

SDE



SKY-RACK 2.0 Ground Mount Season Adjustable System

INSTALLATION GUIDE



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PRODUCT SPEC SHEET



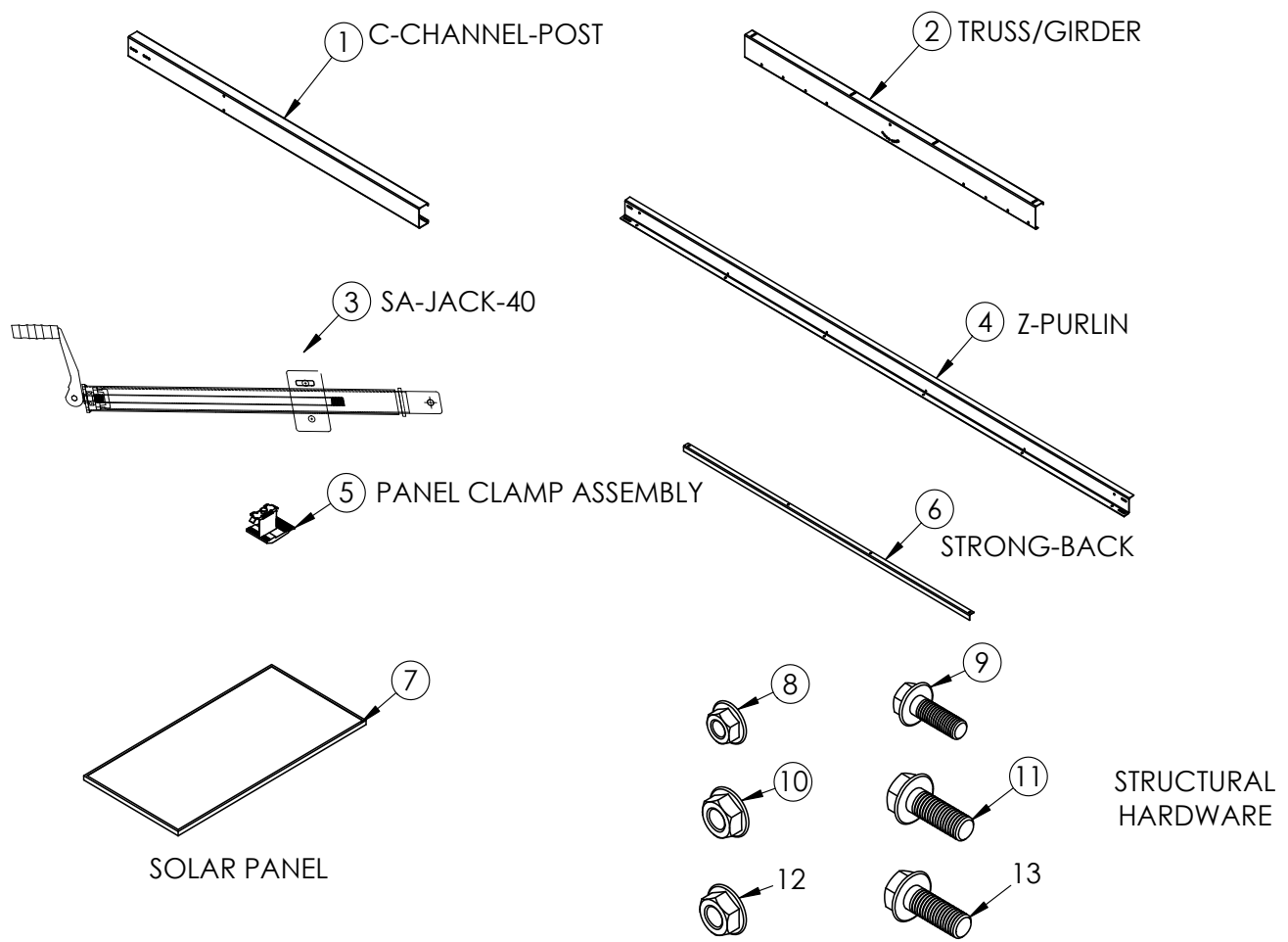
Fixed Tilt System or Season Adjustable - Module Clamp Kits or Direct to Frame



FIXED TILT ANGLES	FIXED TILT - 20, 25, 30, 35 DEGREES	TERRAIN	+/- 5DEG E/W
SEASON ADJUST ANGLES	15 - 60 DEGREES	WIRE MANAGEMENT	OPTIONAL POLY U-GUARD
MODULE ORIENTATION	TWO HIGH PORTRAIT	WARRANTY	20-25 YEARS
WIND LOAD	125 MPH	MATERIAL	GRADE 50-60 HSLA STEEL
SNOW LOAD	60 PSF	COATING	GALVANIZED W/CHEM TREAT
GROUND CLEARANCE	24 - 36 IN STANDARD	MANUFACTURING INFO	MADE IN THE USA
MODULE CLAMPS	SDE CLAMP KITS	STRUCTURAL CERTIFICATIONS	UL 2703 LISTED
OR DIRECT TO RAME	OPTIONAL	QUALITY CERTIFICATION	ISO-9001 2015



