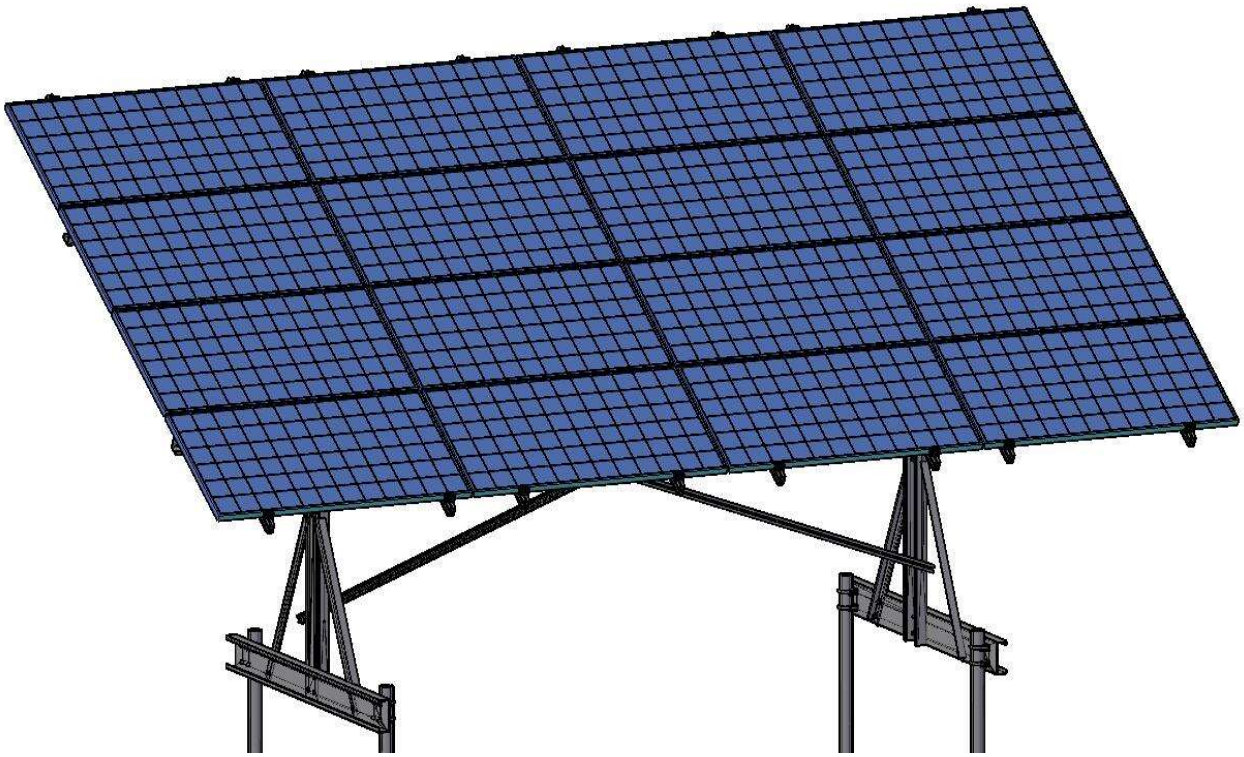
Pion Power PVSolver GS-03

GROUND RACKING SYSTEM INSTALLATION MANUAL

(UPDATED – July 12 2022)



Contents

1 Racking Structure Brief

1.1 BRAND AND MODEL

Brand: Pion Power PVSolver

Model: GS-03

1.2 REVISION REVIEW

Product version: V1-0213

Manual version: 01-0213

1.3 DECLARATION

a. The information contained in this document represents the current view of Pion Power PVSolver on the issues discussed as of the date of publication. Since Pion Power PVSolver must respond to changing market conditions, it should not be interpreted to be a commitment on Pion Power PVSolver part. Pion Power PVSolver cannot guarantee the accuracy of any information presented after the date of publication. This document is for informational purposes only and makes no guarantees, expressed, implied or statutory, to the information within this document.

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2 Standards & References

2.1 STANDARDS

CAN/CSA-086-01(R2006), Engineering Design in Wood, Standards Council of Canada;
CSA S304.1-04 (R2010), Design of Masonry Structures, Standards Council of Canada;
CAN/CSA-A23.3-04 (R2010), Design of Concrete Structures, Standards Council of Canada;
CAN/CSA -A23.1-14/A23.2,14 (R2014), Concrete materials and methods of concrete construction / Test methods and standard practices for concrete, Standards Council of Canada;
CAN/CSA-S16-01 (R2007), Limit States Design of Steel Structures, Standards Council of Canada;
CAN/CSA-S413-14(R2012), Parking structures, Standards Council of Canada;

2.2 REFERENCES

Ontario Building Code 2012 4.1.6 Snow Load;
Ontario Building Code 2012 4.1.7 Wind load;
Ontario Building Code 2012 9.4.3 Deflections

3 Applicability & Certification

3.1 APPLICABILITY

3.1.1 FOUNDATION

- Helical pile
- Ballasted concrete block

3.1.2 SOLAR PANEL

- 60-cells, 72-cells, and other customized solar panels
- **Panel frame height:** 30mm, 35mm,40mm,45mm

3.1.3 INVERTER

- Micro inverter
- Power Optimizer
- String inverter

3.2 CERTIFICATIONS

Certification: UL2703

Testing involved:

- Bonding Path Resistance Test
- Temperature Cycling test
- Humidity Test
- Mechanical Loading Test
- Bonding Conductor Test

4 Installation guide

4.1 SAFETY OPERATION GUIDE

1. The manual must be read and understood before installation. Workers must comply with all of these safety instructions to minimize the risk of danger, property damage and personal injury.
2. All installations must be performed by qualified personnel in compliance with all applicable codes including O.B.C 2012 and N.B.C 2010.
3. Always check with local building and safety departments for specific codes and permits.
4. Make sure that the building structure can support the racking system under all the applicable design loads including but not limited to snow, rain, wind and seismic loads per these codes.
5. All applicable OSHA (Occupational Safety and Health Act) guidelines must be followed to ensure proper safety.
6. Always use the appropriate tools for the correct applications. Never modify or change an existing tool to meet a specific need. The list of specific tools needed for installation has been included in the manual.
7. If the fall height is greater than 10' (3m), persons working on the roof must be provided with anti-fall protection. Debris netting or similar equipment is required to protect persons on the ground from falling objects.
8. The environment needs to be free of roofing obstructions, rain, snow, ice, high winds or any other elements that may cause potential harm or injury to an installer.
9. Please keep in mind that as long as the modules are exposed to light, for safety of installation personnel, open all disconnect switches, circuit breakers, and keep wire ends insulated during installation, also keep the wire ends insulated during assembly.
10. Photovoltaic modules produce electricity when sunlight or other sources illuminate the front face. The voltage from a single module is not considered a shock hazard. When modules are connected in series, voltages are additive. When modules are connected in parallel, current is additive. Consequently, a multi-module system can produce high voltages and current which constitute an increased hazard and could cause serious injury or death.
11. The installer should visit the site and become familiarized with all the characteristics affecting new and existing construction. The contractor shall check all dimensions on working drawings and report any discrepancies to the engineer prior to proceeding with the work. Additionally, any changes, alterations, or revisions must be reported to the engineer before proceeding with the work.

4.2 TOOLS LIST

1. Torque wrench
2. Ratchet wrench and Hexagonal key(M8\M10\M12\M16\M30)
3. 6/19" Fractional socket
4. Flathead screwdriver
5. Cordless drill
6. Scissors
7. Tape measure
8. Approved extension ladder
9. Marking crayon or keel
10. Personal protective equipment (PPE)

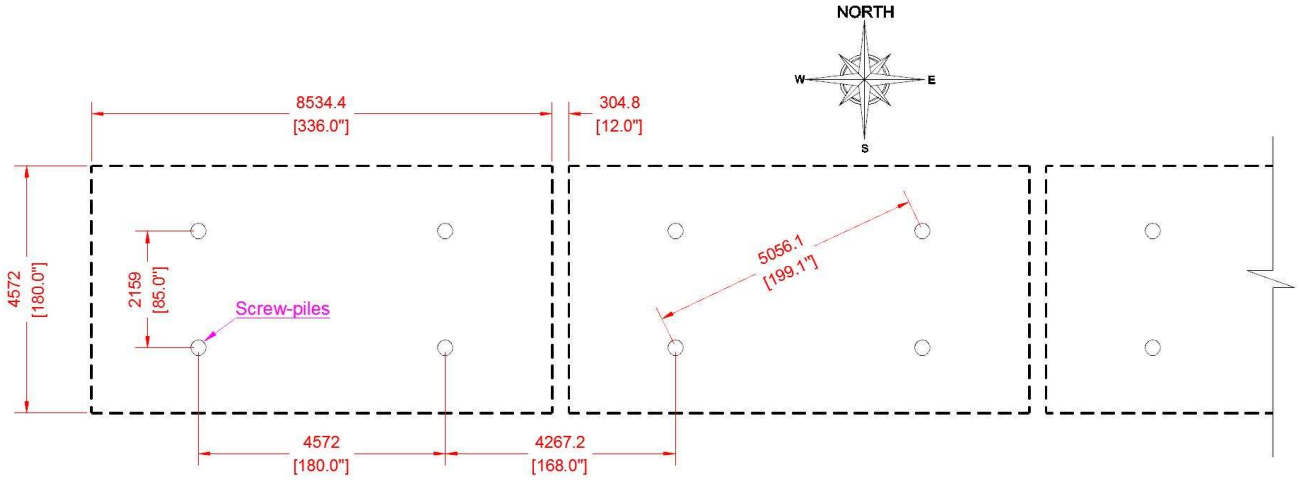
4.3 INSTALLATION (SEQUENCE BASED ON INSTALLATION ORDER)

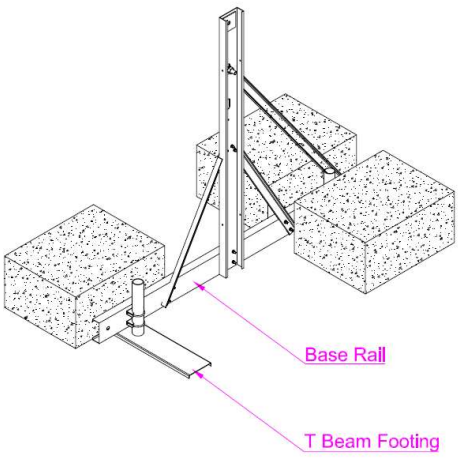
4.3.1 STEP-1:

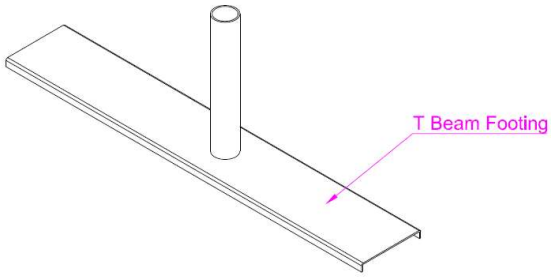
The Pion Power PVSolver Adjustable Ground Mount Solar Racking System can be installed on either helical pile foundations or cast/ballasted concrete foundations. This installation manual covers only the most basic preparation steps for helical pile and ballasted concrete foundations.

