

CrossRail Ground Mount System

ASSEMBLY INSTRUCTIONS



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Quality tested – several certifications

K2 Systems stands for secure connections, highest quality and precision. Our customers and business partners have known that for a long time. Independent institutes have tested, confirmed and certified our capabilities and components.

Please find our quality and product certificates under:
k2-systems.com/en-US/company/quality-management-and-certificates

Engineering strength is at our core



With sophisticated product innovations and a deep customer focus, K2 Systems is the engineering leader for all your mounting system needs. We are a market leader with more than 16 GW installed worldwide.

We offer proven product solutions and innovative designs. Wind tunnel testing along with advanced structural and electrical validation to facilitate permitting, design and installation. Our designs result in cost competitive racking systems with dedicated support that will position you to win more projects.

We partner with our customers and suppliers for the long-term. High quality materials and cutting edge designs provide a durable, yet functional system. Our product line is comprised of a few, coordinated components that lower the cost of materials, and simplify installation, saving you time and money. All backed by German engineering, a long track record of quality and a company that is here to stay.

Thank you for choosing K2 Systems for your Solar PV Project.

General Safety Information

Please note that our general mounting instructions must be followed at all times and can be viewed online at k2-systems.com/en-US/technical-information

- ▶ The equipment may only be installed and operated by qualified and adequately trained installers.
- ▶ Prior to installation, ensure that the product complies with on-site static loading requirements. For roof-mounted systems, the roof load-bearing capacity must always be checked.
- ▶ National and local building regulations and environmental requirements must be adhered to.
- ▶ Compliance with health and safety regulations, accident prevention guidelines and applicable standards are required.
 - Protective equipment such as safety helmet, boots and gloves must be worn.
 - Roofing works must be in accordance with roofing regulations utilizing fall protection safeguards when eaves height exceeds 3 m.
 - At least two people must be present for the duration of the installation work in order to provide rapid assistance in the event of an emergency.
- ▶ K2 mounting systems are continuously developed and improved and the installation process may thereby change at any time. Prior to installation consult our website at: www.k2-systems.com/en-US/technical-information for up-to-date instructions. We can send you the latest version on request.
- ▶ The assembly instructions of the module manufacturer must be adhered to.
- ▶ Equipotential bonding/grounding/earthing between individual parts is to be performed according to country specific standards, as well as national laws and regulations.
- ▶ At least one copy of the assembly instructions should be available on site throughout the duration of the installation.
- ▶ Failure to adhere to our general safety and assembly instructions and not using all system components, K2 is not liable for any resulting defects or damages. We do not accept liability for any damage resulting in the use of competitor's parts. Warranty is excluded in such cases.
- ▶ If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 25 years! We strongly recommend reviewing our terms of guarantee, which can be viewed at www.k2-systems.com/en-US/technical-information We will also send this information on request.
- ▶ Dismantling of the system is performed in reverse order to the assembly.
- ▶ K2 stainless steel components are available in different corrosion resistance classes. Each structure or component must be carefully checked for possible corrosion exposure.

The following guidelines apply



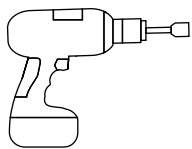
The CrossRail Ground Mount System can be installed as standard under the following conditions. Even if the system is capable of meeting higher demands through the integration of safety standards, please get in touch with your contact at K2 Systems if the specified values are exceeded.



Structural requirements

- ▶ Wind speed: 100-130 mph
- ▶ Snow load: 0-50 lbs
- ▶ Four rows in landscape

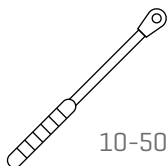
Tools Overview



13 mm deep socket



Hollaender set screw



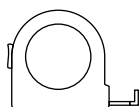
10-50 ft-lb
[6 - 35 Nm]



3/8" hex head wrench



Excavation equipment



≥ 10 ft

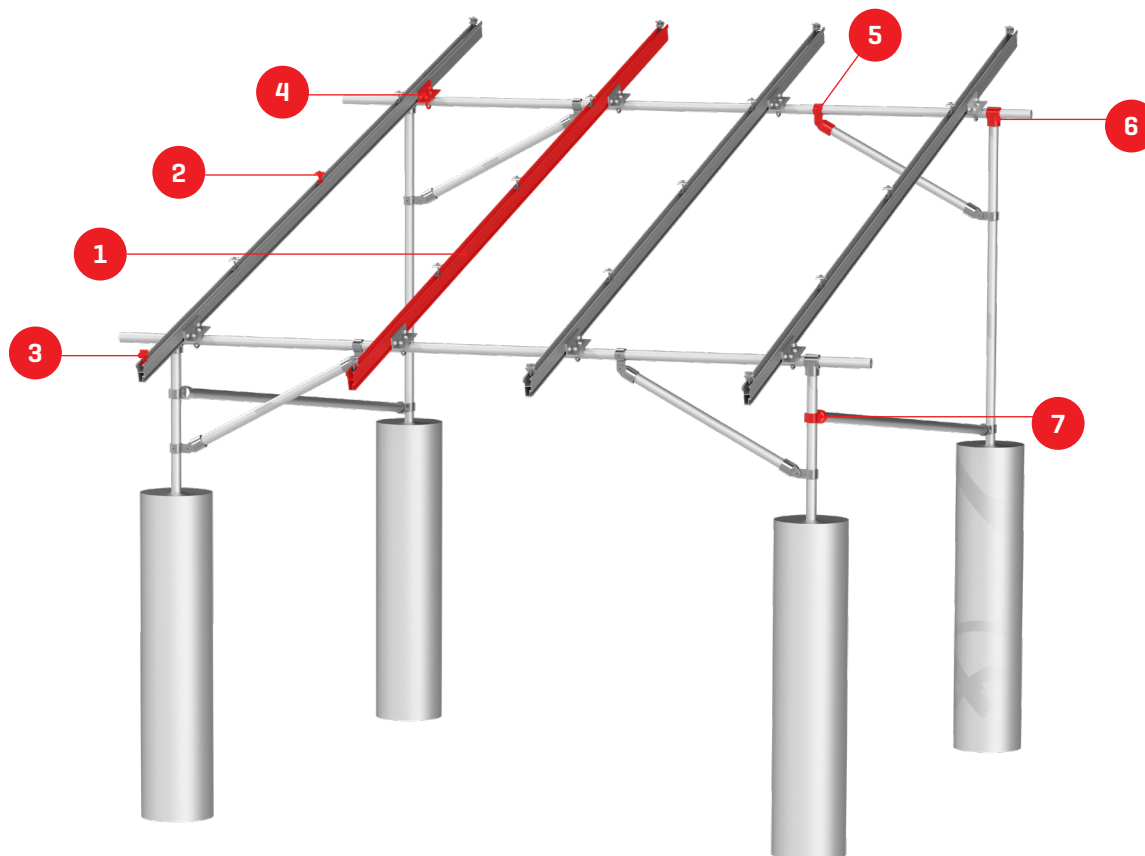
Torque Overview

► M10 T-Bolts: 25.8 ft-lb [35 Nm]

► M8 Hex Bolts: 10.3 ft-lb [14 Nm]

Tools and materials for the installation of third party items such as roof attachment products, roof covering and sealing products or items used for bonding and grounding are not listed here. Please refer to the instructions of those third party products.

