" Combination Wrench
  - 1/2" Combination Wrench
  - Come-along winch racket tool
  - Concrete Finishing Tools
- Equipment
  - Skid Steer
  - Vibro
  - Post Jig
  - Commercial Concrete Forms

Pre-Installation Guidance

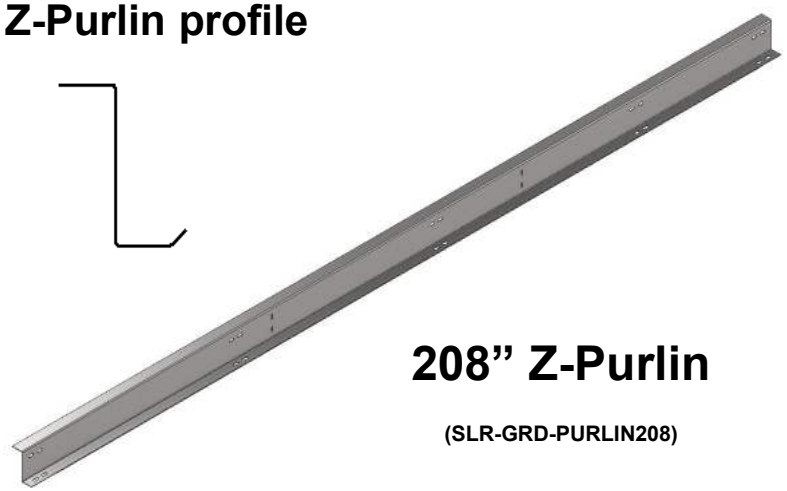
- Working with Miss Dig (Public Locate)
  - Contractors must call (811) Miss Dig before they dig . This is typically a free service provided by the local utility company. More detailed surveys of underground utility lines, phone lines, fiber optics, water lines, etc. can be conducted using GPR devices.

811 Know what's below. Call before you dig.

- GPR and LiDAR Data (Private Locate)
  - Underground detail can be gained by deploying ground penetrating radar (GPR) devices. GPR devices (e.g., US Radar, GSSI) can provide detailed information about shallow and deep obstructions, as well as accurate tracing of utility lines, water lines, fiber optics, telephone lines and more. GPR can provide up to 1 cm of accuracy although 5 cm is common with the addition of GPS (GNSS).
  - LiDAR devices are getting smaller and more accurate. These devices can be carried by drones and provide contractors with very accurate elevations and identification of above-ground contours, and give you detailed locating capabilities that can be transferred to construction drawings for the site.

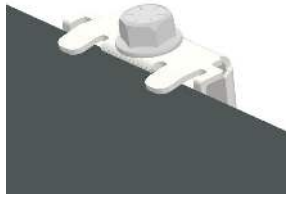
POST DRIVEN GROUND MOUNT: MAIN COMPONENTS

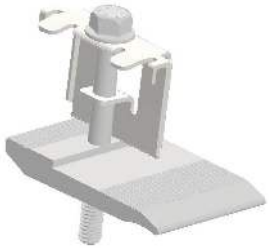
Z-Purlin profile



208” Z-Purlin

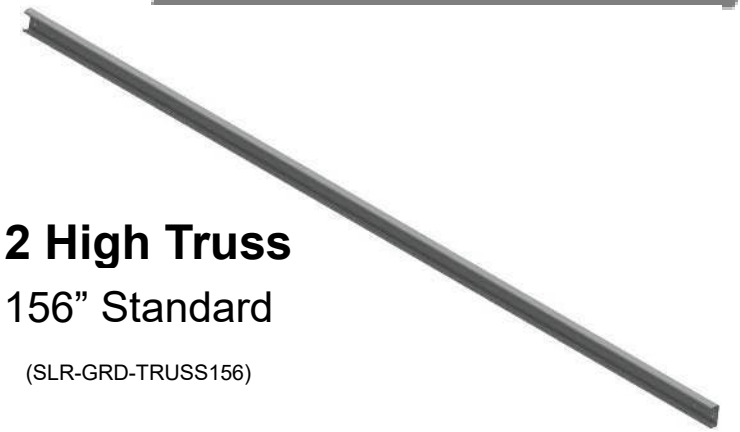
(SLR-GRD-PURLIN208)





End Clamp

(SLR-CLMP-HW-AKS-END)



2 High Truss

156” Standard

(SLR-GRD-TRUSS156)



Mid-Clamp

(SLR-CLMP-HW-MID)