CLAMP DESIGN: Included Parts List



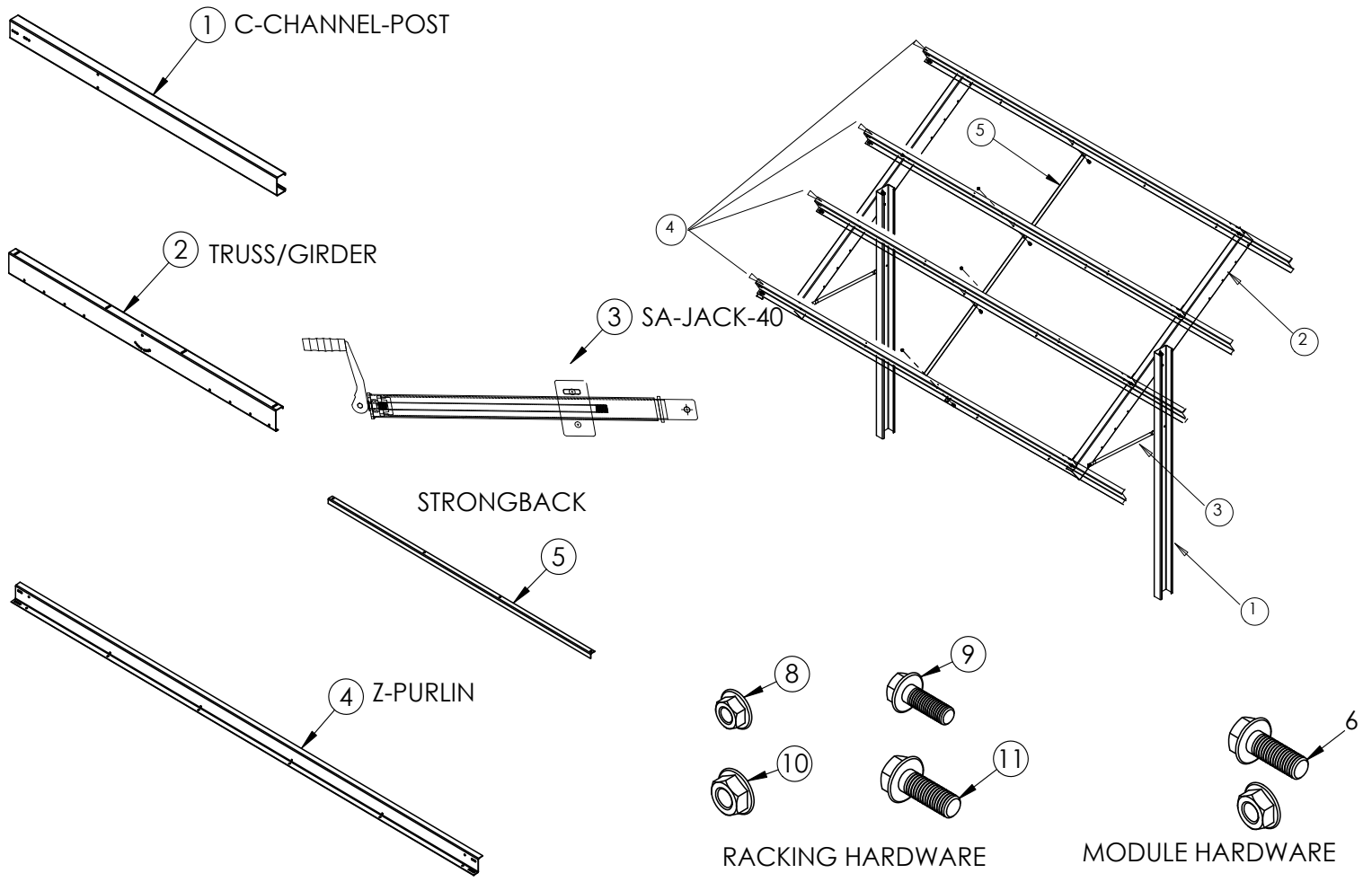
ITEM NO.		QTY
1	C-CHANNEL-POST	2
2	TRUSS/GIRDER	2
3	SA-JACK-40	2
4	Z-PURLIN	4
5	PANEL CLAMP ASSEMBLY	20
6	STRONG-BACK	1
7	PV MODULE	10
8	1/2-13 FLANGE HEAD NUT	14
9	1/2-13 X 1.5 FLANGE HEAD BOLT	14
10	5/8-11 FLANGE HEAD NUT	4
11	5/8-11 X 1.75 FLANGE HEAD BOLT	4

ITEM NO.	Recommended Installation Tools:	QTY
	1/4 or 1/2 1500 in/lb MIN Impact Driver 1/2 - 3/4 - 15/16 in Impact Sockets (Always take extra batteries)	
5	TORQUE SPEC = 10 ft/lbs	20
Over Torque of Clamps Could Result in Module Damage		
9	TORQUE SPEC = 57 ft/lbs	14
11	TORQUE SPEC = 112 ft/lbs	2