Components



1 4000508



CrossRail 80

2 4000601-H/4000602-H



Mid Clamp, 13mm Hex
30 - 47 mm module frame height

3 4000429/4000430



End Clamp
30 - 50 mm module frame height

4 4000100/4000330



K2 Pipe L Bracket Kit
2" options

1.5" or

5 4000334



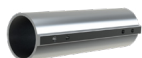
Aluminum Hollaender 17 Adj. Elbow

6 4000101/4000102



**Aluminum Hollaender 5EXT Extended Barrel Tee
OR Hollaender 5EX**

7 4000333



Hollaender No. 70 External Coupling

Optional Components & Accessories



Self-tapping screw w/ EPDM
4000672



Yeti Clamp (Hidden End Clamp)
4000050-H



End Cap for CR 80
4001221



TC Wire Clip
4000069



K2 Ground Lug
4000006-H



Heyco Sunrunner Clip
4000382

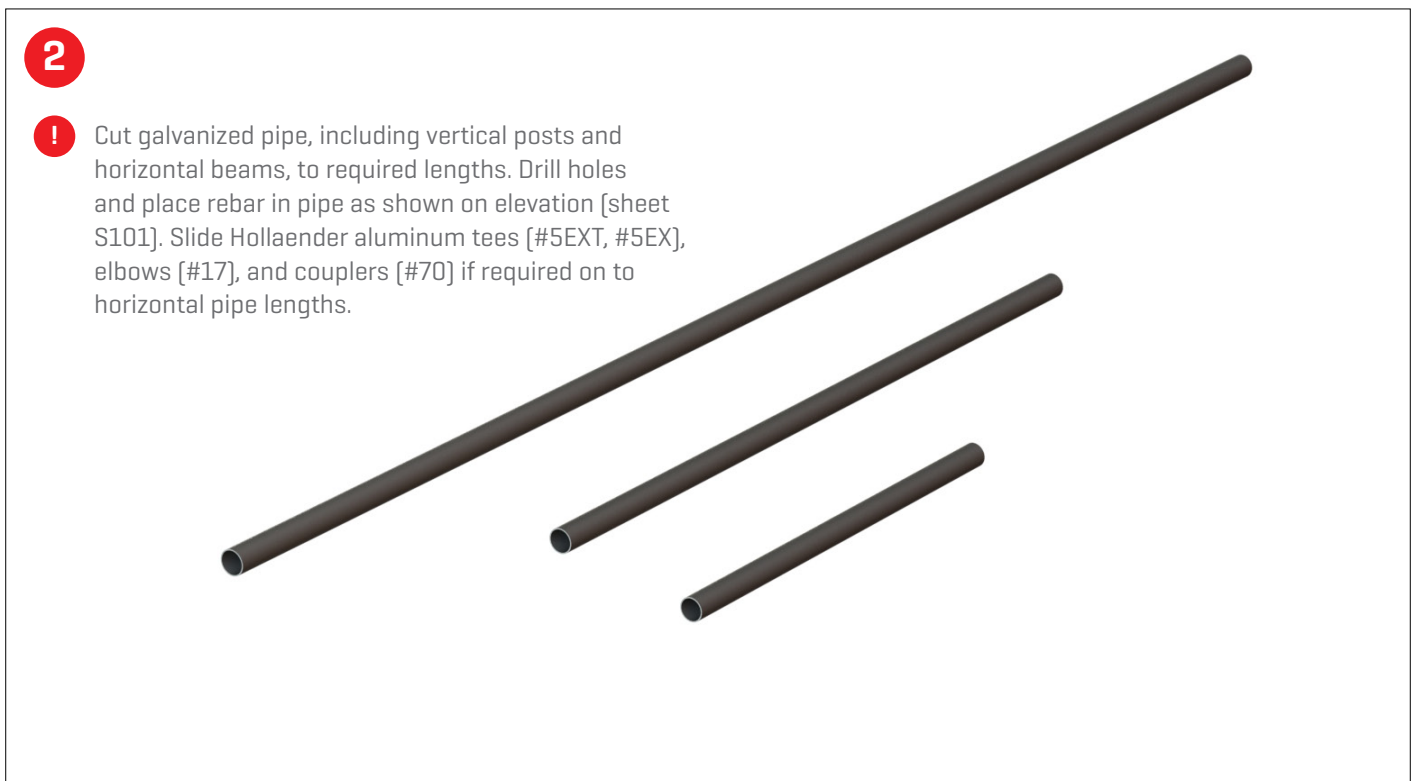
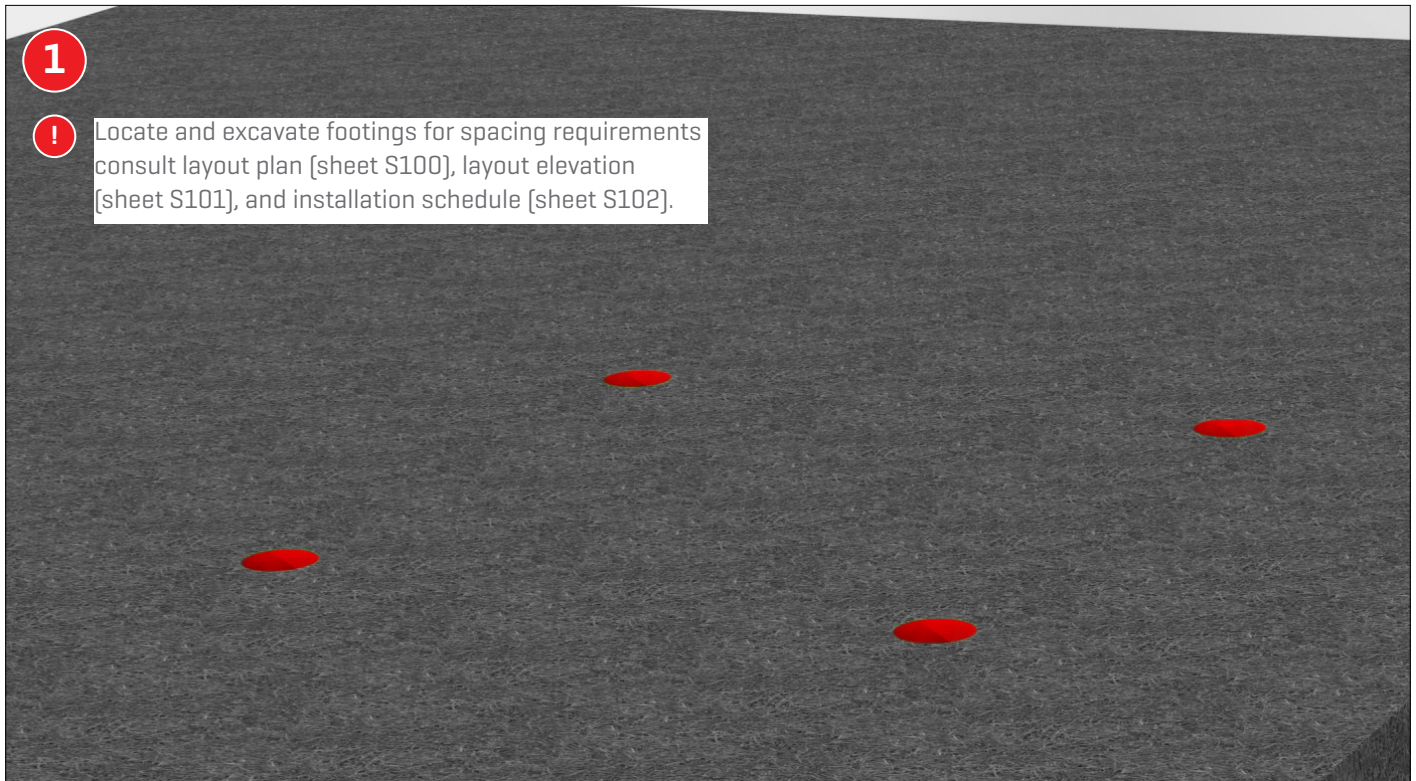