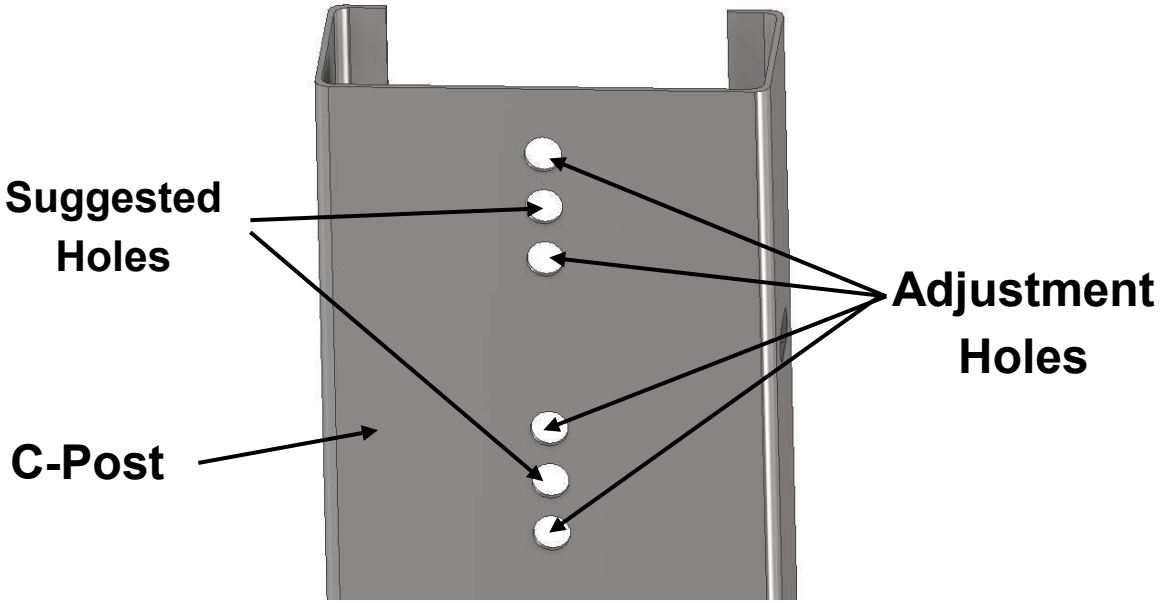
1 High Truss

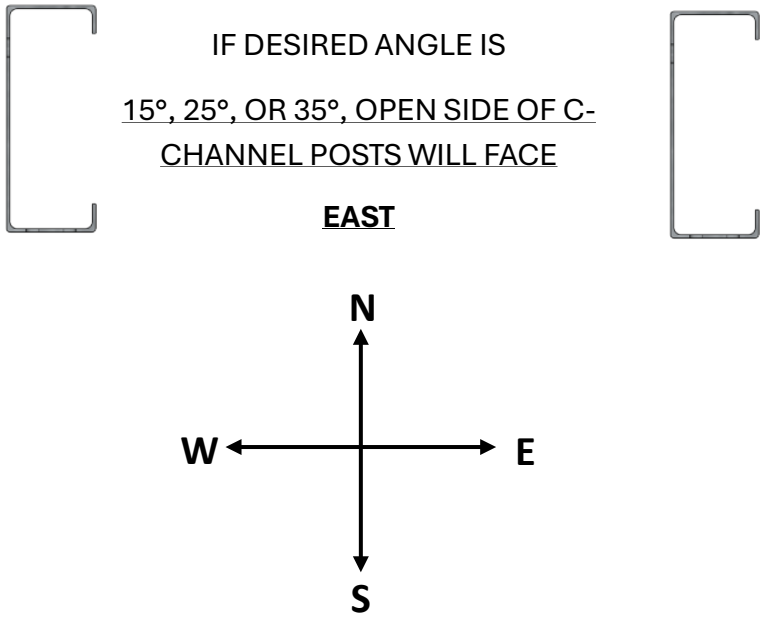
66” Standard

(SLR-GRD-TRUSS66)

POST ORIENTATION AND ANGLES

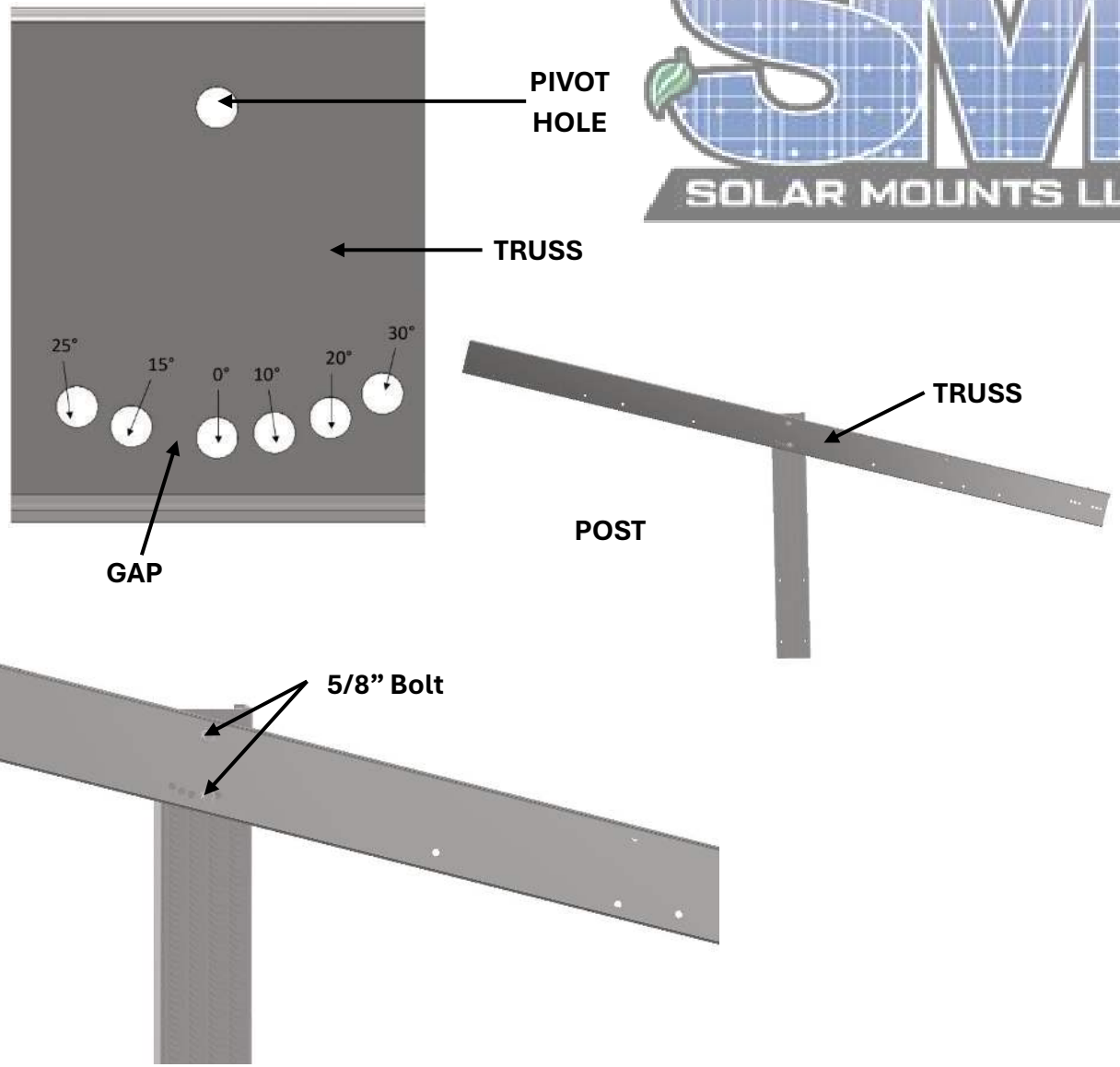
- The elevation of the truss can be adjusted using corresponding holes for correcting elevation and depth issues in Post-Driven post
- Adjustments are made in 1” increments
- Drive Post to depth per SMLLC Drawings