For helical pile foundations, ensure that the helical piles have been installed as per the layout diagram. Drive piles as accurately as is practical, then adjust to +/- ¼" of given layout. Piles need to be perpendicular to the ground. Top of piles to be close to level approx. 20" above highest grade. The distance between solar units will vary depending on the type of solar modules used.

For ballasted concrete foundations, use concrete anchors to connect the T-Beam Footings to the bottom of the concrete ballasts. Mark the placement locations as per the helical pile layout diagram. Ensure the pile of the T-beam footing sits right above the marking points.



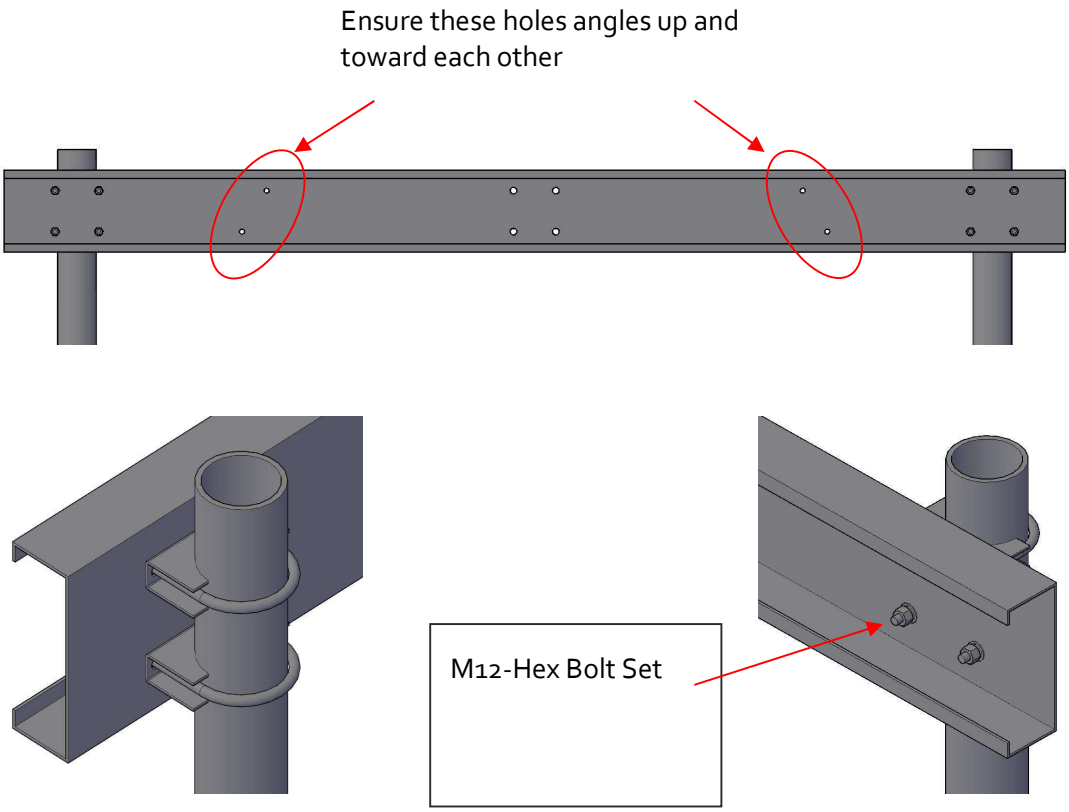


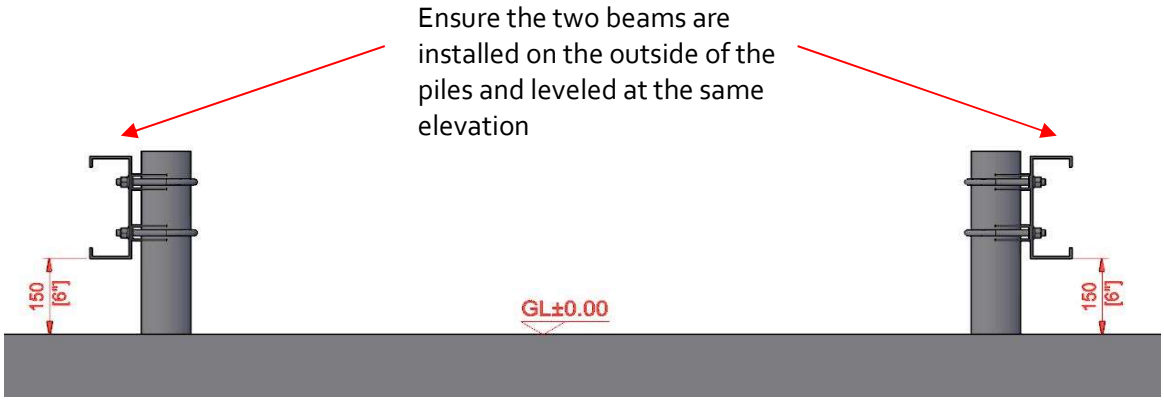


4.3.2 STEP-2:

Start building the table which is at the highest ground, ensure all Bottom Beams of the other tables are at a similar elevation to avoid shading. Attach the Bottom Beams to the helical piles or piles of the T Beam Footing using U-bolts and Saddles. A spirit level tool may be helpful when installing the beams. You may use the Rail or a long and straight object to horizontally level multiple the Bottom Beams.

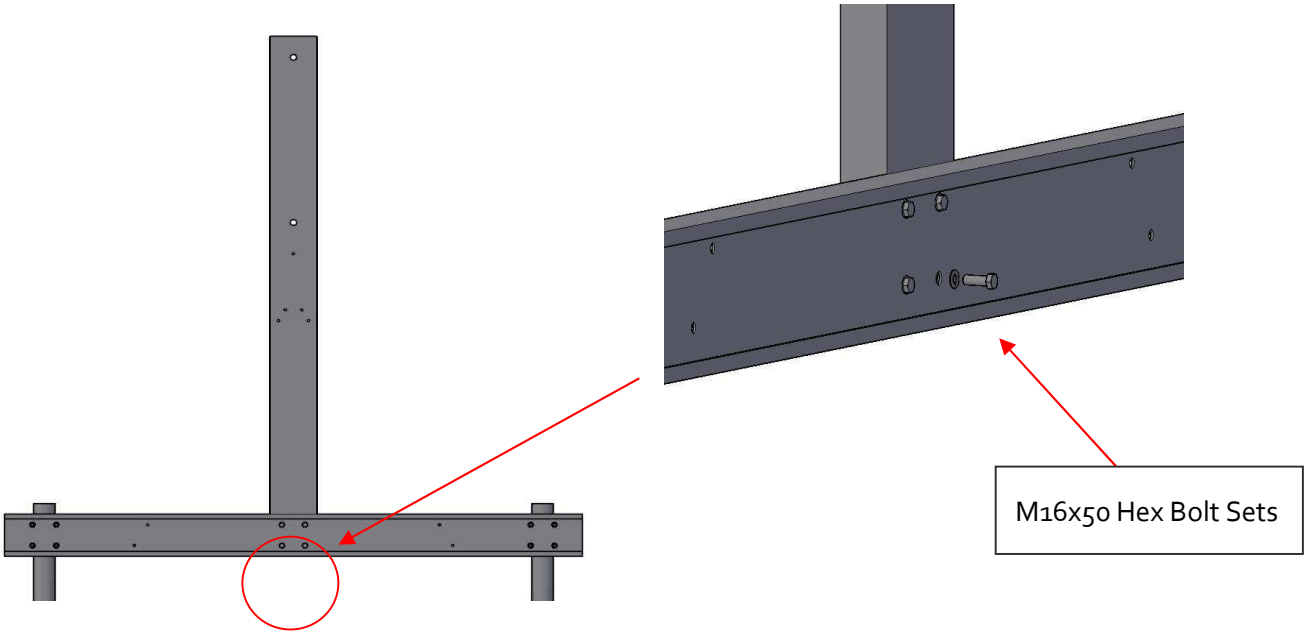
The two beams should be installed on the outside of the piles, with the flat sides facing toward each other. Ensure that the angled holes are oriented as in the picture below. Once the beams have been accurately positioned, tighten the U-bolts using M12 Hex Bolt Sets. Leave 8" of clear space under the Bottom Beam to prevent frost heave from pushing up on the beams.





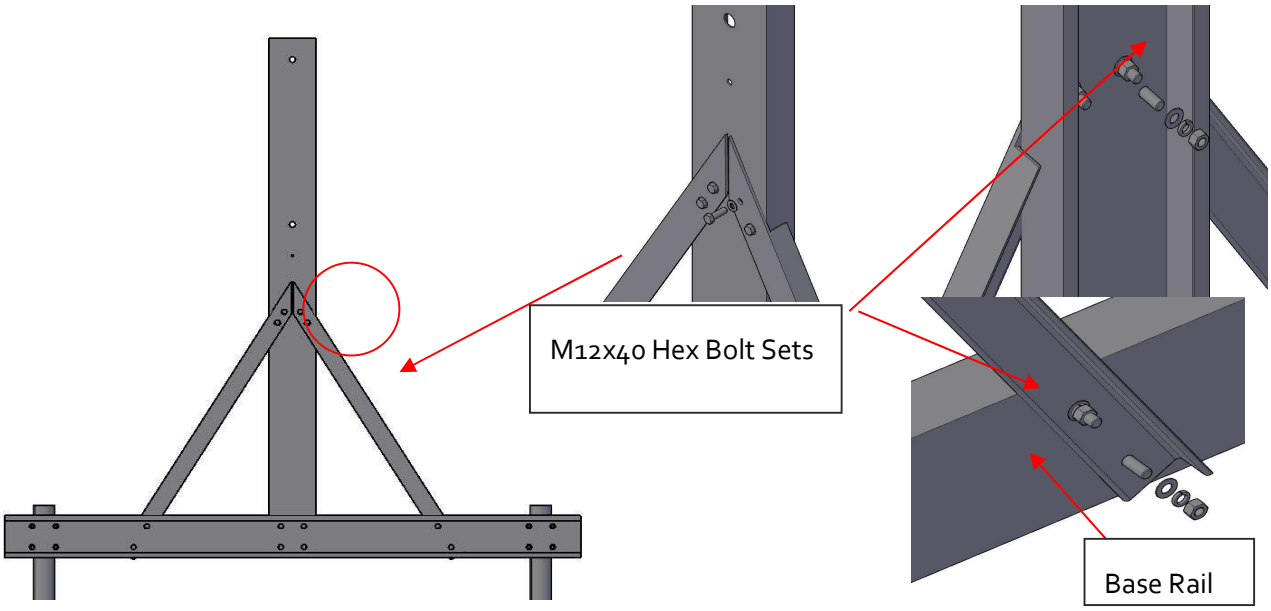
4.3.3 STEP-3:

Attach the Posts to the Bottom Beams using the M16 Helix Bolt Sets as shown. Ensuring the flat sides of the Posts go on the flat sides of the Bottom Beams. Do not tighten the bolts until the Post Supports (next step) have been installed with all their bolts loosely installed.