CR Microinverter & Optimizer Mounting Kit
400629-H



Omega Cable Clip
4005394

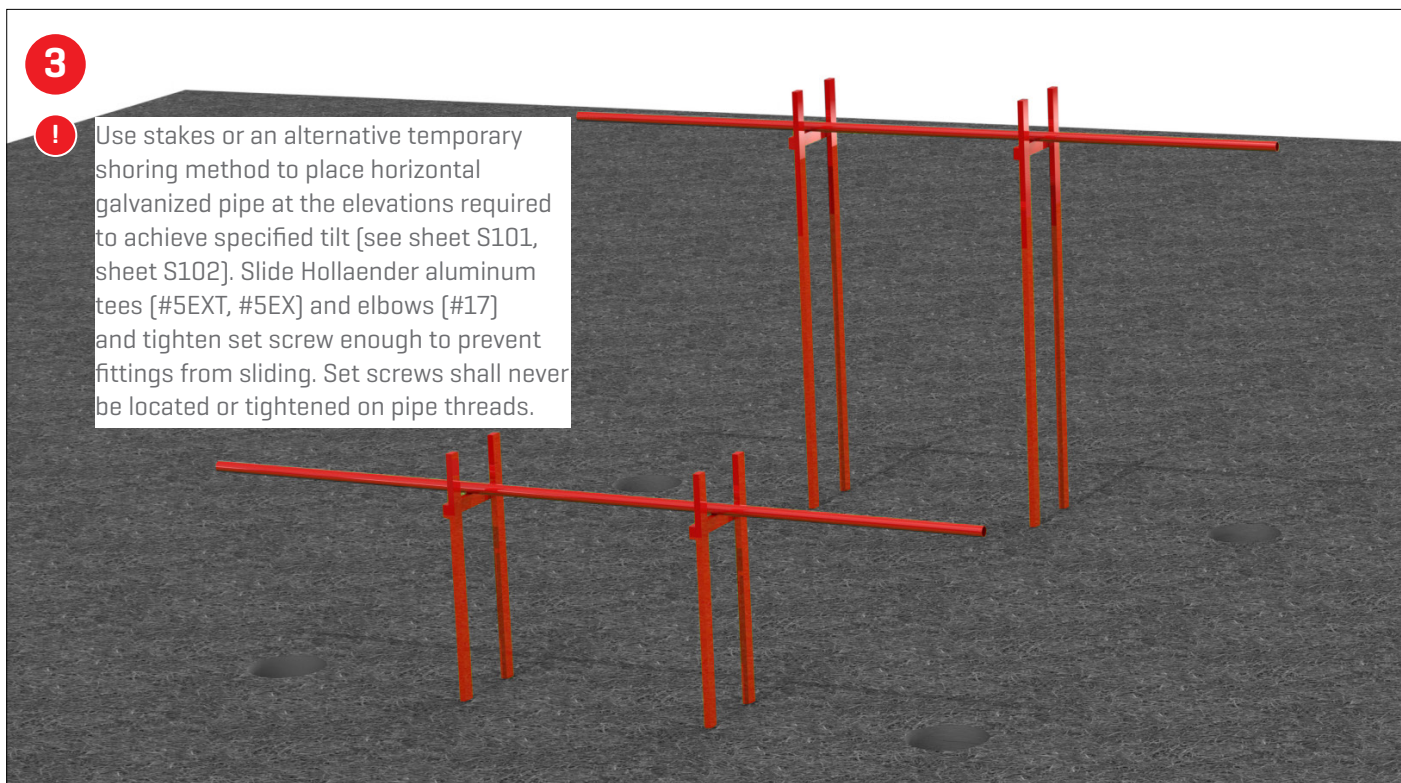
Assembly



3



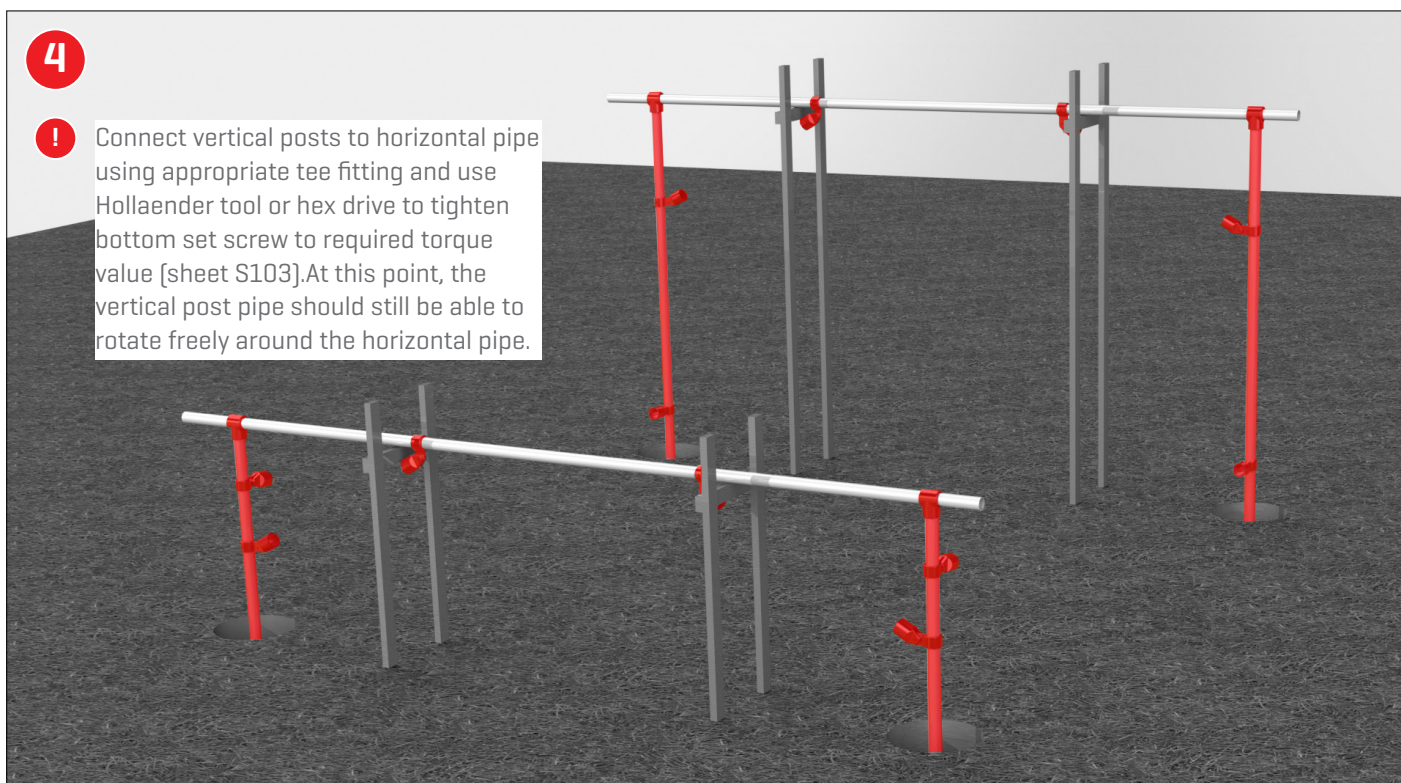
Use stakes or an alternative temporary shoring method to place horizontal galvanized pipe at the elevations required to achieve specified tilt [see sheet S101, sheet S102]. Slide Hollaender aluminum tees [#5EXT, #5EX] and elbows [#17] and tighten set screw