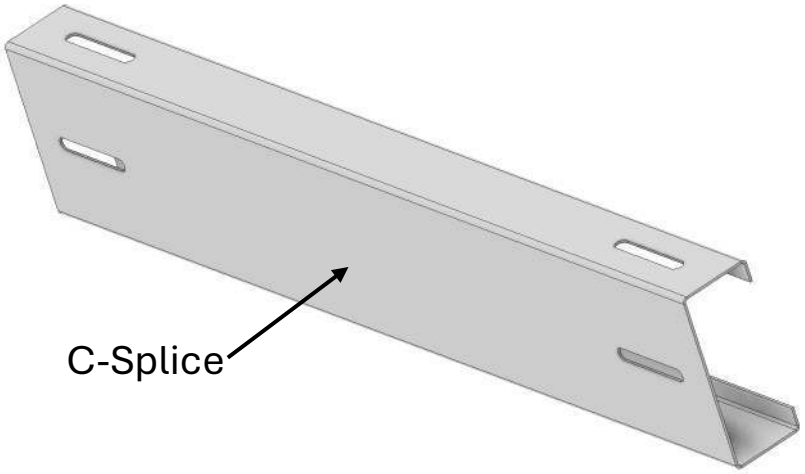
Truss Installation

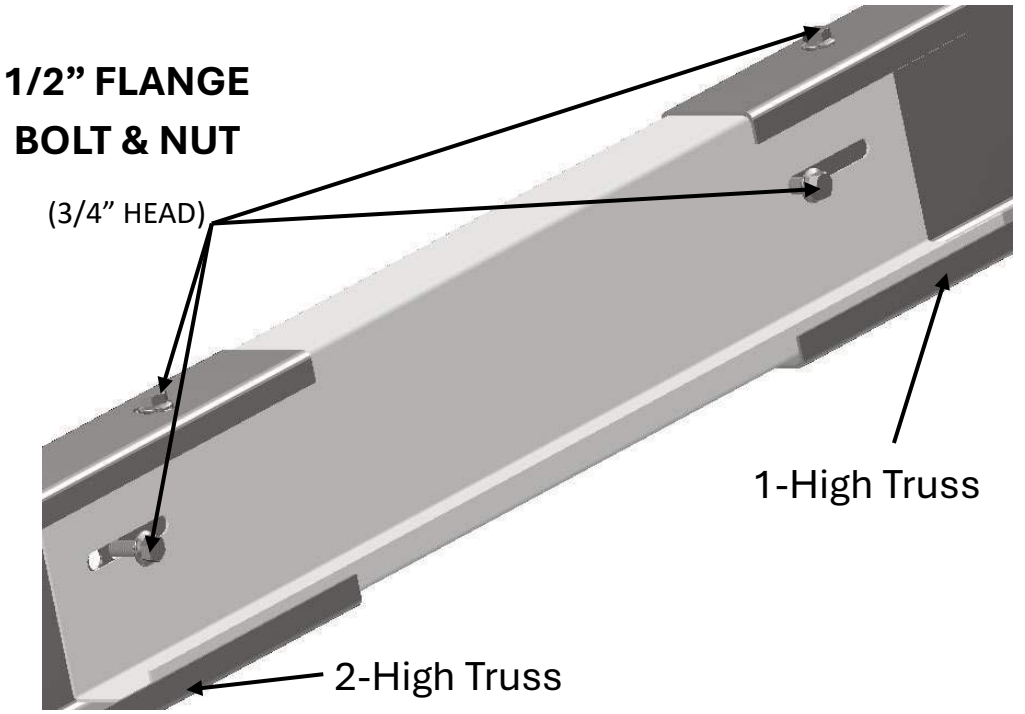
- Fasten 5/8” bolt through pivot hole in truss and into post driven or C-Post (hand tighten the nut)
- Select the hole according to project desired angle (reference SMLLC drawings)
- Fasten 5/8” bolt through truss at desired angle location
  - On 3-High Ground Mounts, Install C-Channel Splice before tightening/torquing in the bolts. See next page.
- Tighten to 140-160 ft. lbs.