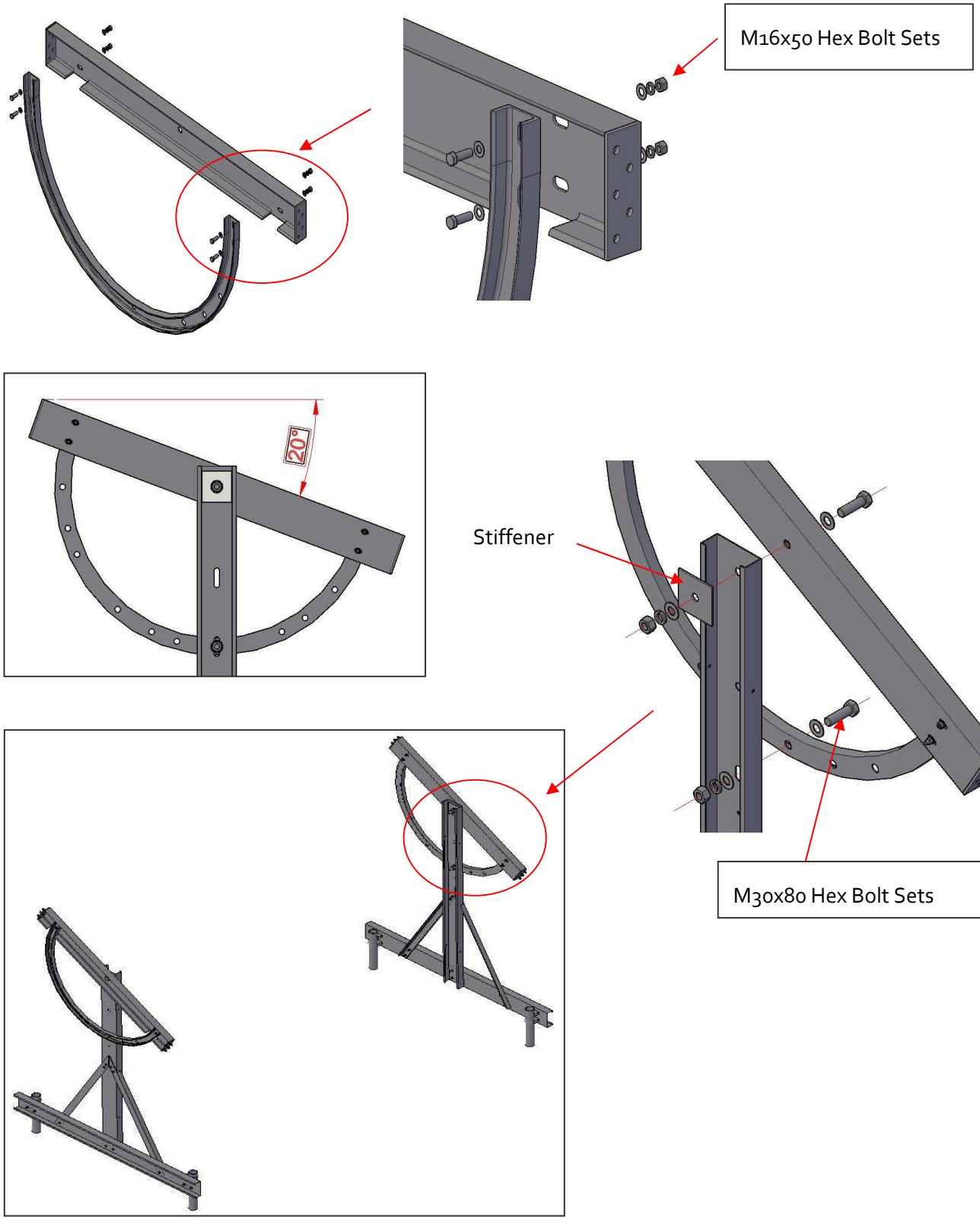
4.3.4 STEP-4:

Install the left and right Supports as shown using the M12 Helix Bolts Sets. Use a spirit level tool to ensure the Posts are vertical then tighten all bolts on the Posts and Supports.



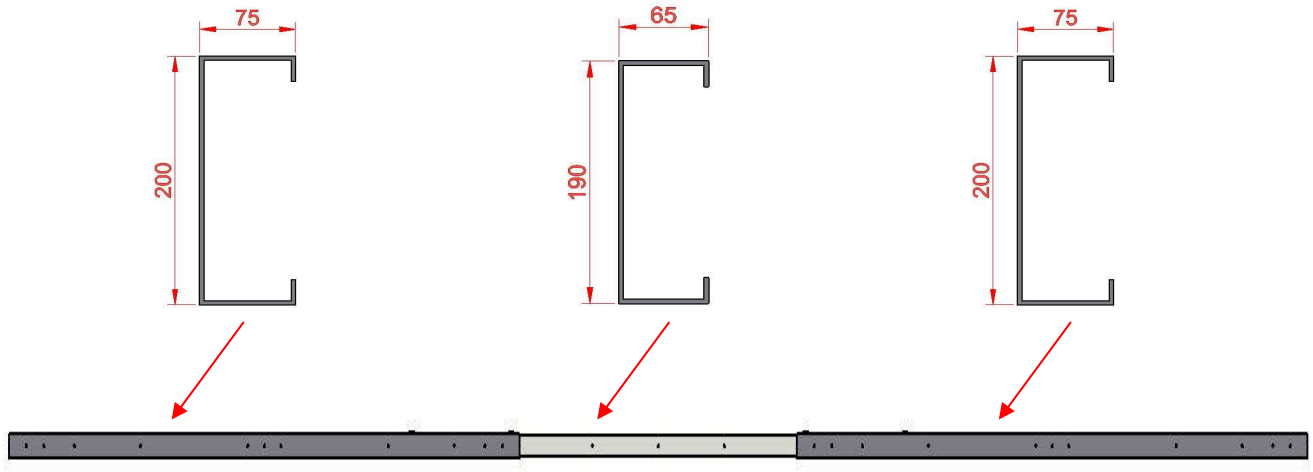
4.3.5 STEP-5:

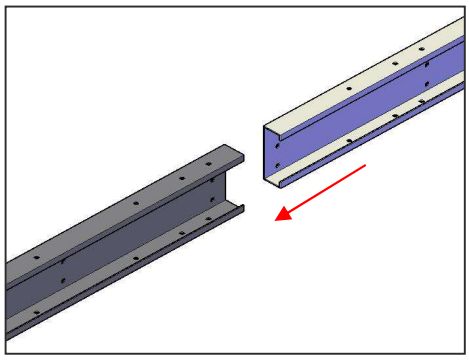
Attach the Angle Pieces to the Main Beams forming two pivot plates using M16 Hex Bolt Sets. Fix the pivot plates to the Posts using the Stiffeners and M30 Hex Bolt Sets. The plates need to be able to pivot easily around the top bolt, so do not over-tighten the top bolts. Move the pivot plates to the "Summer Position" by rotating the plate until the top flange is at 20-degree angle then tighten the bottom bolt.

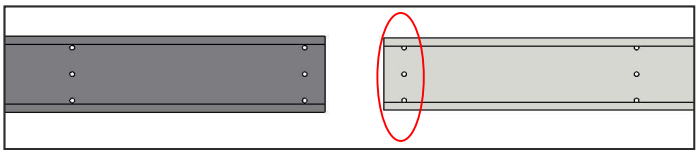


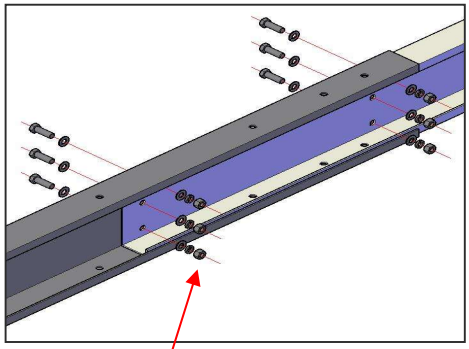
4.3.6 STEP-6:

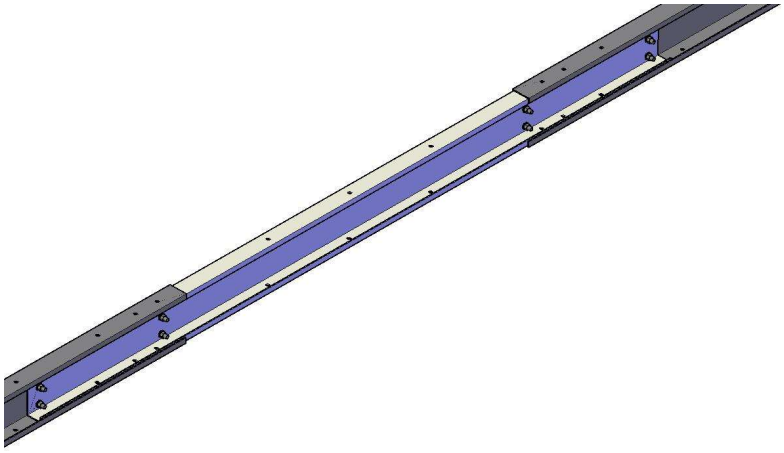
Each rail consists of two outer pieces and one inner piece. Slide rails together to where holes match up, then tighten all bolts, washers, and nuts.