Note: Z-PURLIN 49.5 East & West Cantilevers are available - See Design Requirements & Bill of Materials

DIRECT TO FRAME DESIGN:

Included Parts List



ITEM NO.	DESCRIPTION	QTY
1	C-CHANNEL-POST	2
2	TRUSS/GIRDER	2
3	SA-JACK-40	2
4	Z-PURLIN	4
5	STRONGBACK	1
6	1/4-20 SERRATED FLANGED BOLT/NUT	40
7	PV MODULE	10
8	1/2-13 FLANGE HEAD NUT	14
9	1/2-13 X 1.5 FLANGE HEAD BOLT	14
10	5/8-11 FLANGE HEAD NUT	4
11	5/8-11 X 1.75 FLANGE HEAD BOLT	4

TORQUE	Recommended Installation Tools:	
	1/4 or 1/2 1500 in/lb MIN Impact Driver 1/2 - 3/4 - 15/16 in Impact Sockets (Always take extra batteries)	
6	TORQUE SPEC = 6 ft/lbs	40
9	TORQUE SPEC = 57 ft/lbs	14
11	TORQUE SPEC = 112 ft/lbs	4

Note: Z-PURLIN 48.5 East & West Cantilevers are available - See Design Requirements & Bill of Materials

Safety Information



IMPORTANT

It is highly recommended that system installation and any subsequent modifications, disassembly, or reassembly be conducted by a factory authorized representative. Contact SDE for additional information.



CAUTION: WATCH FOR WIRES!

Extreme caution should be taken when installing near power lines. For your own personal protection, the following safety steps should be taken:

- Perform as many functions as possible on the ground.
- Watch out for overhead power lines. Check the distance to the power lines before starting installation.
- Recommended minimum distance of 6 meters (20 feet) from all power lines.
- Do not use metal ladders.
- Do not install assembly on a windy day.
- If assembly slips, move away from it and let it fall.
- If any part of the assembly comes in contact with a power line, call your local power company. DO NOT TRY TO REMOVE IT YOURSELF! They will remove it safely.
- Make sure that the assembly is properly grounded.



WARNING

Assembling on windy days can be dangerous. Additional precautions should be taken when assembling in high wind areas. The modules surface, even in slight winds, create strong forces. Be prepared to safely handle these forces at unexpected moments. Do not attempt to assemble, move or mount assembly on windy days or serious, even fatal accidents may occur.

SDE is not responsible or liable for damage or injury resulting from antenna installations.



WARNING

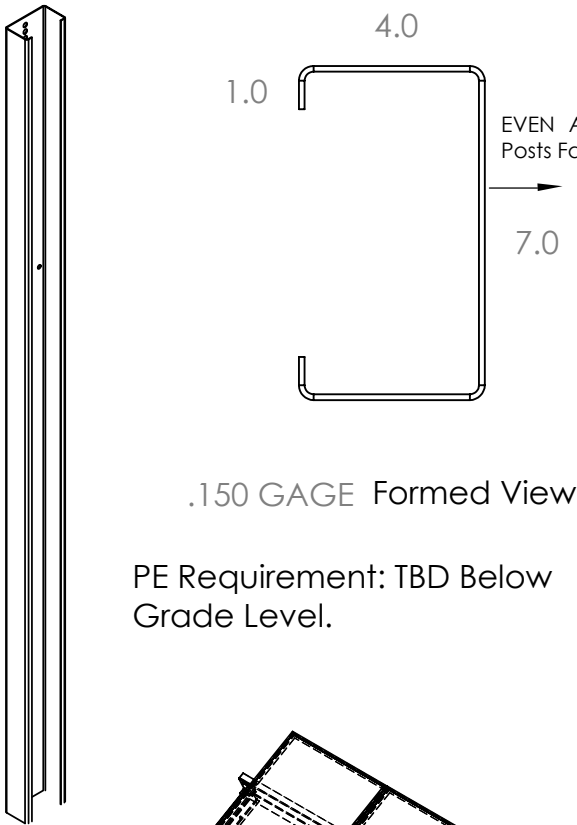
Units improperly installed or installed to an inadequate structure can be susceptible to wind damage. This damage can be very serious and even life threatening. The owner and installer assumes full responsibility that the installation is structurally sound to support all loads (weight, wind and ice) and properly sealed against leaks. SDE will not accept liability for any damage caused due to the many unknown variable applications.

1.0 System Set-up Procedure

Warning: Extreme care must be taken for this setup procedure to avoid bodily injury and/or equipment damage. Wear proper PPE.