C-Channel Connecting Splice

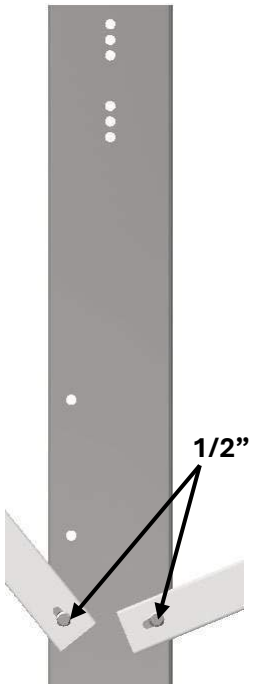
- On 3-High ground Mounts, connect the 1-High truss to the 2-High truss by using connecting splice (see image below)
- Attach splice to each truss using (2) ½” Bolts and Nuts
- Torque Bolts to 70 - 80 ft-lbs



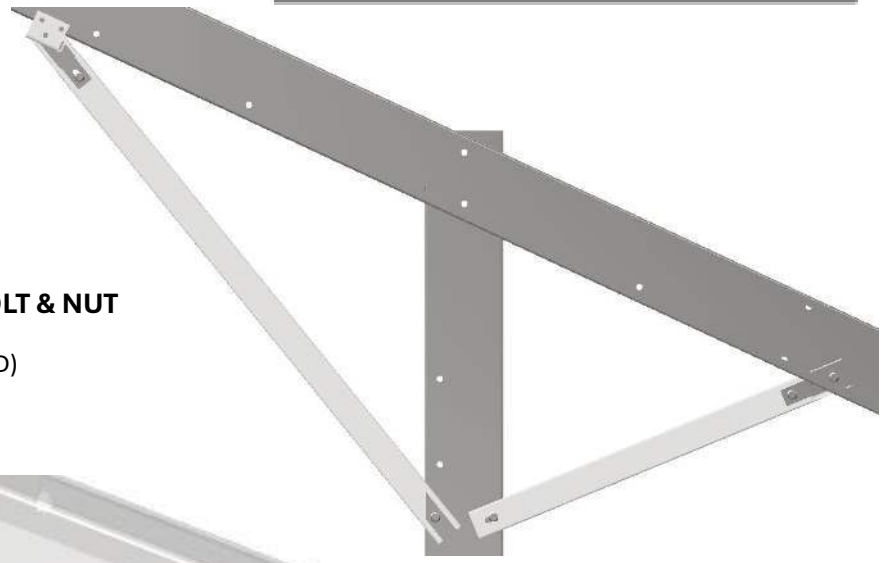


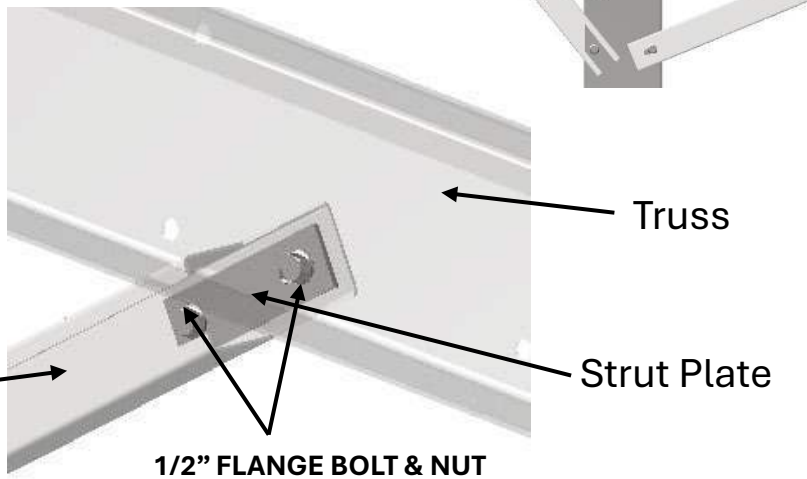
Struts Installation

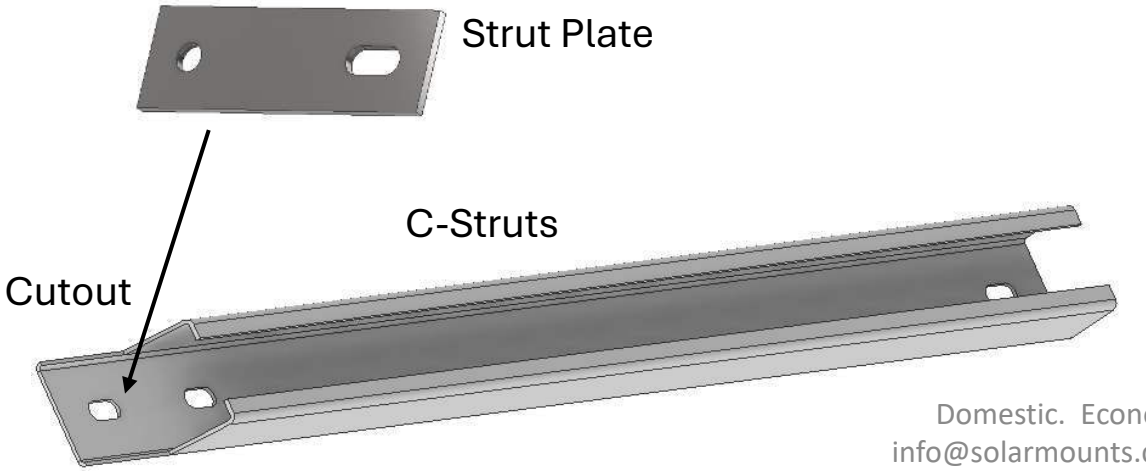
- Struts are supplied to brace the trusses to the post
- On the post, the struts get bolted to the holes specified in detail A
- On the cutout portion of the strut, the strut plate gets bolted per detail B
- Hand tighten using ½”x1.25” Bolts