enough to prevent fittings from sliding. Set screws shall never be located or tightened on pipe threads.



4



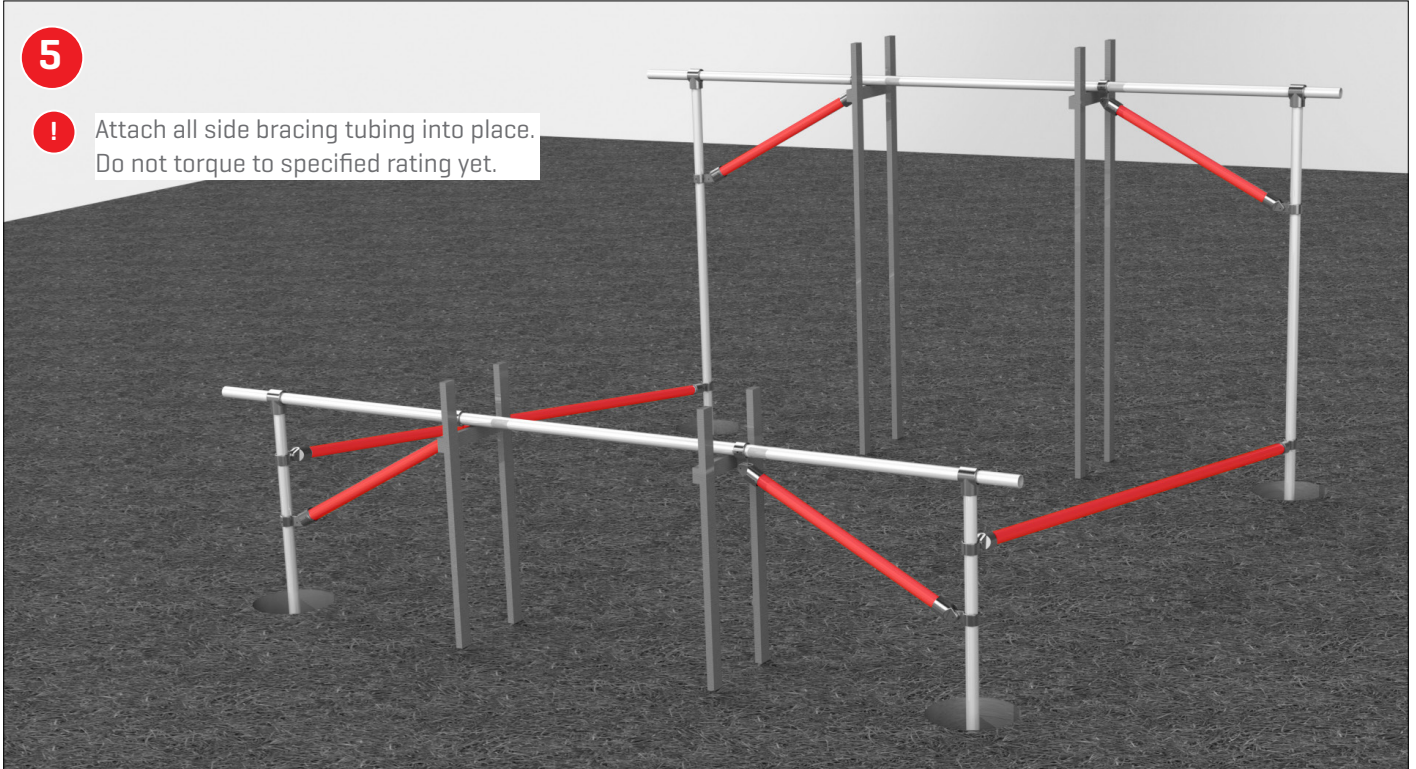
Connect vertical posts to horizontal pipe using appropriate tee fitting and use Hollaender tool or hex drive to tighten bottom set screw to required torque value [sheet S103]. At this point, the vertical post pipe should still be able to rotate freely around the horizontal pipe.