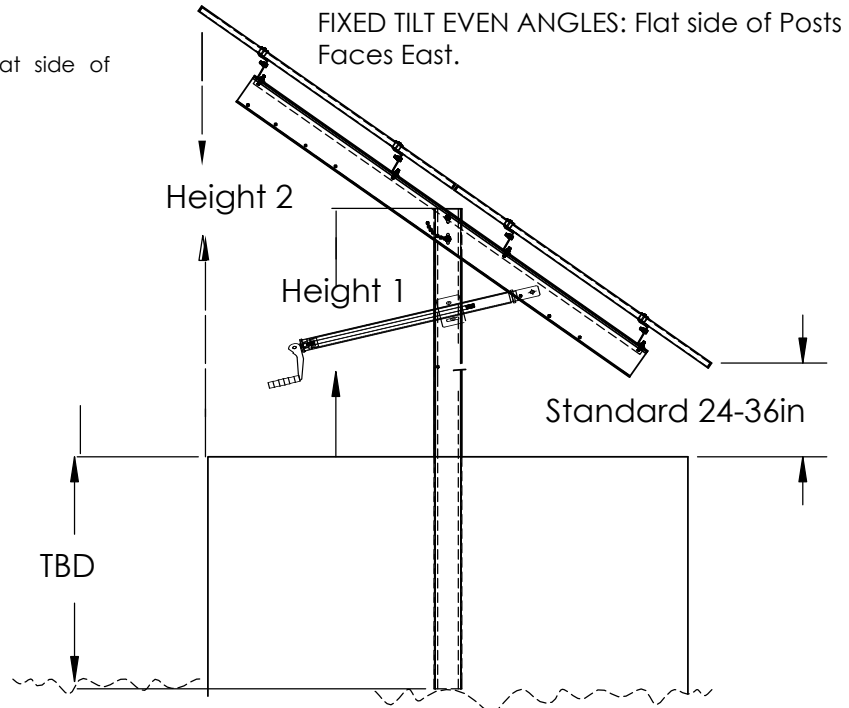
1.1 Post Install

Choose a site that is as level as possible. Install depth will be determined by many factors, such as region and local building code & national ASCE requirements.



FIXED TILT ODD ANGLES - 25, 35, & Season Adjustable Systems: Flat side of Posts Faces West.

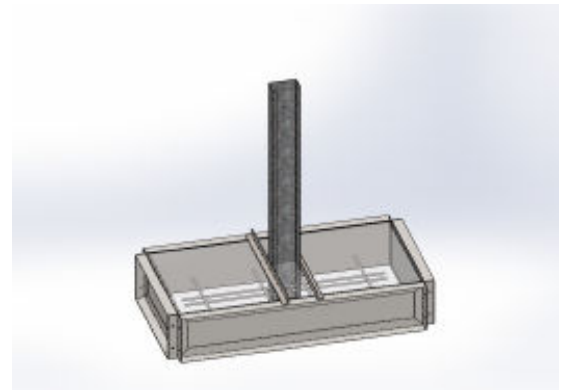
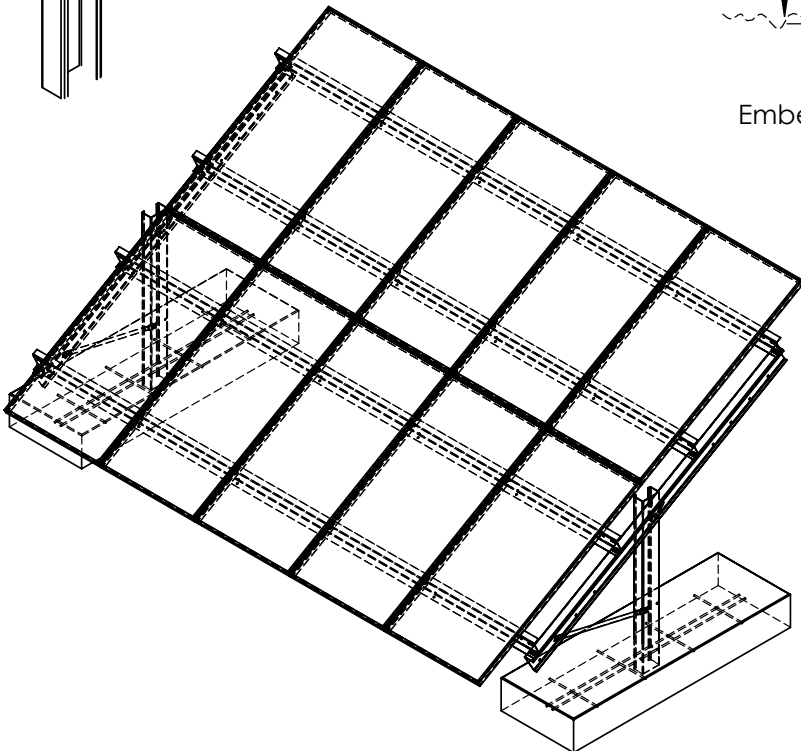
FIXED TILT EVEN ANGLES: Flat side of Posts Faces East.