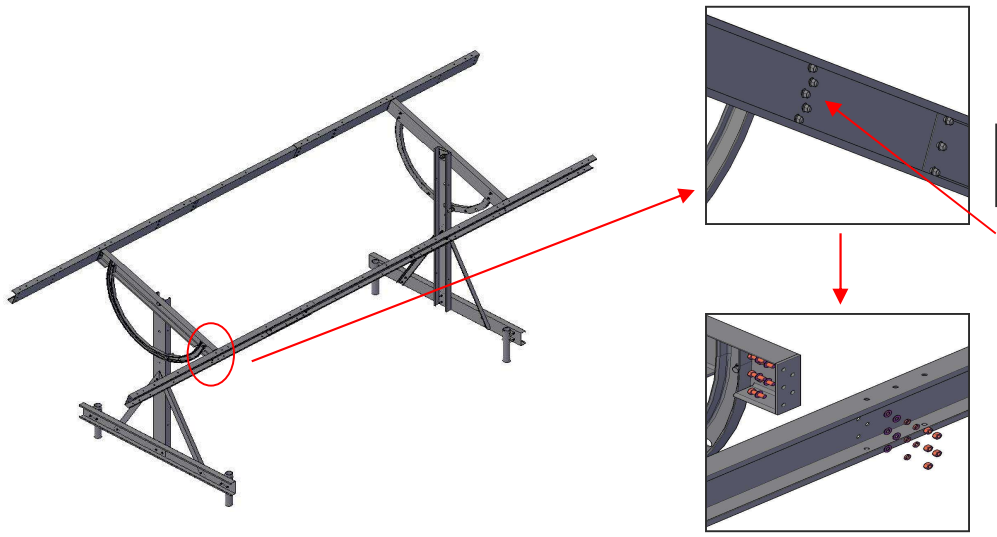




M12x40 Hex Bolt Sets

4.3.7 STEP-7:

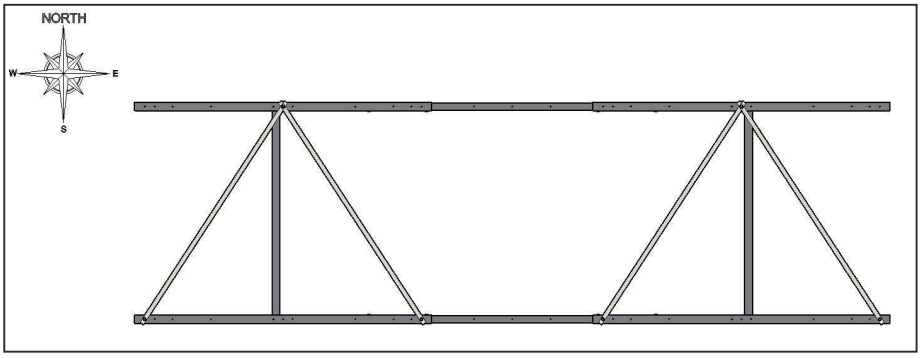
Install the Rails to the pivot plates. Ensure that the flat sides of the Rails go on the Main Beams. Loosely attach the M12 bolts on one end, then lift the other end and install all remaining bolts. Do not fasten the bolts until both Rails are in place. Once all bolts are in place, you may finish tightening them.



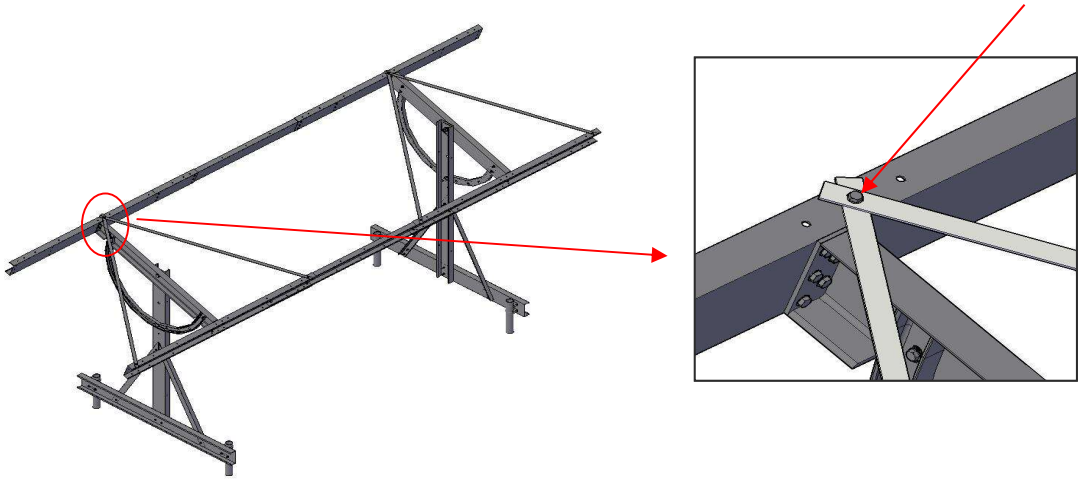
M12x40 Hex Bolt Sets

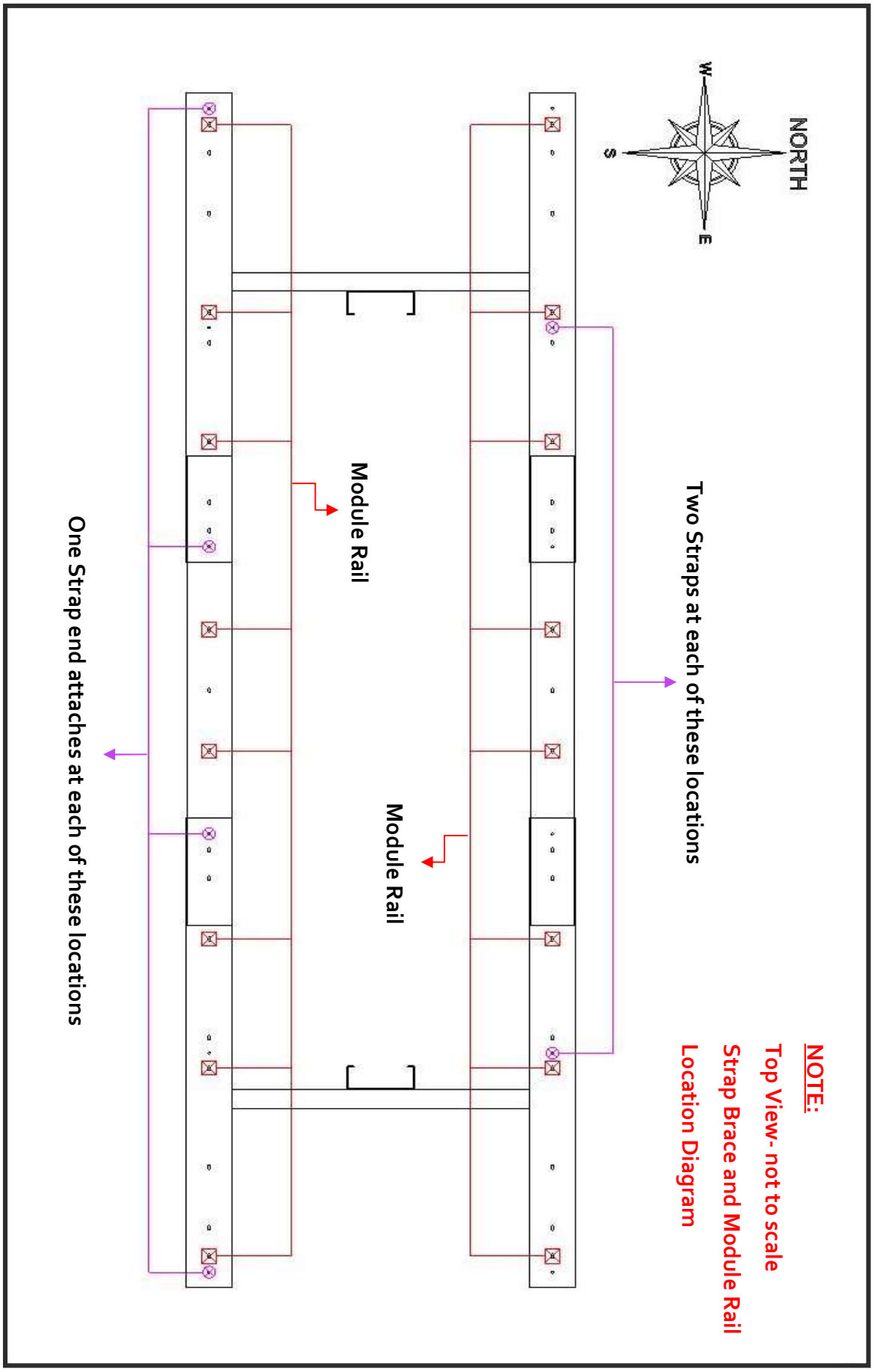
4.3.8 STEP-8:

Refer to page 12, fix the Tie Bars on the Rails. Tighten the Brace on the north Rail first and then tighten the Brace on the south Rail.