5



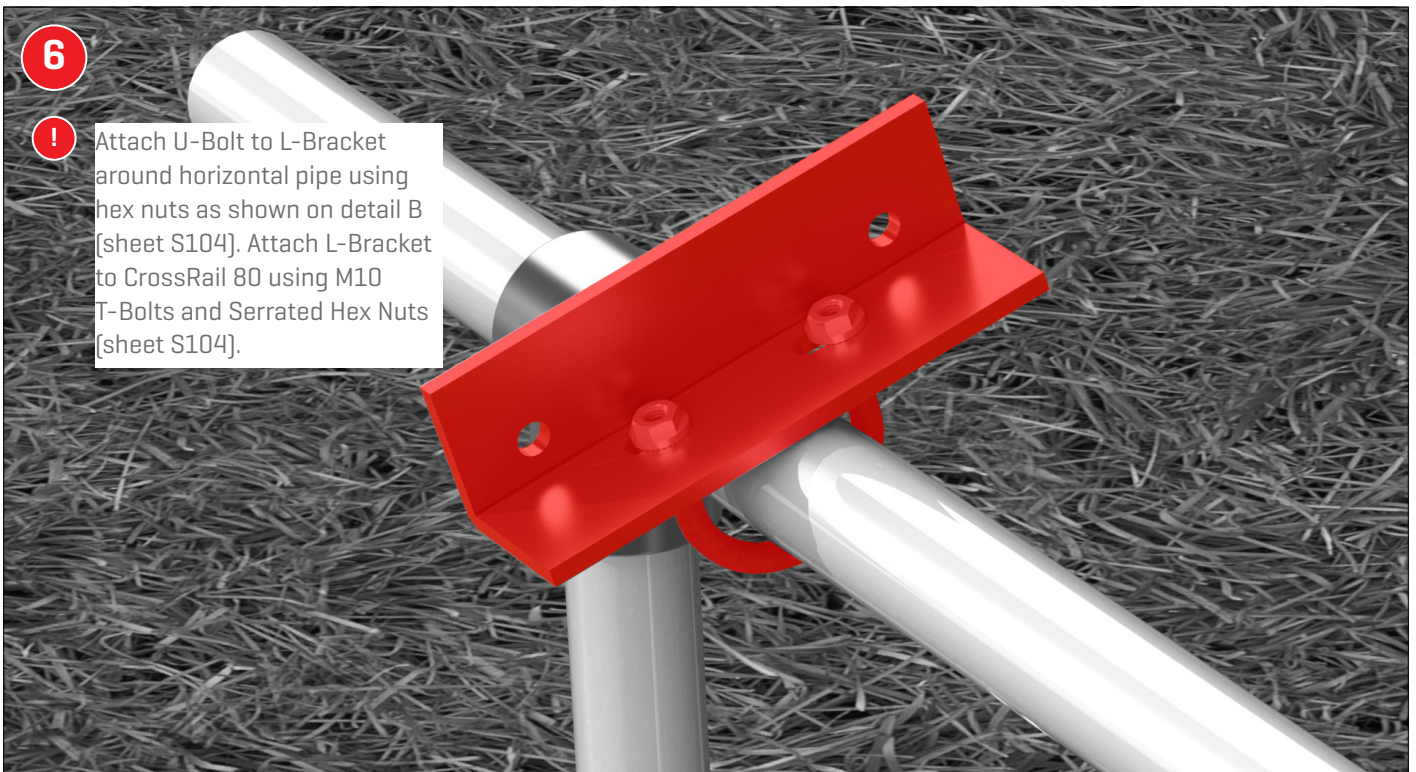
Attach all side bracing tubing into place.
Do not torque to specified rating yet.



6



Attach U-Bolt to L-Bracket
around horizontal pipe using
hex nuts as shown on detail B
[sheet S104]. Attach L-Bracket
to CrossRail 80 using M10
T-Bolts and Serrated Hex Nuts
[sheet S104].



7



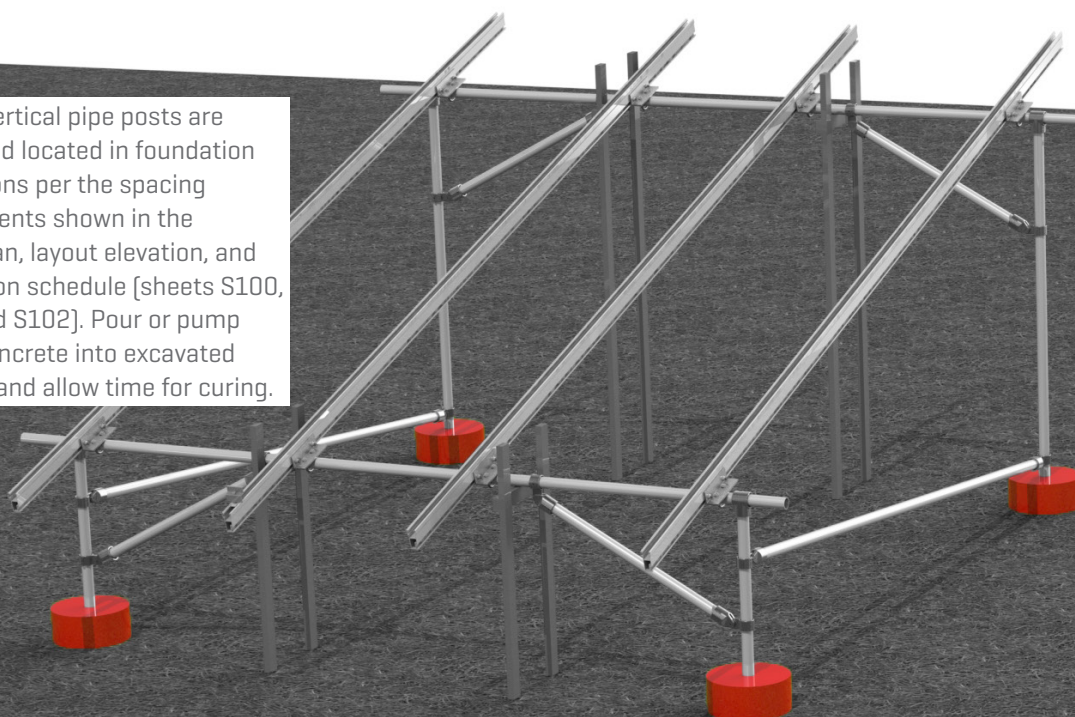
Set CrossRail 80 on to horizontal galvanized pipe at spacing required to support PV modules per the panels' manufacturer guidelines. Due to thermal expansion, we recommend placing a gap of 1.25"-2" [3-5cm] every 65 ft [20m] between rails. Maximum allowable spacing between thermal expansion gaps shall not exceed 80 ft [24.4m].