Post Driven: Average Embedment Depth = 6.5 - 8.5ft

Concrete Footer: Average is 24in OD x 60in Deep

Concrete Ballast Block: 120in L x 30in W x 12in H





1.0 System Set-up Procedure - POST DRIVEN SYSTEM

Warning: Extreme care must be taken for this setup procedure to avoid bodily injury and/or equipment damage. Wear proper PPE.

STEP 1: IF USING CLAMPS, VERIFY YOUR PANEL PROGRESSION CALCULATION
(Module Width + .4in Clamp Width) Multiplied by # of Modules. This will determine the minimum amount of racking needed.

STEP 2: POST SPACING DIMENSIONS FOR 204in Z-Purlins (Panel Frames Less Than 40in)

160in Center to Center spacing for East Start Section
202in Center to Center spacing (West 10x Panel Add Section)
142in Center to Center spacing (West 8x Panel Add Section)
102in Center to Center spacing (West 6x Panel Add Section)

POST SPACING DIMENSIONS FOR 214in Z-Purlins (Panel Frames from 40in - 43in)

160in Center to Center spacing for East Start Section
212in Center to Center spacing (West 10x Panel Add Section)
153in Center to Center spacing (West 8x Panel Add Section)
111in Center to Center spacing (West 6x Panel Add Section)

POST SPACING DIMENSIONS FOR 186in Z-Purlins (Panel Frames Greater than 43in) Note:
We recommend Direct Tie Only for Larger 500W+ Frames.

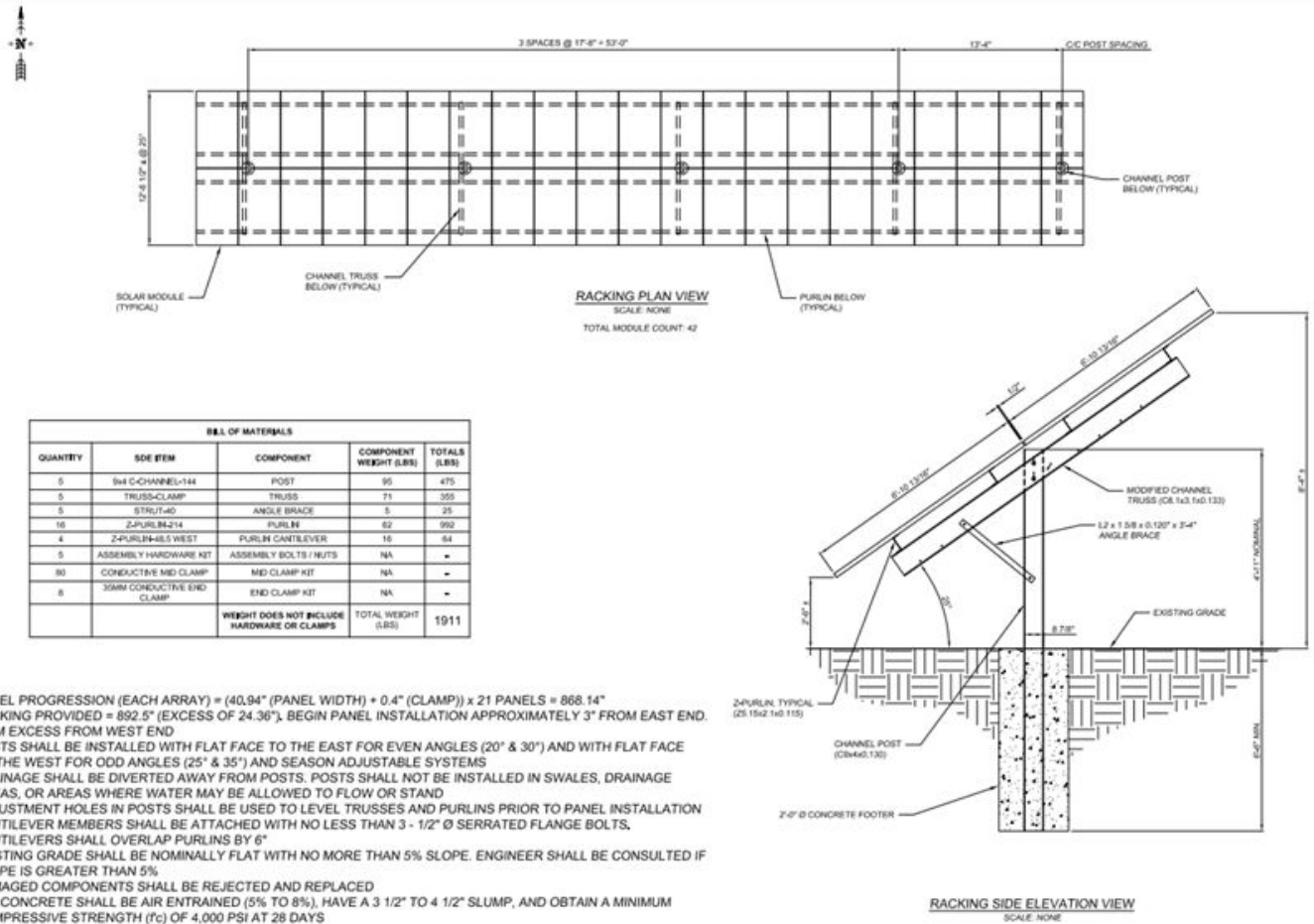
160in Center to Center spacing for East Start Section
184in Center to Center spacing (West 8x Panel Add Section)
104in Center to Center spacing (West 6x Panel Add Section)

2x Panels can be added with Cantilever Extensions on the East & West end of the arrays (Z-PURLIN-48.5)

We recommend building the system from East to West, as it is more efficient to overlap the Z-Purlins progressively on top.