Detail A

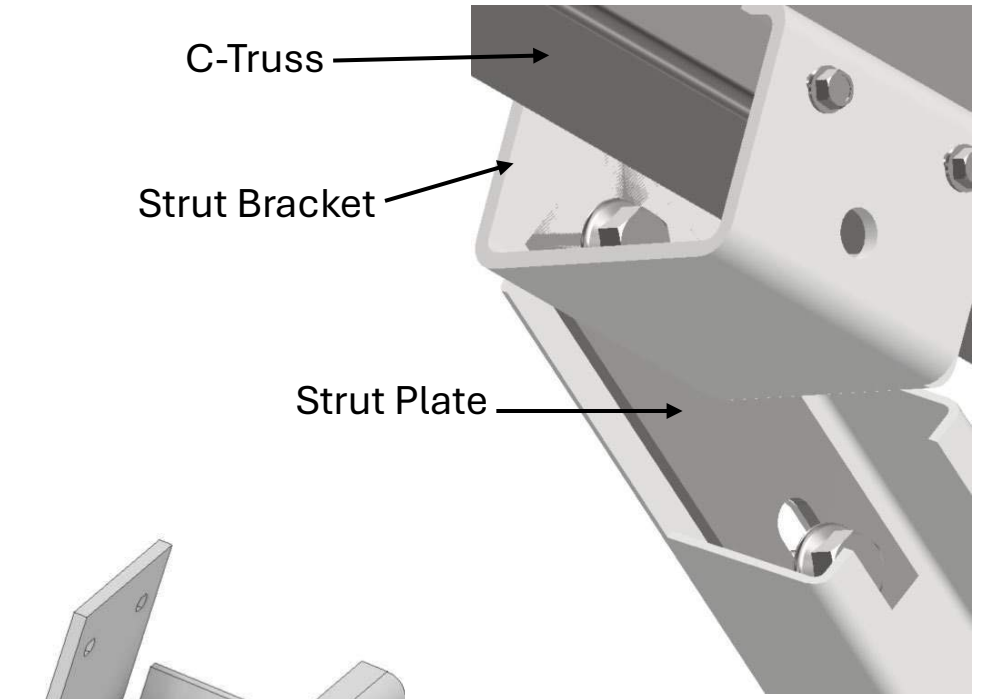


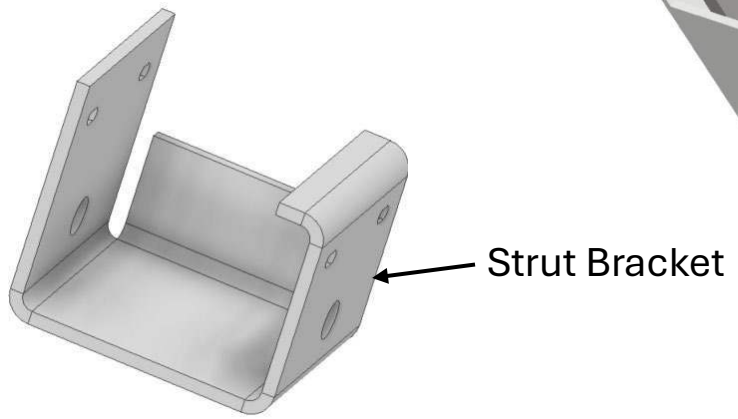


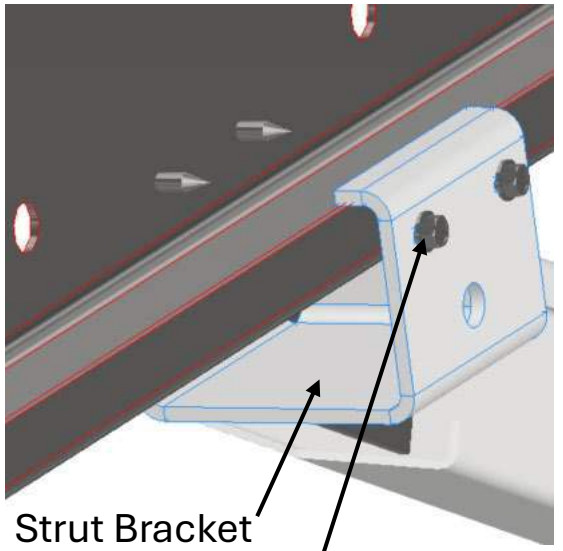


Strut Bracket Installation

- The Strut Bracket is used to connect the back strut to the Truss
- Connect the strut bracket to the truss via (4) self tapping screws
  - (2) on both sides of Strut Bracket
- Connect the Strut to the Strut Bracket via ½” bolt (shares bolt with the strut plate)