8



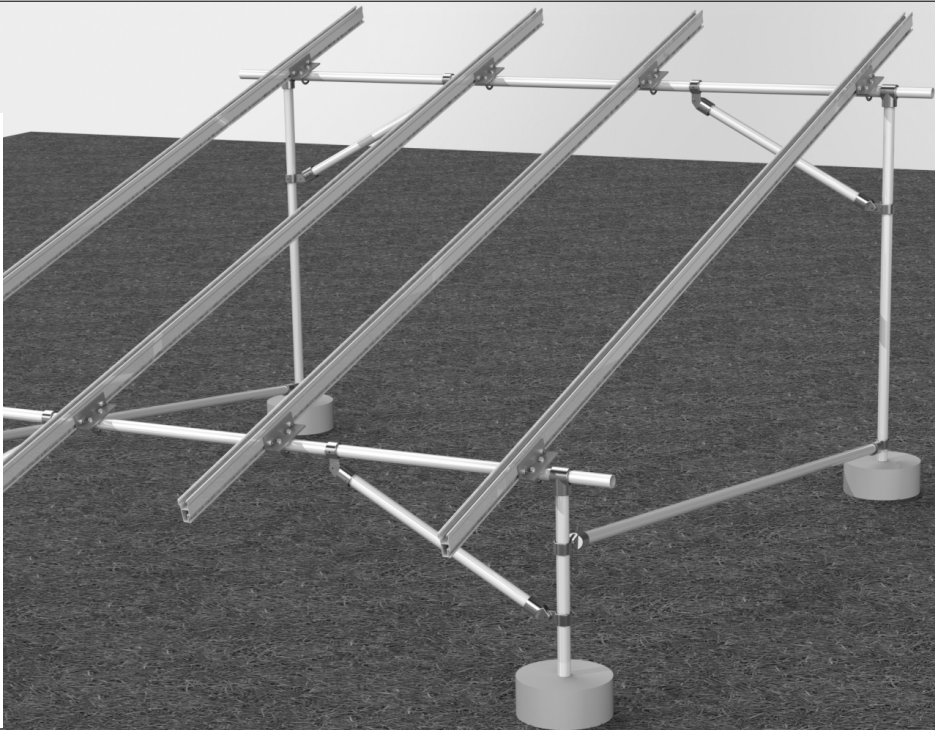
Ensure vertical pipe posts are plumb and located in foundation excavations per the spacing requirements shown in the layout plan, layout elevation, and installation schedule (sheets S100, S101, and S102). Pour or pump mixed concrete into excavated footings and allow time for curing.



9



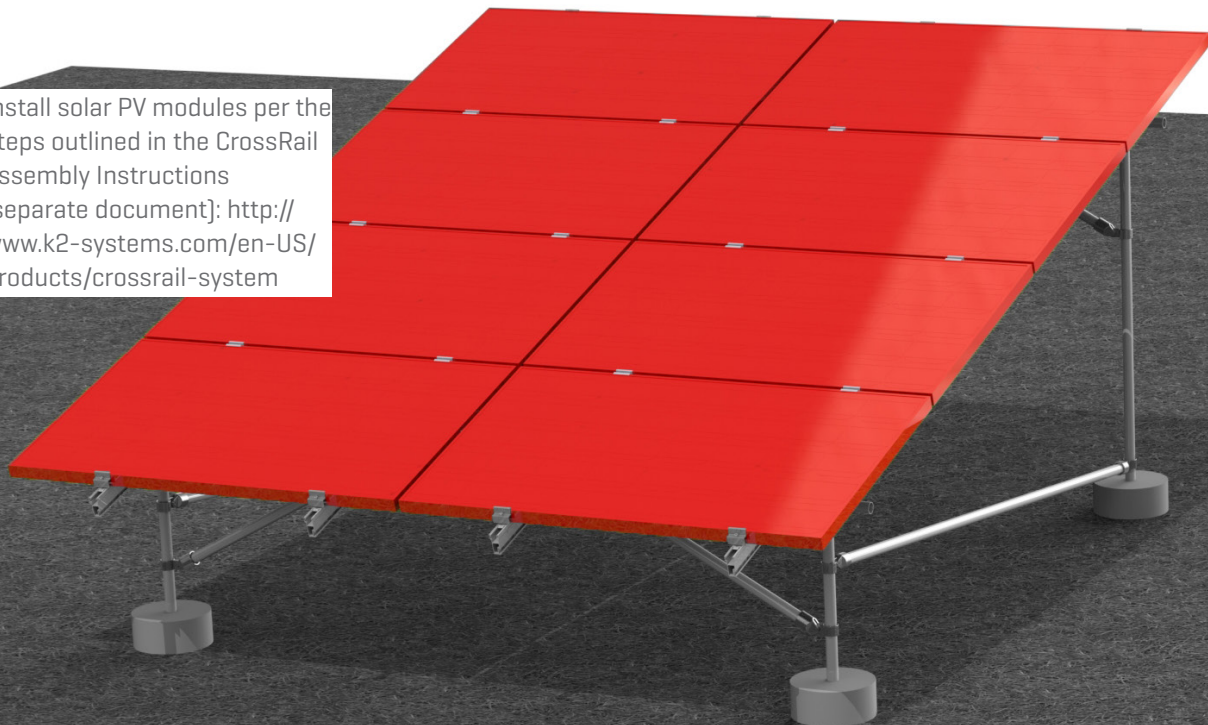
Remove temporary shoring and, if required, install piping for Tie-Brace (sheets S100, S101 and S103) and V-Brace (sheets S100, S101 and S105) as outlined in the installation schedule (sheet S102). Tighten all set-screws as shown on the detail sheets (sheets S103, S104). Adjust CrossRail 80 to final location as required to support PV modules. Tighten U-Bolt hex nuts to torque requirements shown on sheet S104. Ensure lock nuts are tightened to specified torque.



10



Install solar PV modules per the steps outlined in the CrossRail Assembly Instructions (separate document): <http://www.k2-systems.com/en-US/products/crossrail-system>