1.0 System Set-up Procedure

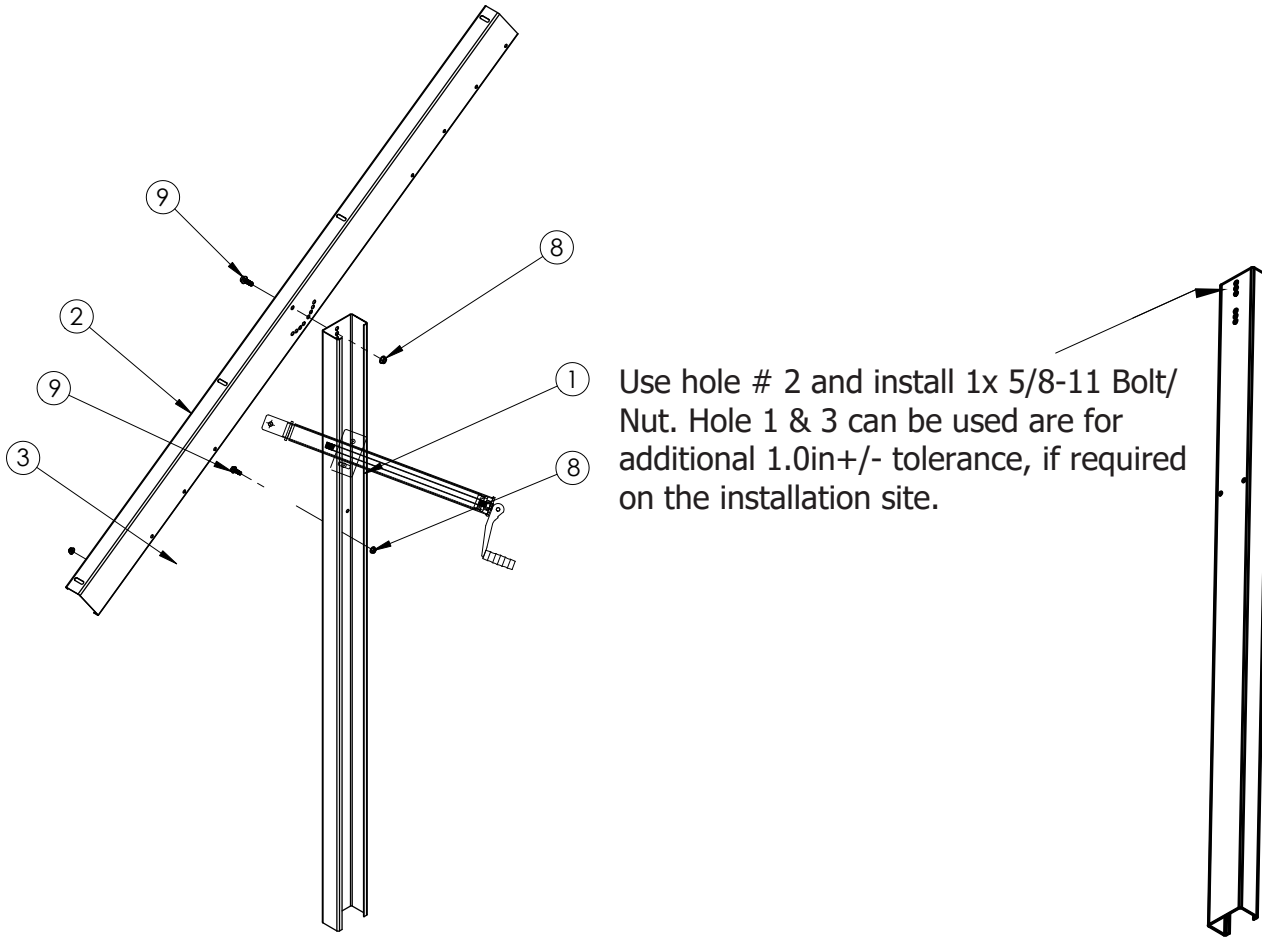
1.4 DESIGN EXAMPLE. Note, please reference your SDE draw package that is specific to your project.



1.0 System Set-up Procedure

1.2 TRUSS-120 ASSEMBLY TO POST

Fasten angled mount on driven post with provided hardware. Then add season adjustable jack with 3x 1/2-13x 1/2 Serrated Flanged Bolts/nuts. Note: the C-Channel has a 6x hole pattern for +/- 1.0 in tolerance.