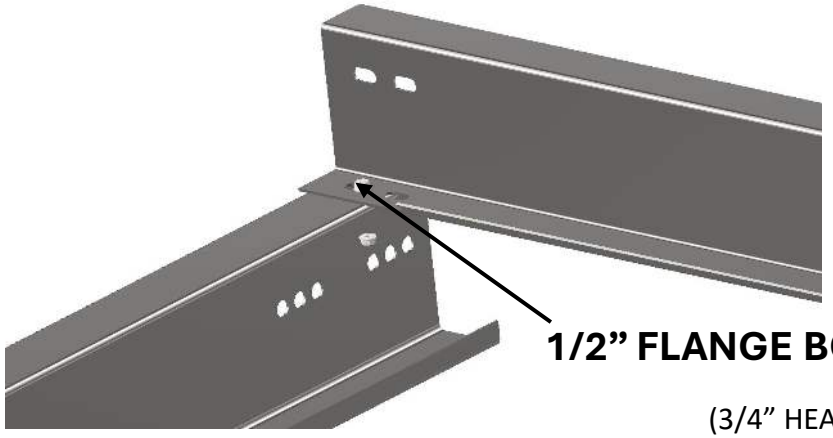






Purlin Installation

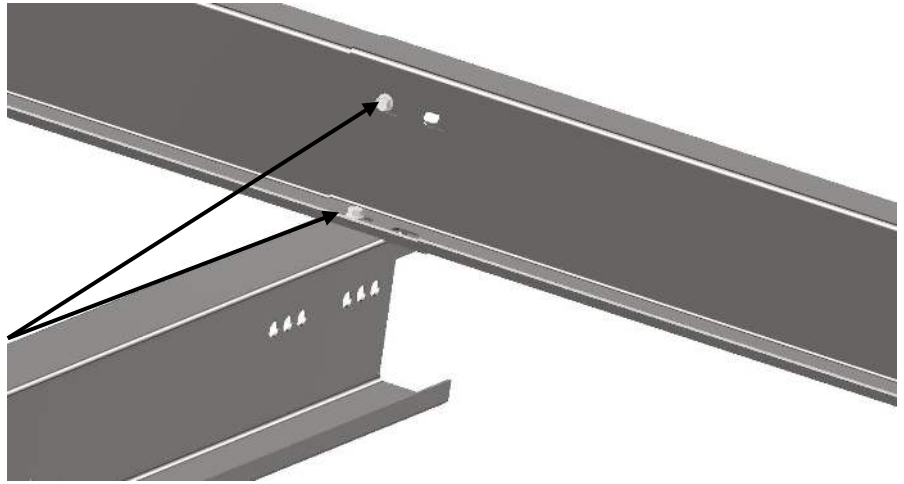
- Attach Z-Purlins to truss as pictured using 1/2” flanged bolt and flanged nut.
- Make sure all purlins are pointing North (Northern hemisphere installs)



1/2” FLANGE BOLT & NUT

(3/4” HEAD)

- Overlap Add-On section Z-Purlin, and use shared bolt hole locations
- Secure into place with (2) ½” bolt and nut
- Tighten hardware to 70-80 ft. lbs.