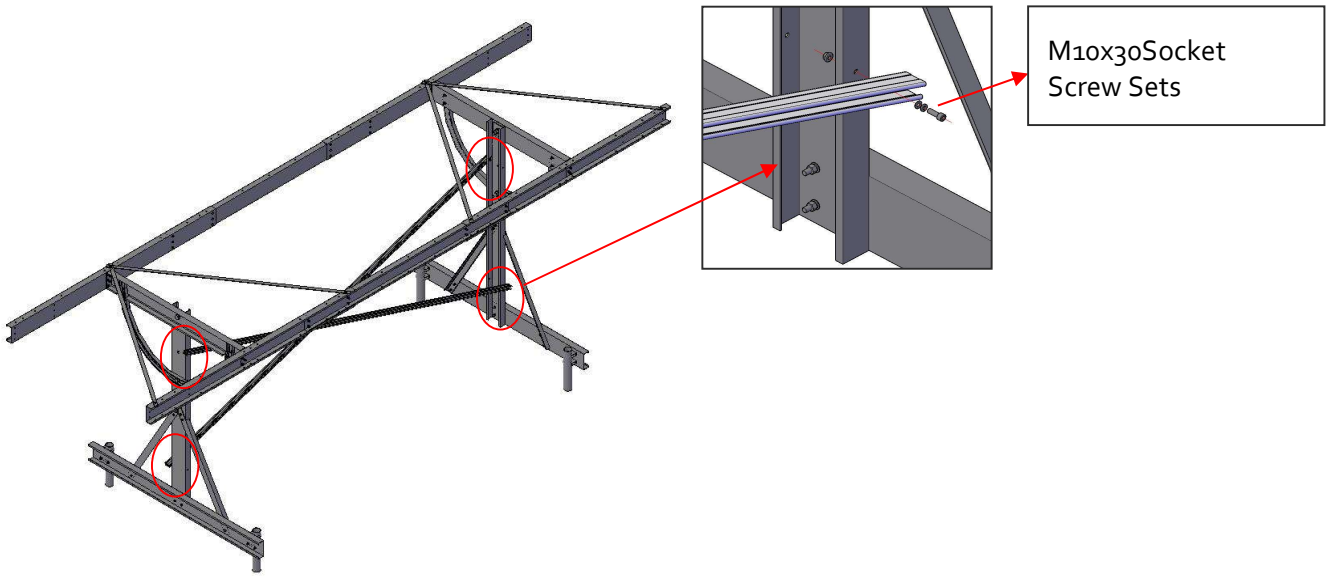
M12x40 Hex Bolt Sets





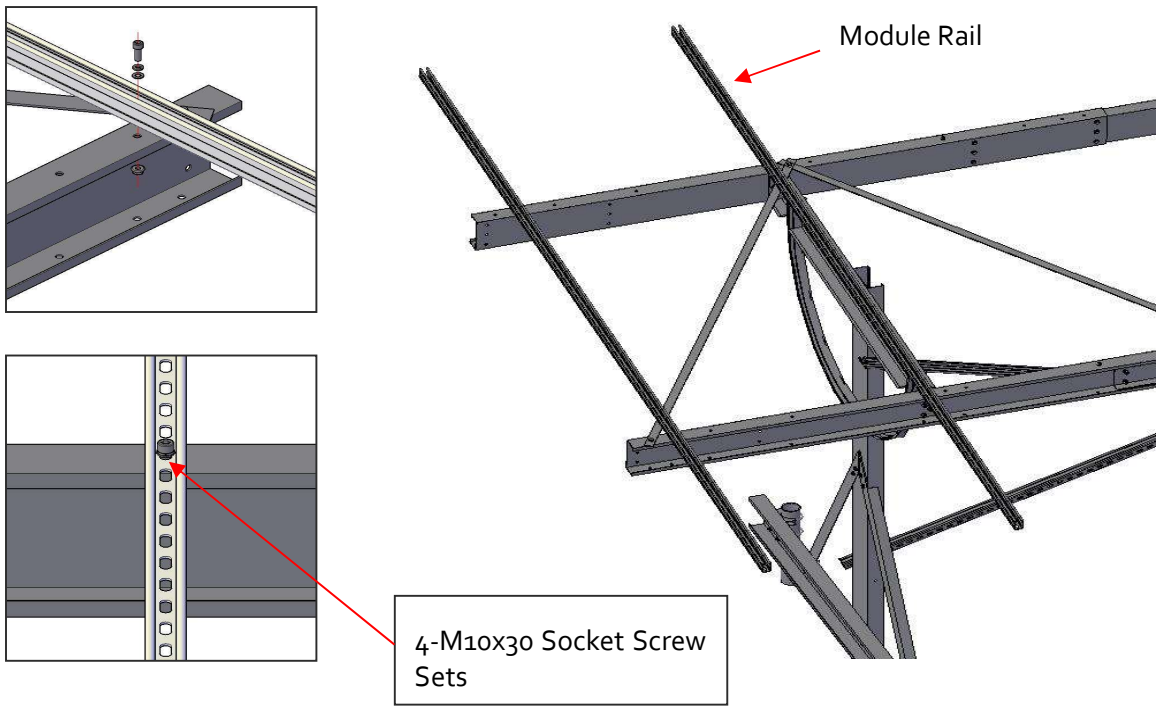
4.3.9 STEP-9:

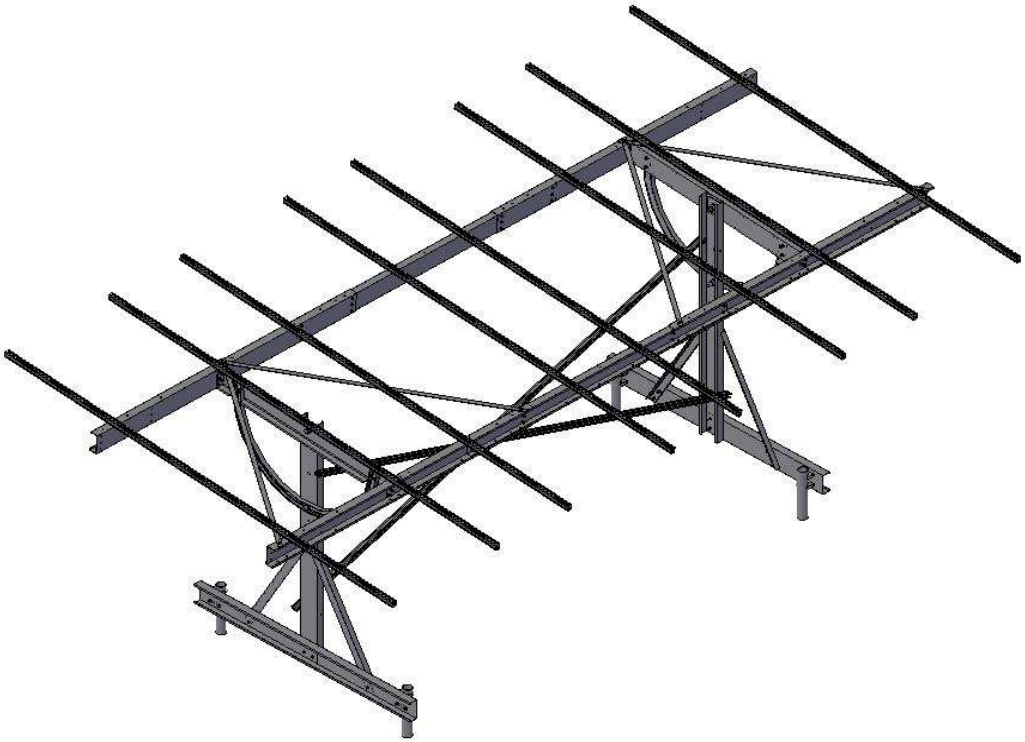
Install the Post Braces on the Posts as shown using M10 Socket Screw Sets.

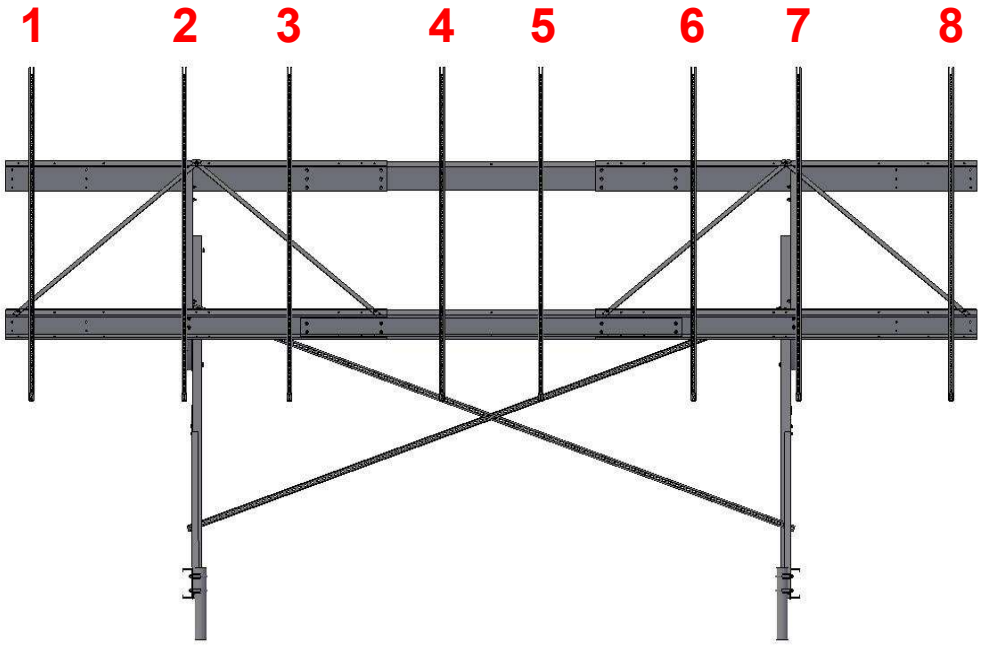


4.3.10 STEP-10:

Refer to Appendix A for installation of Module Rails. The mounting points varies depend on the type of solar module are using. A 16-module table needs 8 Modules Rails.