STEP 1: Install TRUSS to the C-Channel Post with 2x 5/8-11 x 1 1/2in Bolts/Nuts.

STEP 2: SEASON ADJUST SYSTEM: When installing the SA-JACK-40, we recommend hand tightening the hardware, backing off the nut 1/2 turn, and adding a second nut at each location. This will allow the jack to pivot freely, while also preventing further movement of the hardware.

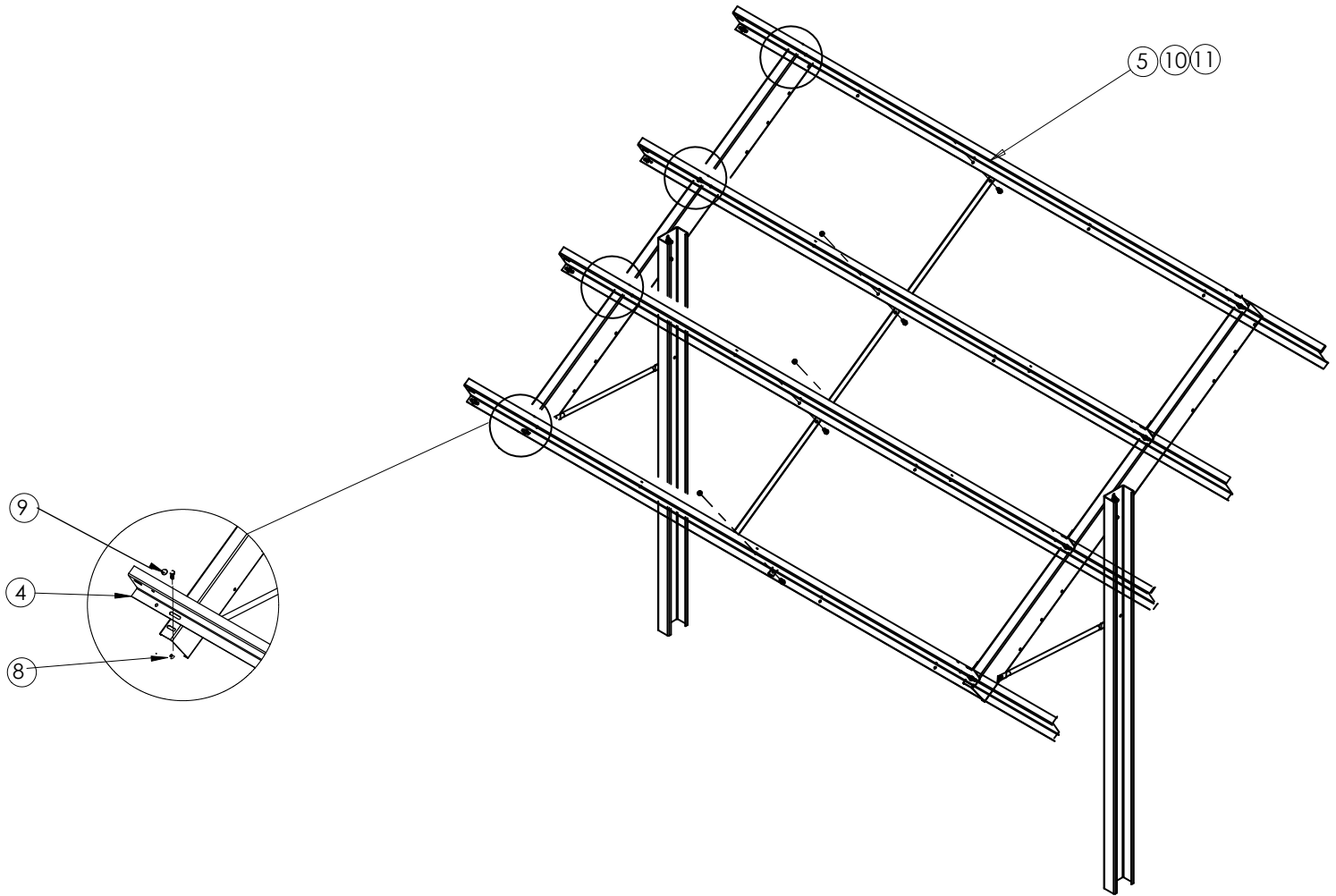
Install SA-JACK-40 to the C-Channel Post & Truss with 3x 1/2-13 x 1 1/2in Bolts & 6x 1/2-13 Nuts. Of note, if adjusting the system alone, only adjust each jack in 5x Degree Increments.

1.0 System Set-up Procedure

1.4 Z-PURLIN to TRUSS ASSEMBLY

Attach 4x Z-Purlins to the SLR-TRUSS with 1/2-13 x 1 1/2 Hardware.

Face Top Z-Purlin Flanges North



1.5 STRONG-BACK Install

Install STRONG-BACK to Z-purlins with 4x 1/2-13 hardware as detailed above.