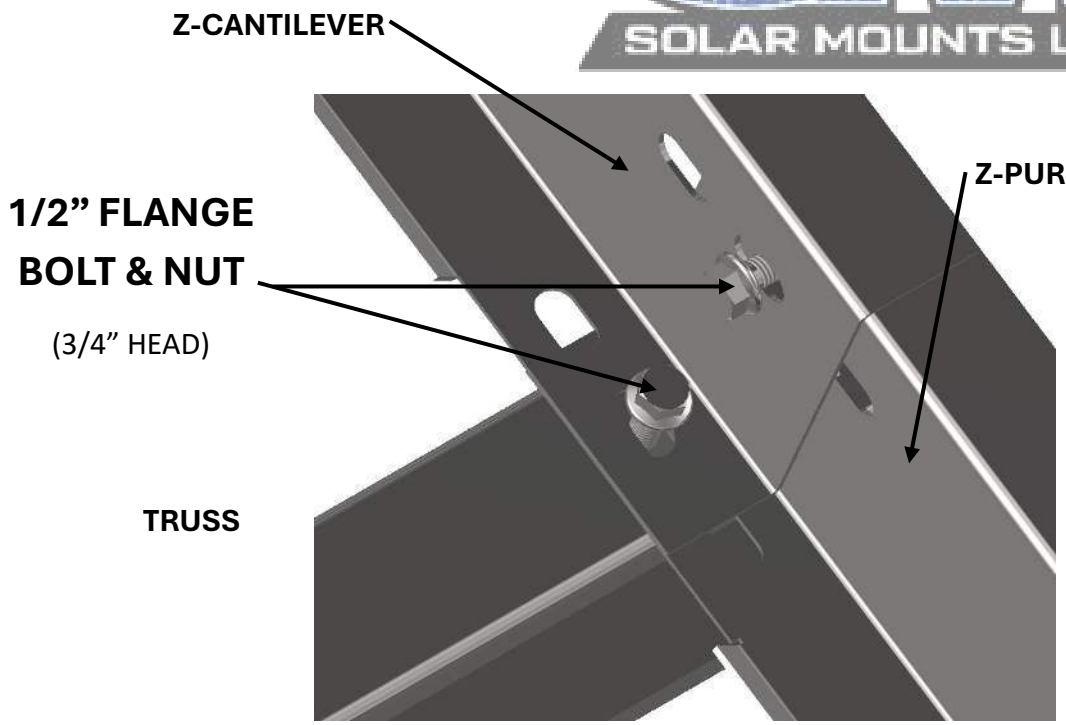


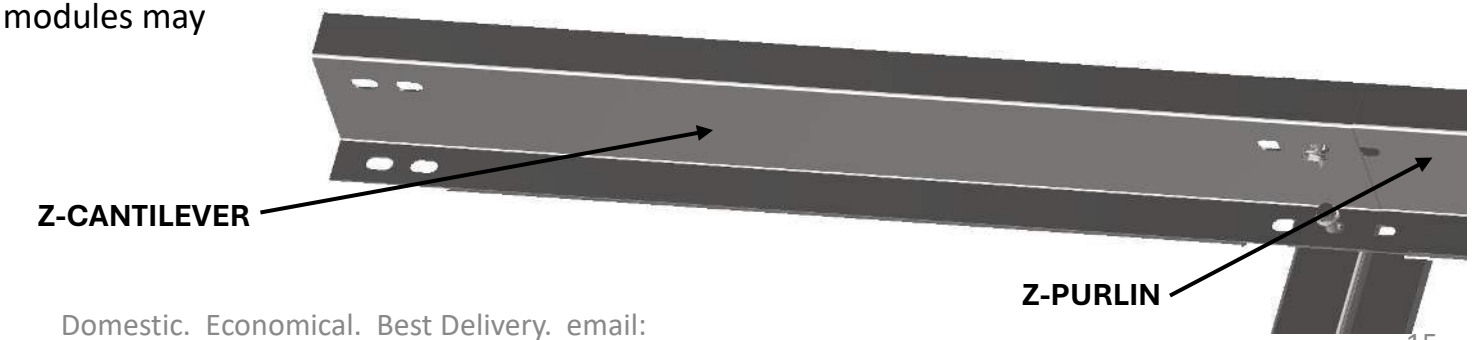
1/2” FLANGE BOLT & NUT

(3/4” HEAD)

Cantilever Installation

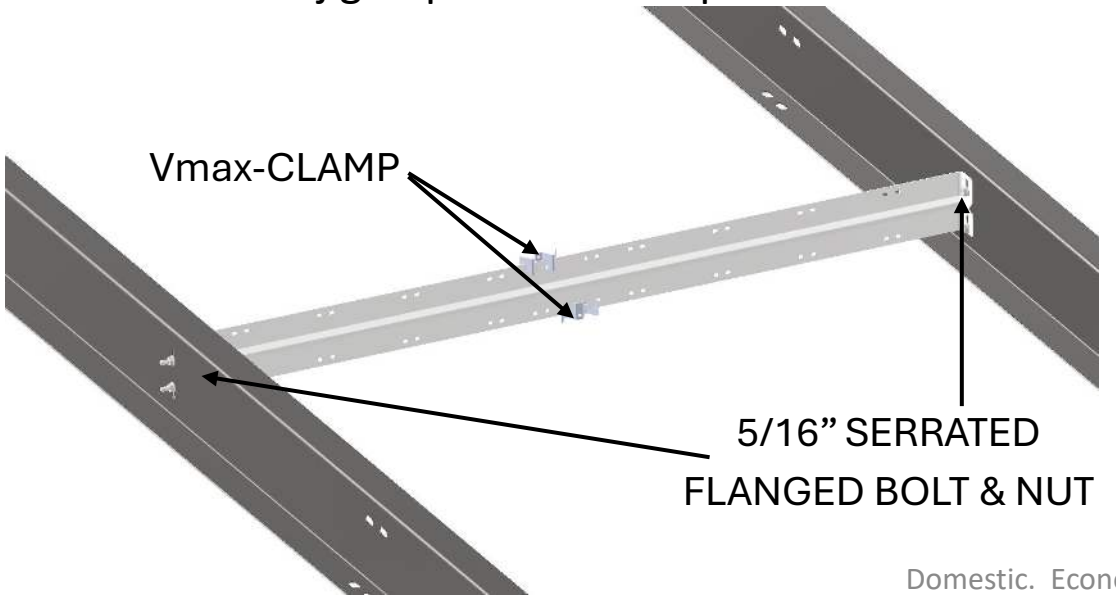
- Starting on the west side place cantilevers to specified length called out on SMLLC drawings
  - NOTE: Not all rows have cantilevers
- Fasten using (2) ½” Bolts and Nuts
- Torque to 70-80 ft-lbs
- Leave the east side of cantilevers off until all modules are placed onto the array
- Measure onsite the needed cantilever length on east side to ensure plenty of space for module
  - SMLLC drawings have a dimension specified, however change in grade and the installation of modules may change this dimension slightly