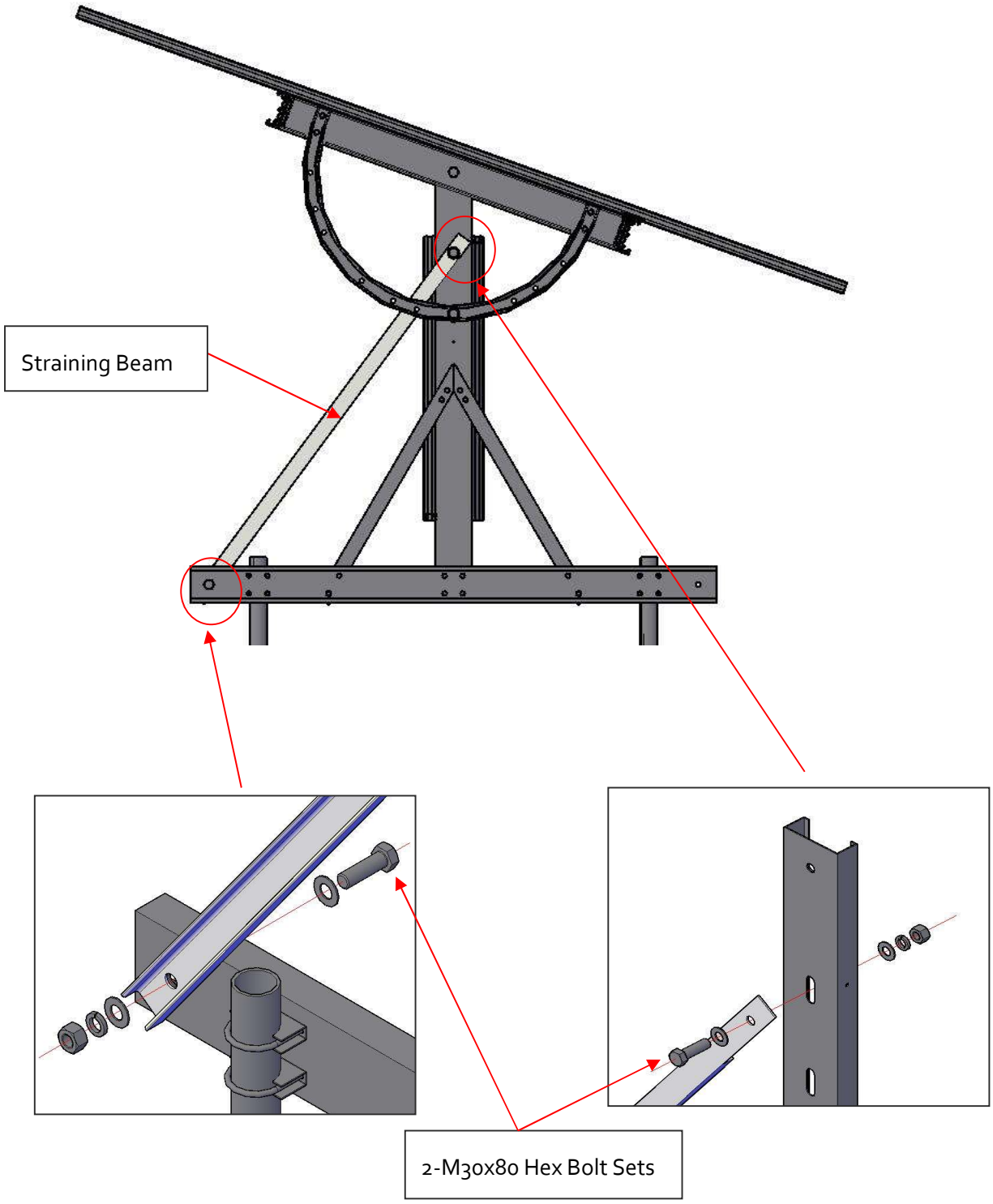




4.3.11 STEP-11(OPTIONAL):

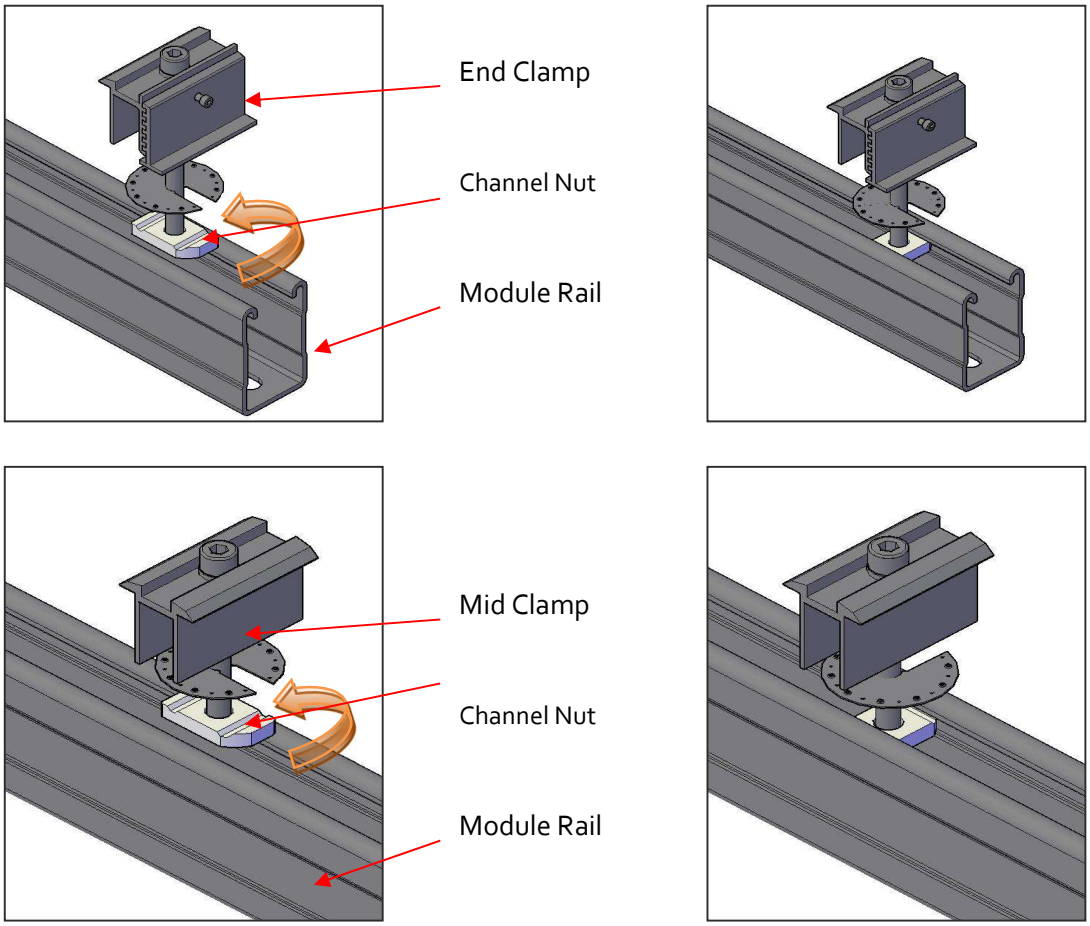
Install the optional Straining Beams if the system is being installed at a high wind location. The Straining Beams need to be installed on the North side of the table to provide proper high wind support.

Note: The Straining Beams have a left and a right piece. They must be at their own locations.



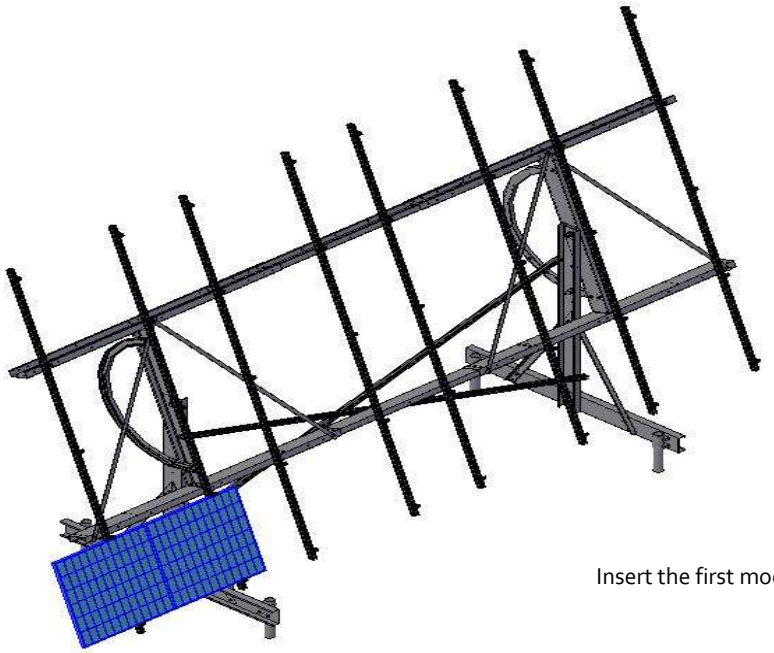
4.3.12 STEP-12:

Install the Adjustable Module Clamps as shown. Insert the channel nut into the Module Rail and turn 90 degrees to secure the clamps, then tighten the Module Clamps.

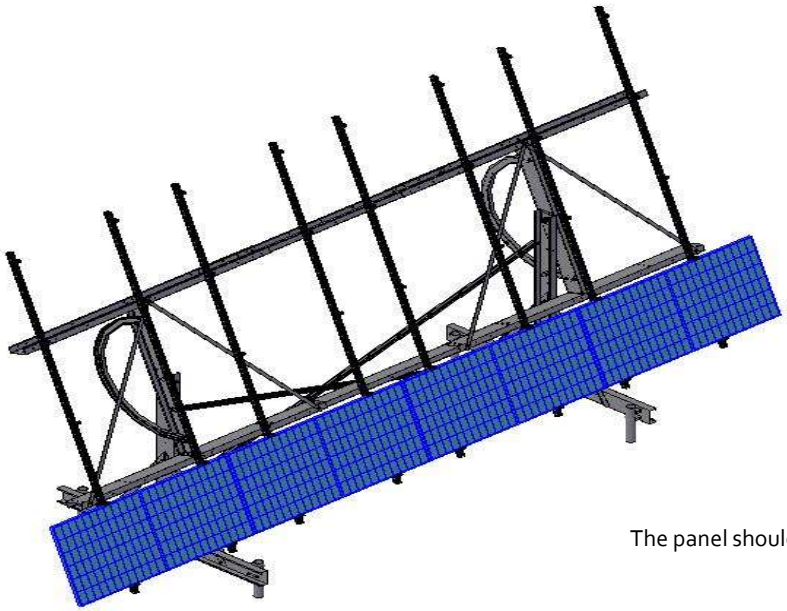


Please refer to Appendix A before installing the modules. Look for the module model that will be used or comparable modules with same dimensions. If you cannot find the module model you are installing, please contact your distributor for help.

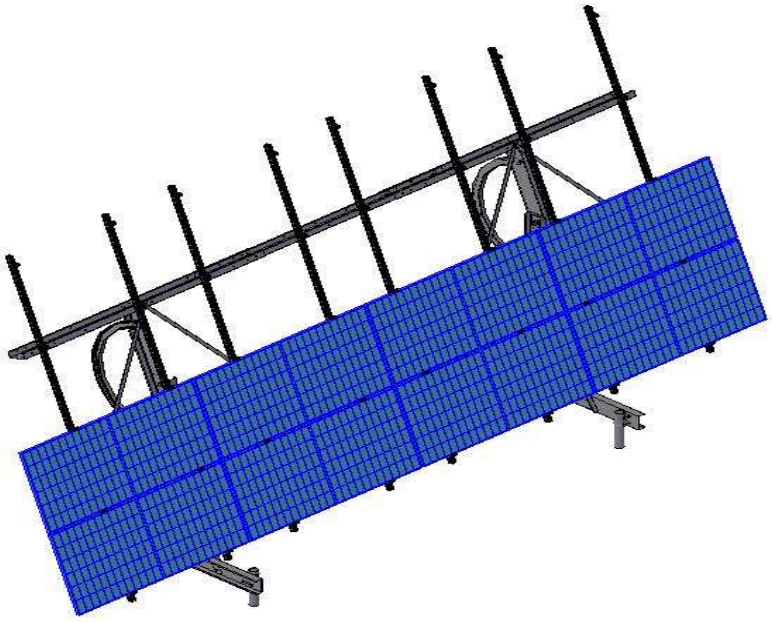
Mark the mounting points for End Clamps at the bottom (south) row, use a spirit level tool and a thread to ensure all modules will be installed leveled. Start installing the first module from the far left or far right then moving towards the other end.



Insert the first module into place at the left end of the rack.

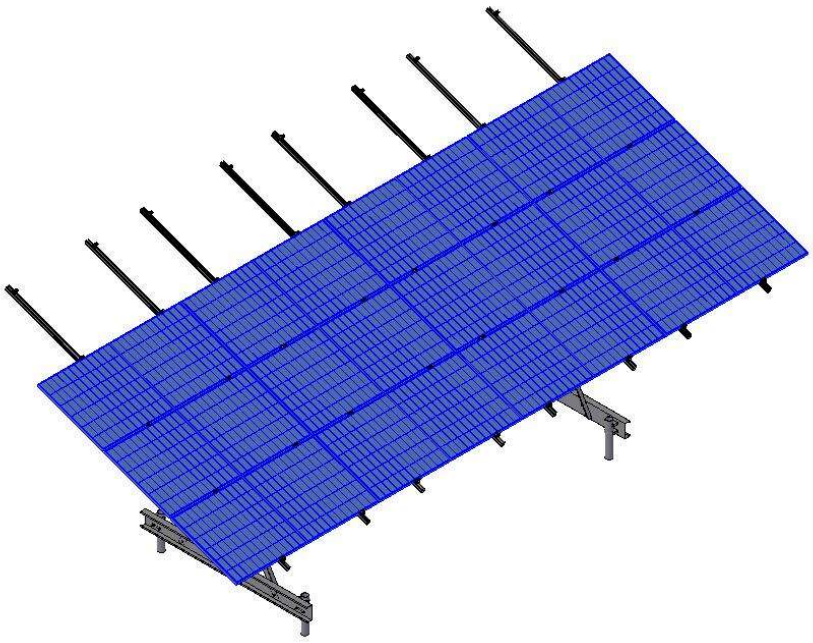


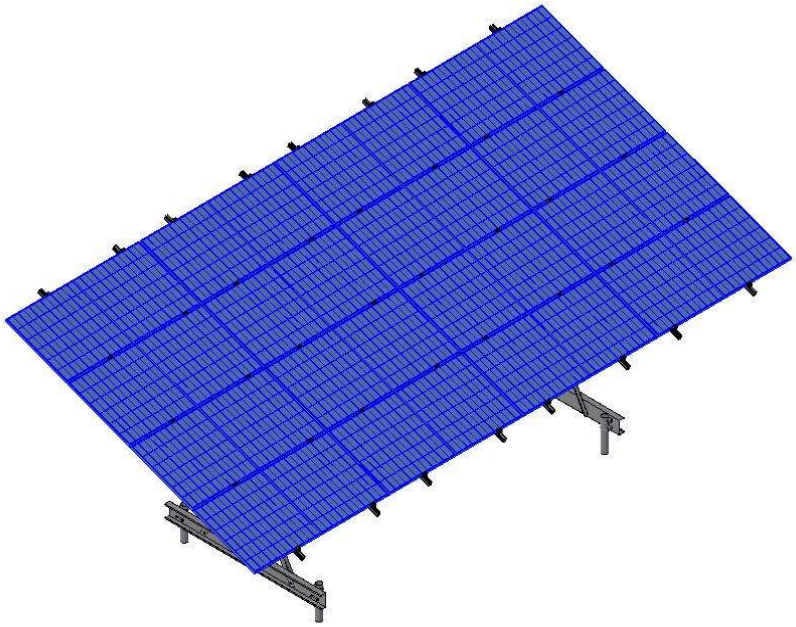
The panel should be in landscape position.