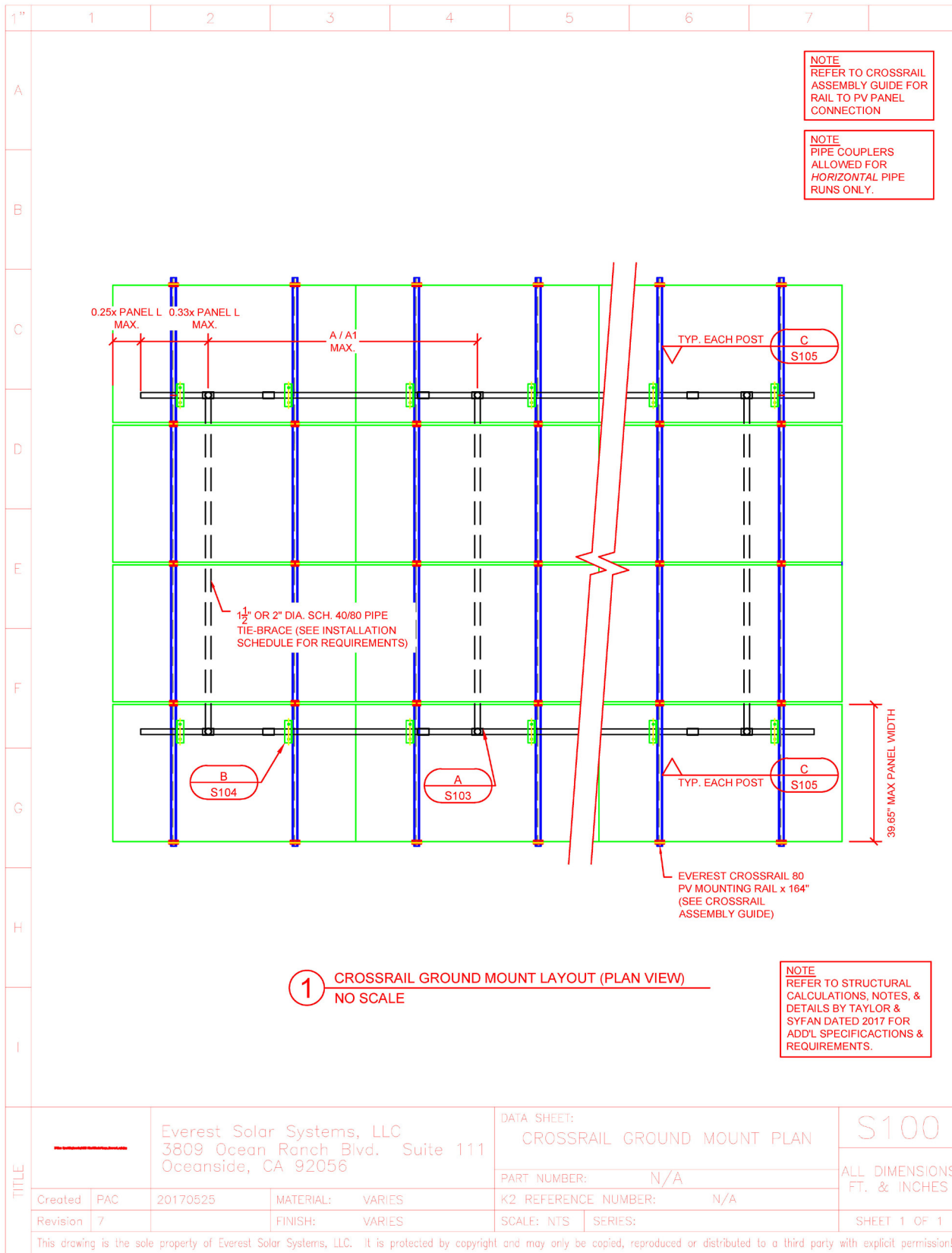
11

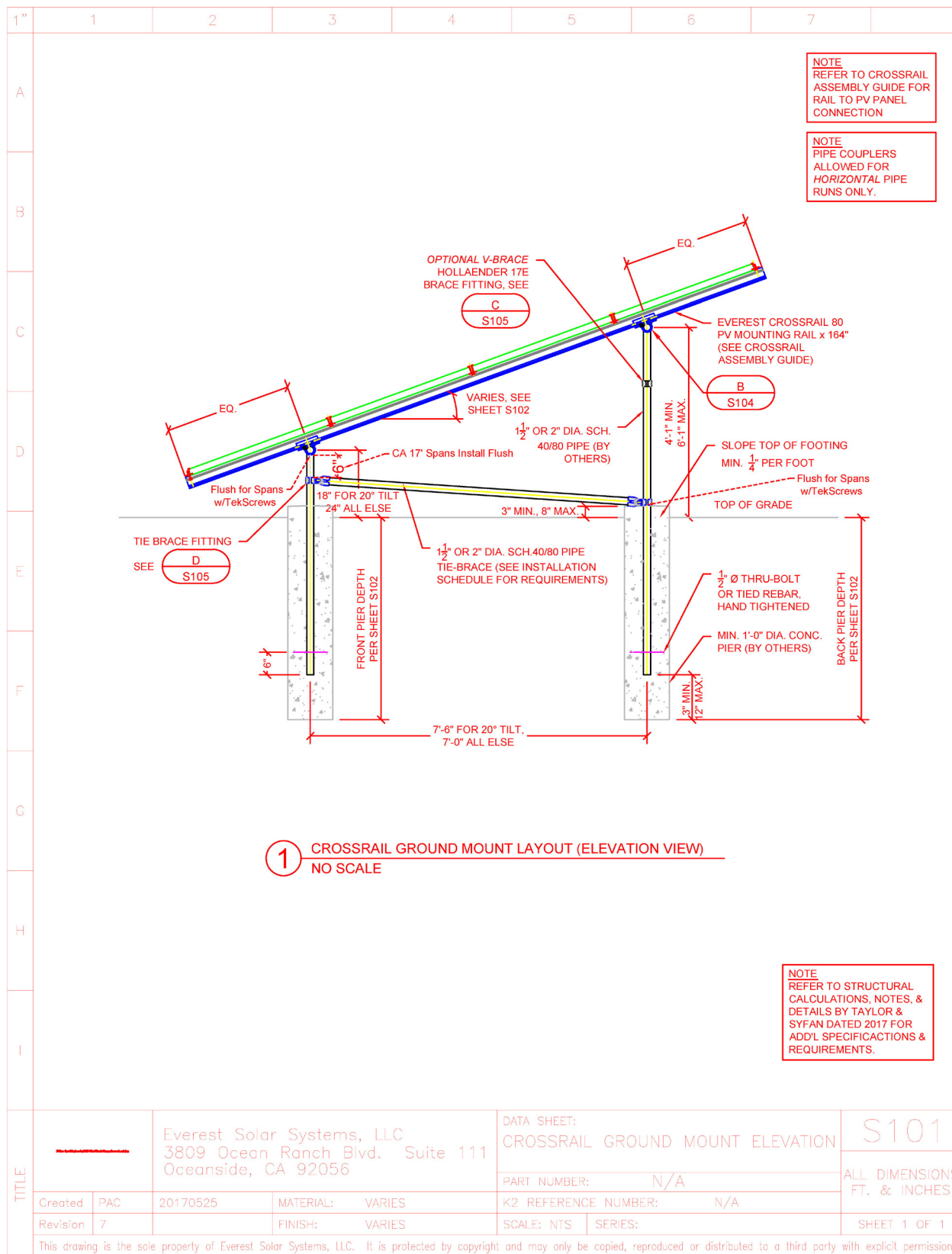


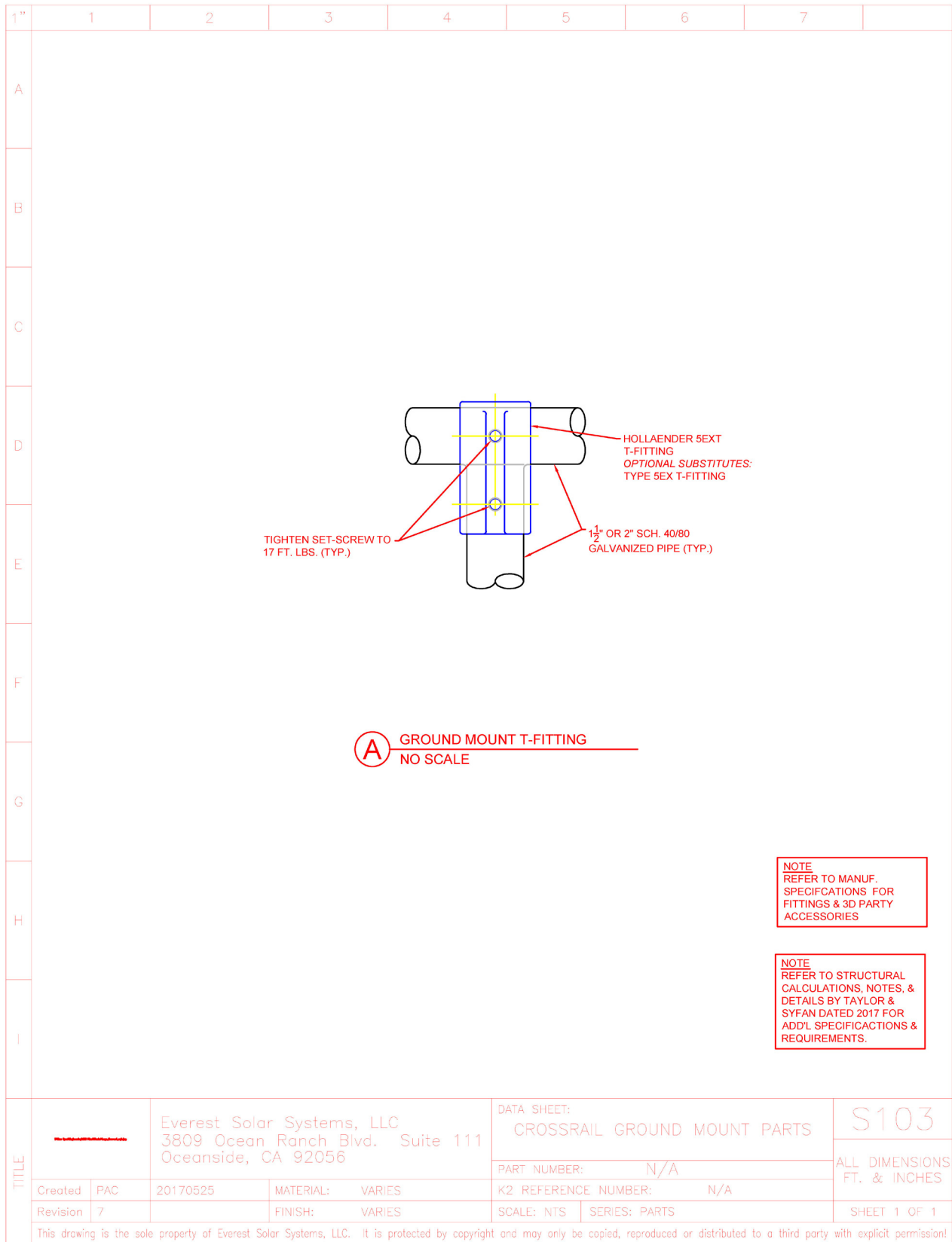
With all Hollander fittings properly torqued, locate the Tie Brace's #17 ADJ. ELBOW's. On the opposite side of the set screw, drill a pilot hole using a #3 Drill bit. Using the pilot hole, screw in self-tapping screw. Torque until flush against #17 ADJ. ELBOW. Repeat for opposite side of Tie Brace and for all Tie Braces within the system.