Note: These are rarely required to be installed by our Professional Engineers.

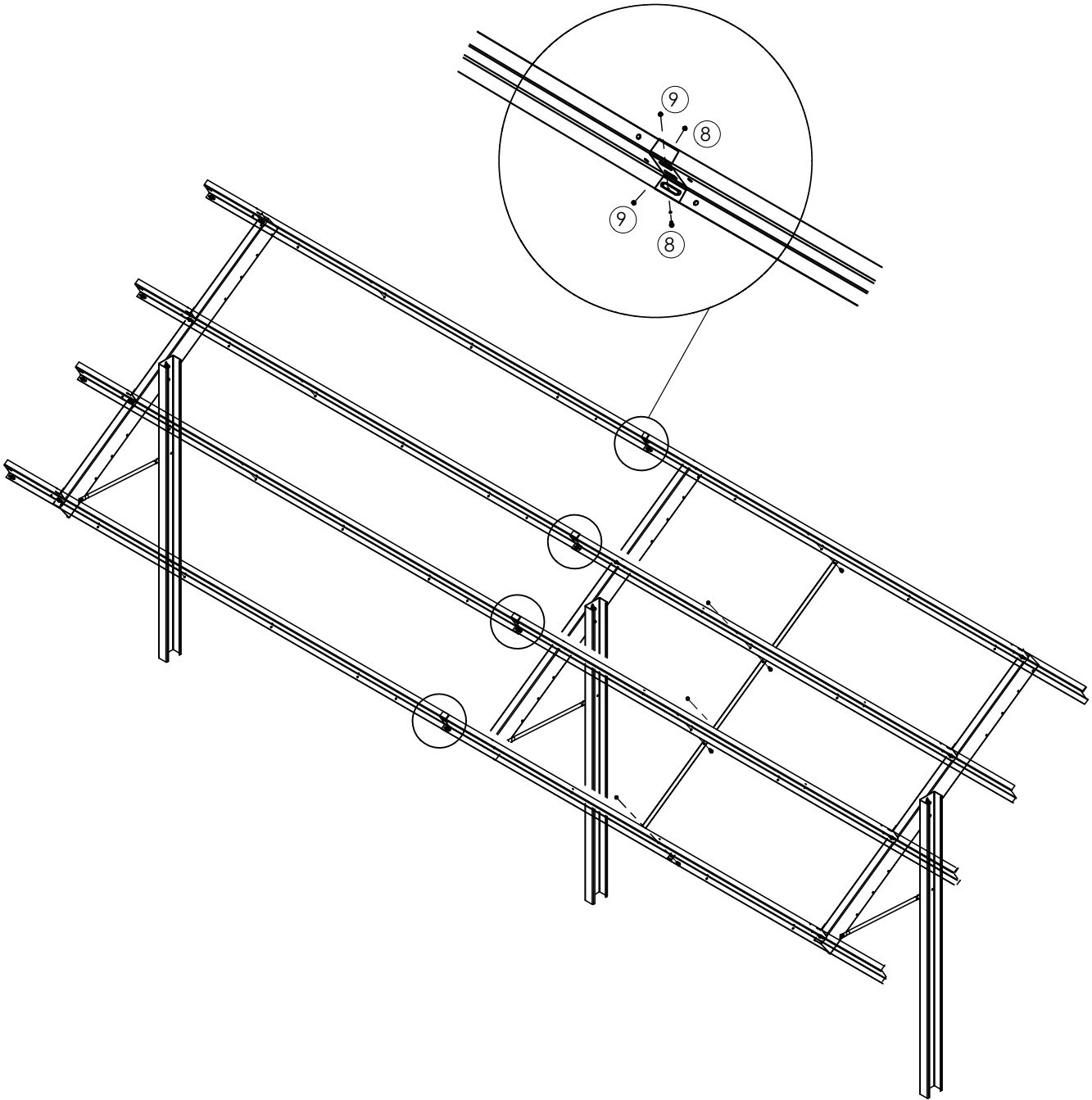
Mainly used in Hurricane Zones.

1.0 System Set-up Procedure

Z-PURLIN OVERLAP

Attach 4x Z-Purlins to 4x Z-Purlins with 1/2-13 x 1 1/2 Hardware.

AA-PURLIN-204, 214's, 186's (Overlap by 2 inches and install 2x 1/2-13 x 1 2/2 Serrated Flanged Hardware



1.0 System Set-up Procedure

1.6 Panel Installation with Clamps

If Panels are to be installed with provided clamp assemblies. This clamp consists of three parts:
1x 5/16 x 2 1/2 Serrated Flanged Bolt - 1x UL Stainless Mid Clamp - 1x Tapped Aluminum Extrusion

1.6.1 Panel Installation without Clamps

If Panels are to be installed direct to frame, line up the module frame holes with the Z-Purlin slots and install 1/4-20 x 5/8 stainless serrated flanged bolts & nuts.