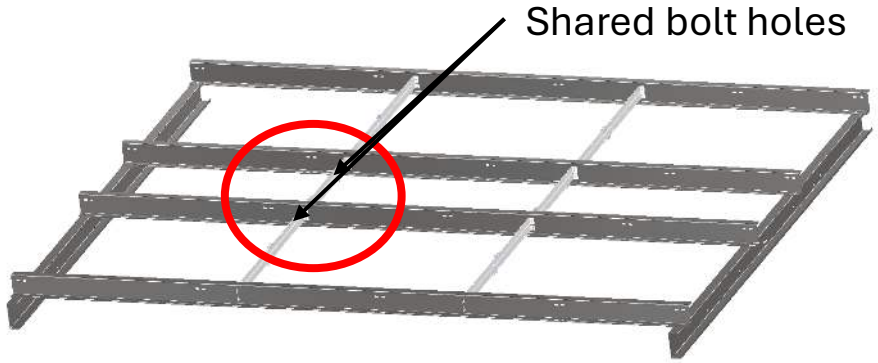




Purlin Stiffener Attachment

- See SMLLC drawings for appropriate spacing
- Compress V-Clamp with SMLLC Double V-Clamp Pliers or needle nose pliers and release in position
- Attach stiffener to purlins with 5/16” serrated flanged bolt & nut. Tighten to 17-20 ft. lbs.
- NOTE: Technicians can install in the field or use a jig to pre-assemble purlin stiffeners



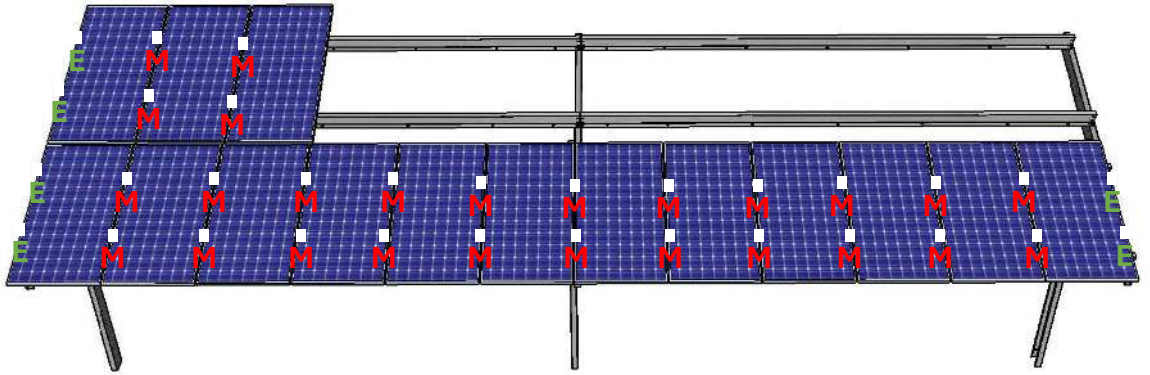


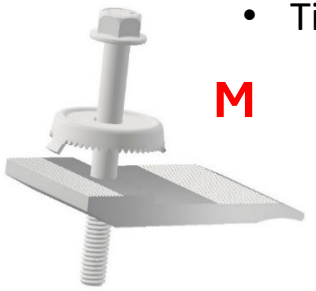
SECTION FINAL
ASSEMBLY

PV Module Attachment and Installation

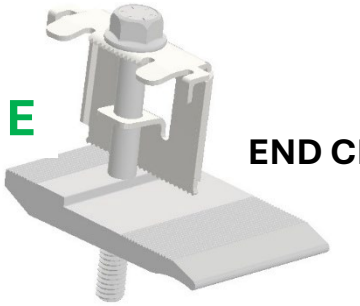


- Place first PV module (“panel”), 2” in on Z-Purlin/Z-Cant to give room for the bottom clamp to sit properly
- Secure PV module in place with end clamps.
  - Tighten PV Module End Clamp bolts to 8-10 ft. lbs.
  - **Use 2 clamps for each side of the PV module**
- Place second PV module on purlins in line with first panel.
- Secure the two PV modules together with the mid clamp as pictured.
  - Tighten to 8-10 ft. lbs.





MID-CLAMP ON DIAGRAM



END CLAMP ON DIAGRAM

ELECTRICAL GROUNDING OF THE Post-Driven GROUND MOUNT PV SUPPORT STRUCTURE

- Solar electric contractors must electrically ground the structure to a single premises ground. If more than one Ground Lug is attached to the structure, all these ground points and EGC's must be properly bonded together.
- Please see NEC Article 690.41, 690.47(C)(3), 250.52 and 250.53(A) for guidance
- Grounding of system is responsibility of Electricians

FINAL INSPECTION & MAINTENANCE

- Check all Post-Driven Ground Mount cement blocks for cracks, loose posts, soil displacement, etc. Ensure blocks are prepared for proper curing
- Any loose components or fasteners shall be re-tightened in accordance with these instructions
- Check all Post, Strut, Strut Plate and Purlin bolts and nuts for tightness.
- Check PV array to ensure all PV modules are clean and unbroken.
- Ensure all PV module mid-clamps and end clamps are tightened to specification.
- Periodically inspect the structure for signs of wear or loosening. If any components of the Post-Driven Ground Mount system show signs of damage that compromises safety, these components shall be replaced immediately.
- Check for animal or vegetative interaction or interference with the structure and/or PV modules.

Contact Information & Warranty

- For questions or support, contact:
  Solar Mounts LLC
  Website:
  https://solarmounts.com
  Phone: (844) 757-7225

- **Warranty**
- Mandatory to obtain the Solar Mounts LLC warranty, please fill out the SMLLC Commissioning Form for each project site and return to Solar Mounts, LLC.
- (NOTE: The SMLLC warranty starts at delivery of materials to customer site.)