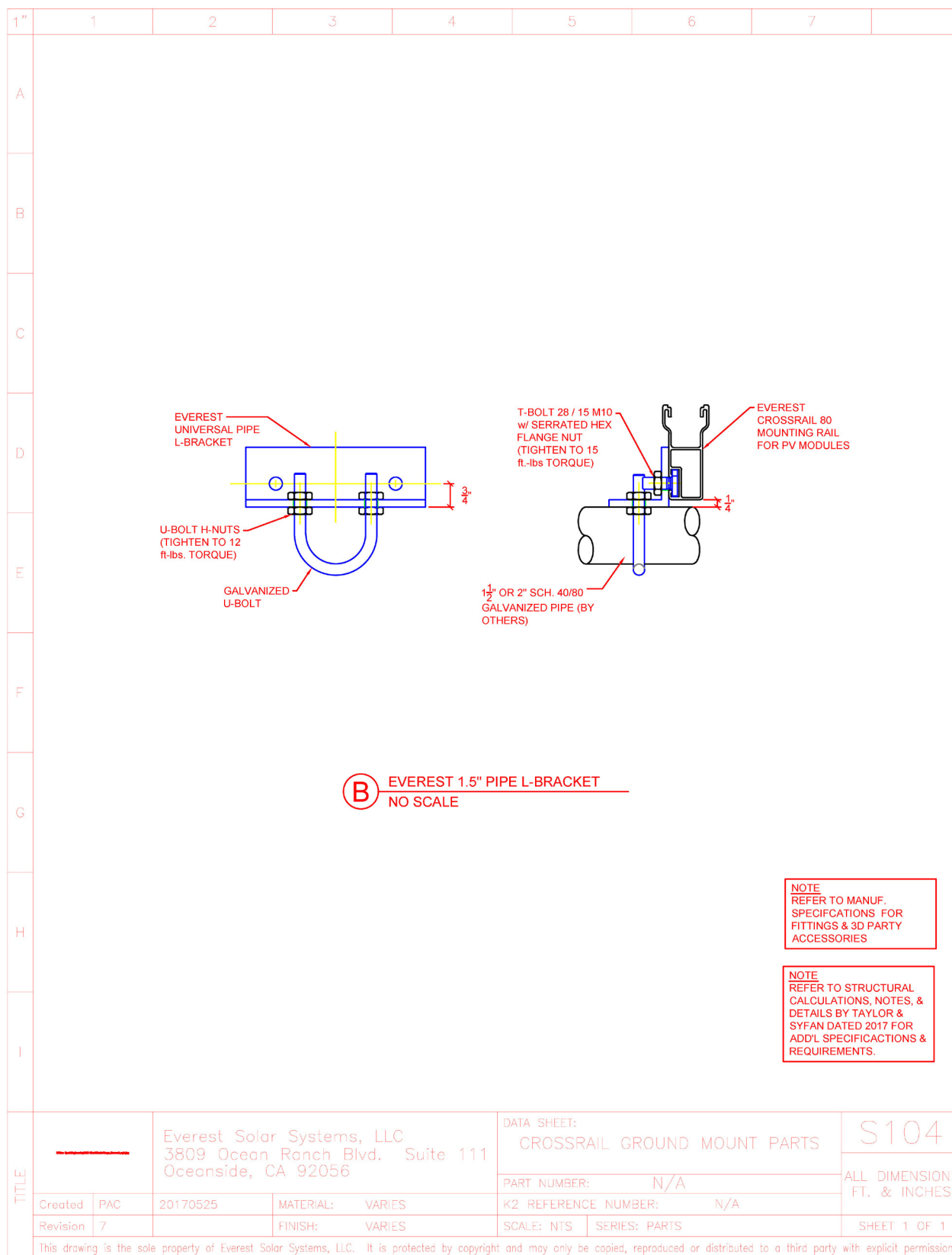


Detail Sheets









Notes





Thank you for choosing a K2 mounting system.

Systems from K2 Systems are quick and easy to install. We hope these instructions have helped. Please contact us with any questions or suggestions for improvement.

Our contact info:

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