Suggestions:

1. Turn the table to 70° (winter position) when installing the south two rows of panels;
2. Once the second row of panels is installed, use straps and pullies to pull the system into the "Summer Position" and secure it with a bolt in the summer position.
3. If you have access to a manlift, it's best to keep the rack in the winter position as you install the panels. Install the solar panels row by row.

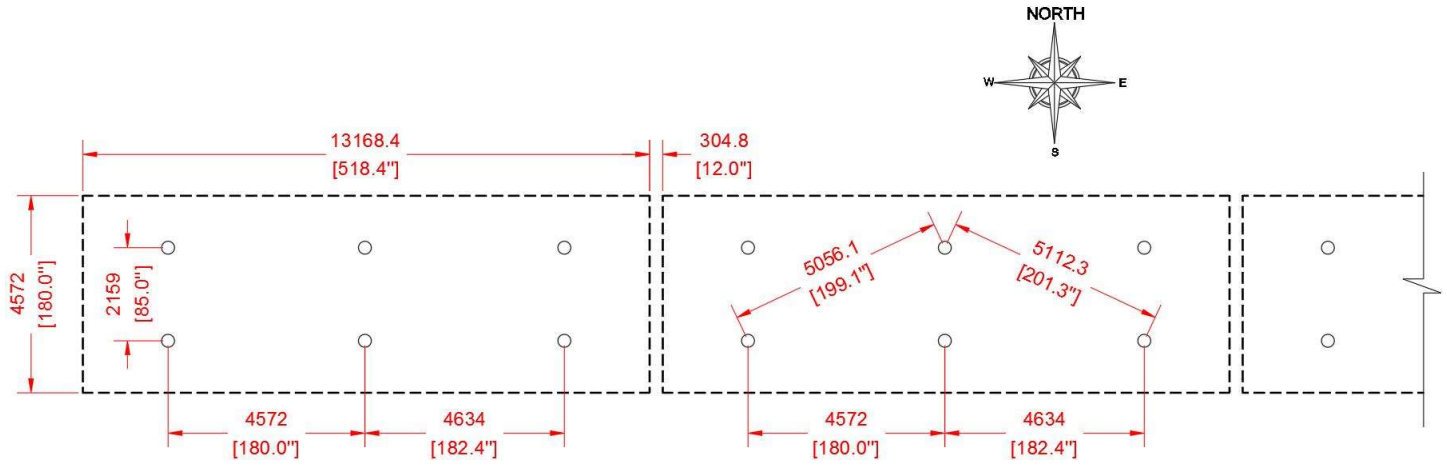




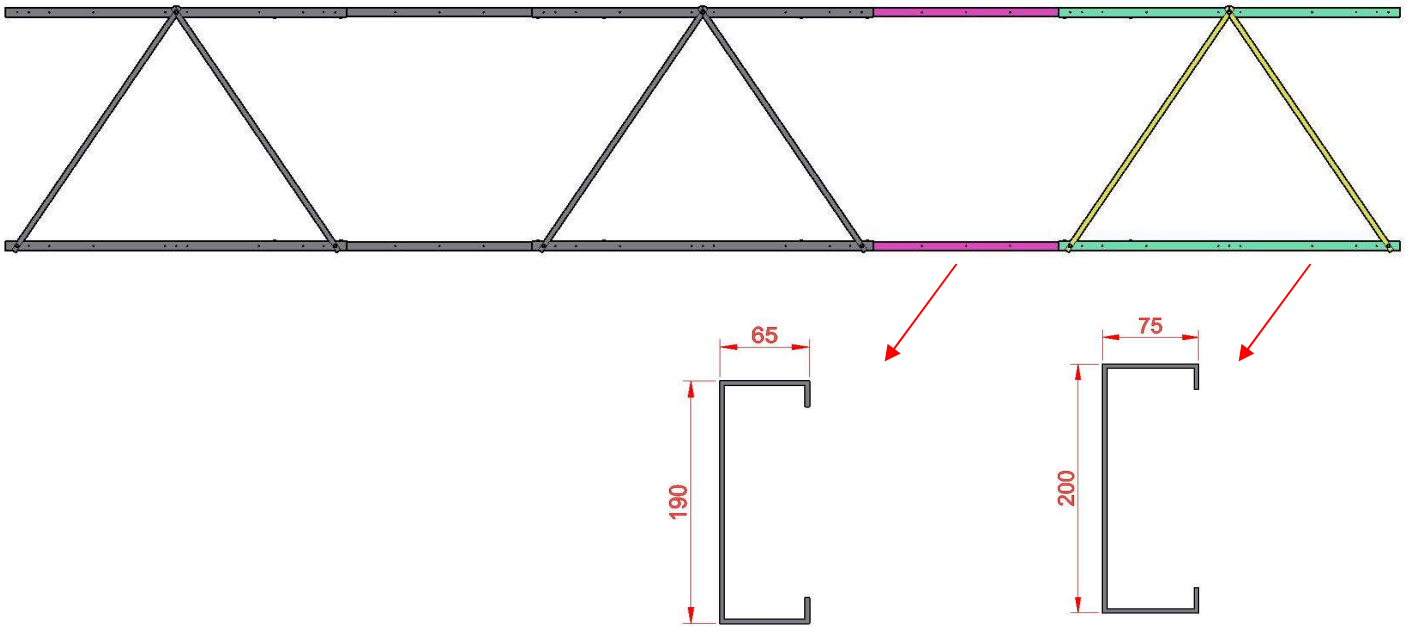
4.3.13 REMARK

The table could also be expanded to accommodate a 24-modules setup.

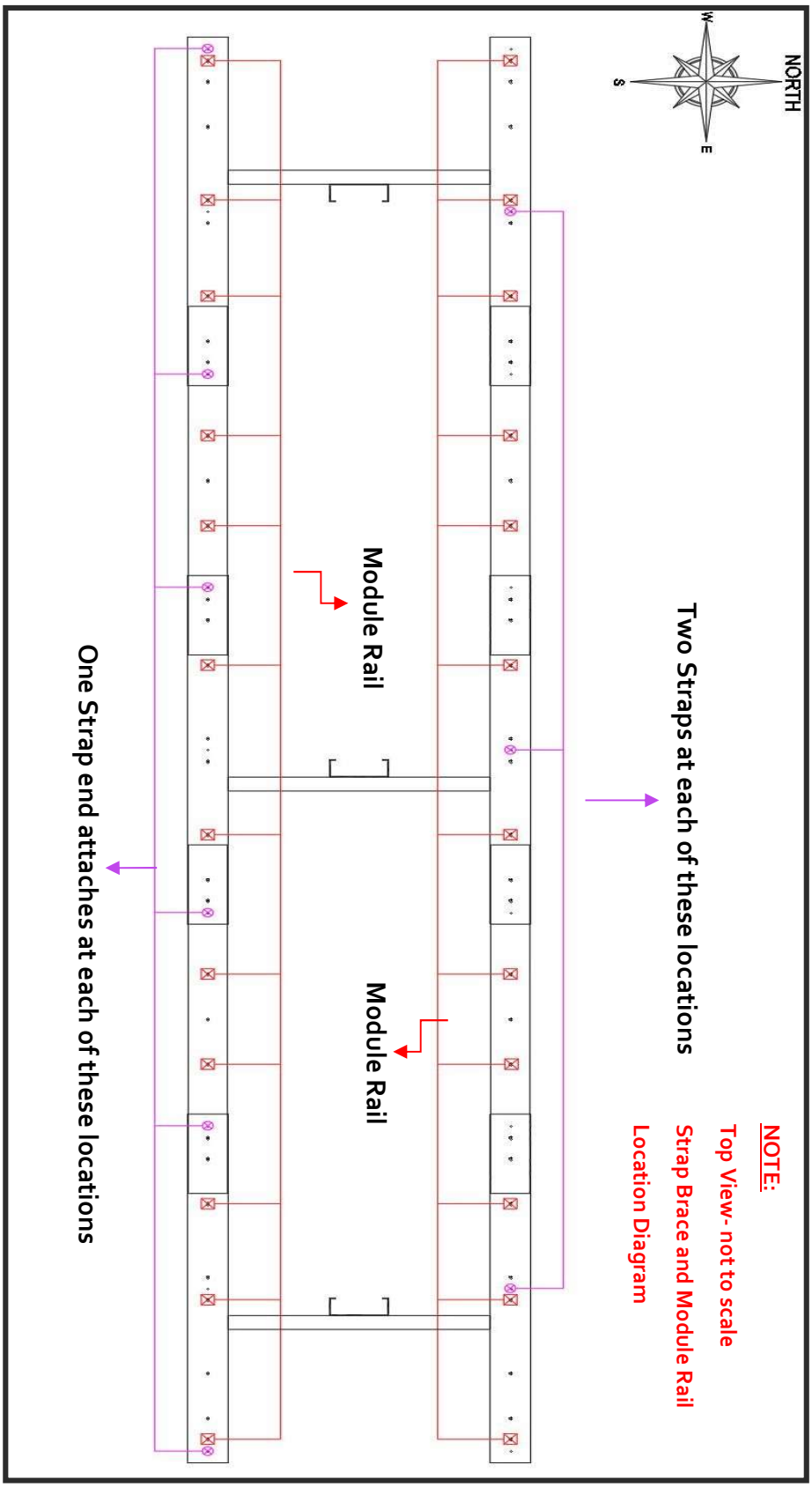
1. Changes to helical pier layout when installing 24 modules:



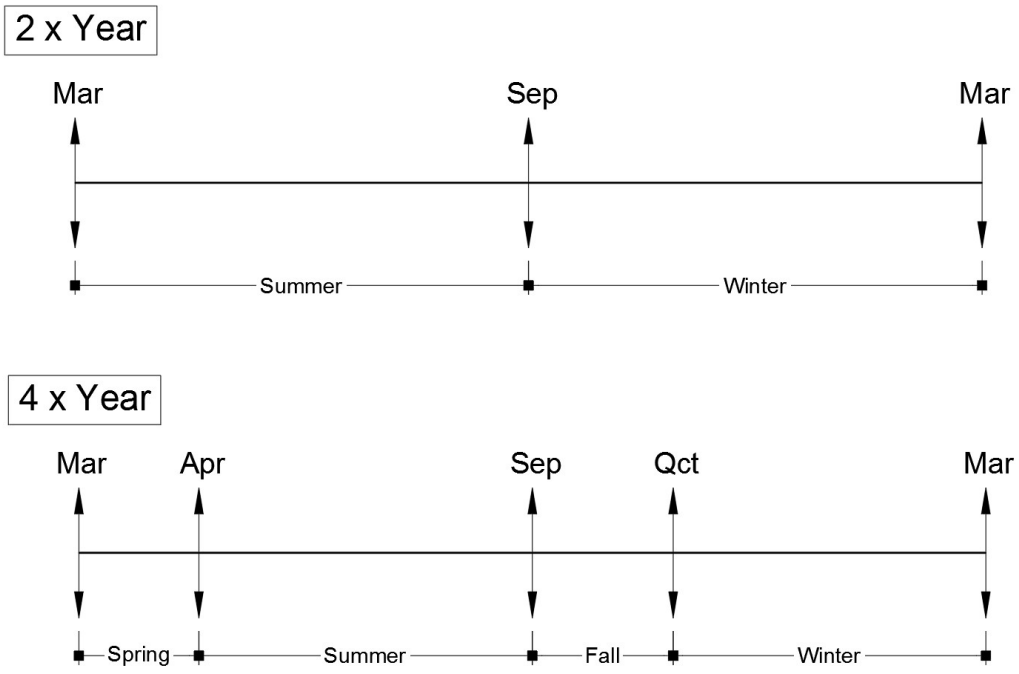
2. Please refer to the below illustration for expanding the table to 24-module setup
   Please refer to step 6 for installing additional Rails
   Please refer to step 8 for installing additional Tie Bars

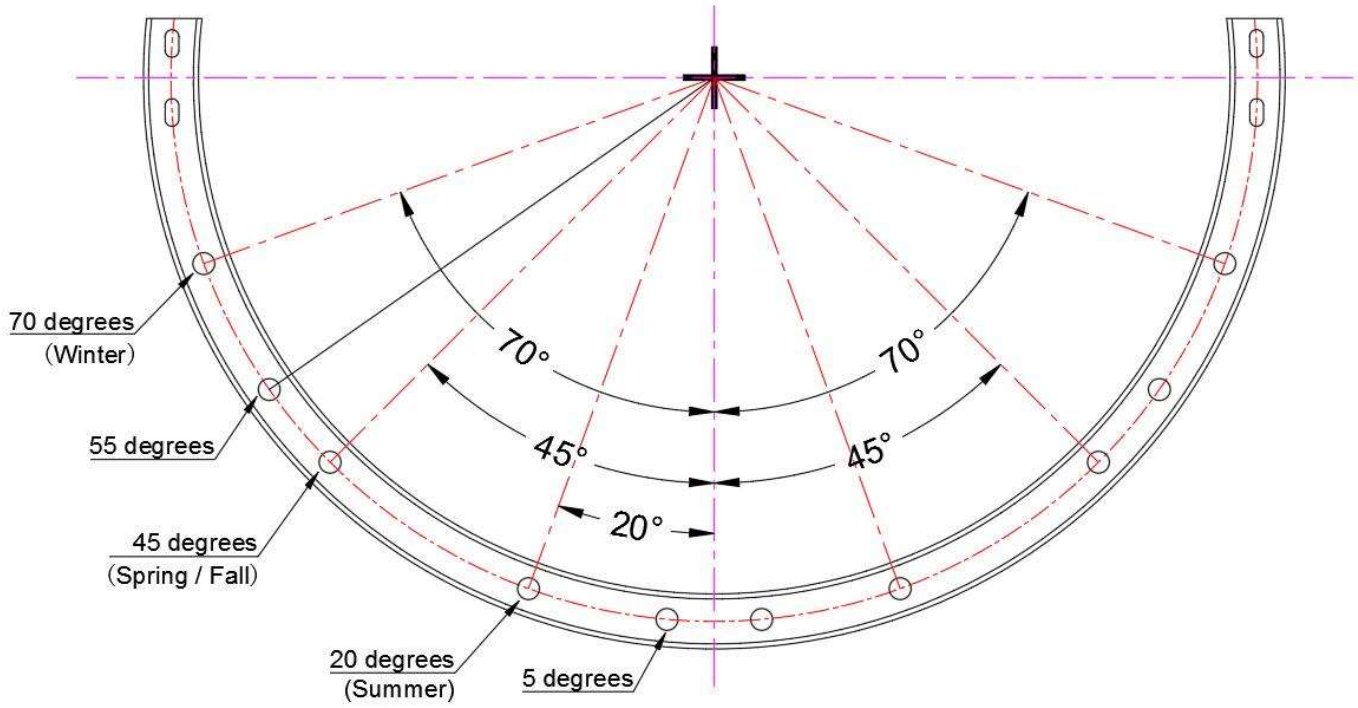


3. More Modules Rails are also required when expanding the table to a 24-module setup, please refer to the below illustration for module rail mounting locations.
(The below mounting location map is for reference only, and is based on 2132x1048x30mm module size. Please adjust the mounting locations accordingly based on the modules used)

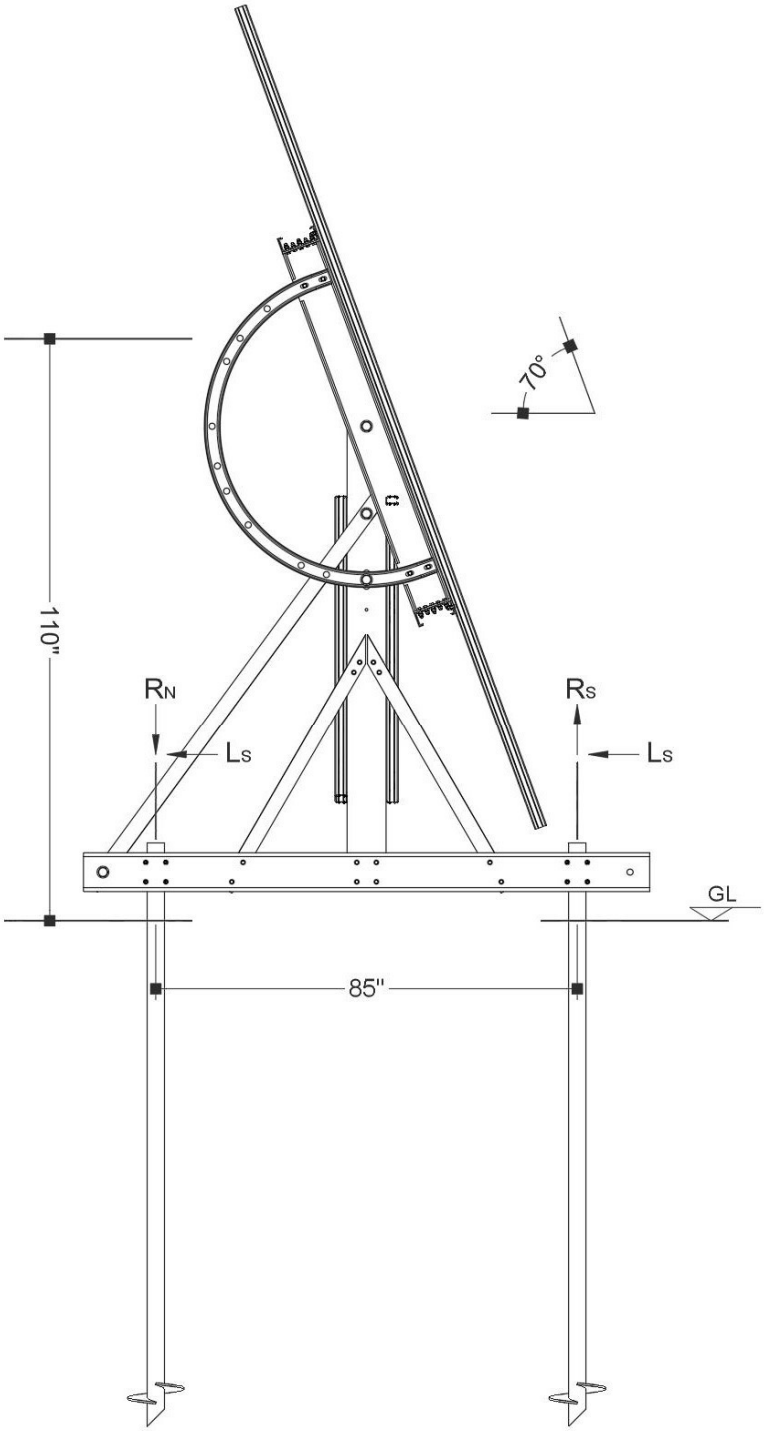


5 Seasonal Adjustment Dates





6 Foundation Loads



HourlyWind Press $q^{1}/_{50}$ (kpa)	equiv. Vel. (kph)	Unfactored Vert.Resist. per anchor (+/- lbf)	Unfactored Lat. Resist. per anchor (+/- lbf)
0.3	79	1800	660
0.35	85	2150	760
0.4	91	2510	880
0.45	96	2900	970
0.5	102	3220	1080
0.55	106	3560	1190
0.6	111	3930	1320
0.65	116	4280	1420
0.7	120	4650	1550
0.75	125	5000	1650
0.8	129	5350	1740
0.85	132	5710	1840
0.9	137	6060	1950

Foundation requirements will vary bylocation and soil condition. Verify foundation type and capacity by a qualifiedfoundation professional or installer.

6.1.1 FINAL INSPECTION

1. Rack height alignment (after 4.4.2).

Requirement: Make sure all the rails in the same horizontal level. No obvious rail arrays embossment or sink

2. Solar panels position alignment(after 4.4.4)

Requirement: Make sure all the solar panels (in same row) edges are in line. No obvious curve appears.

3. Tightening bolts & torque check(after 4.4.4)

Requirement: Make sure all the bolts and screws are tightened with recommended force. No loosen is allowed.

- **Socket screw for rapid 2+ module clamps is 14 NM**
- **M10 screw torque is 45 NM**
- **M12 screw torque is 90 NM**
- **M16 screw torque is 220 NM**
- **M30 screw "Turn of the Nut" method: One-third turn past snug (mating members tight together).**

7 Warranties

7.1 10 YEARS LIMITED PRODUCT WARRANTY- GROUND MOUNT RACKING SYSTEM

Pion Power Inc. warrants to the original purchaser ("Purchaser") of product(s) that it manufactures ("Product") at the original installation site that the Product shall be free from defects in material and workmanship for a period of ten (10) years, from the earlier of 1) the date the installation of the Product is completed, or 2) 30 days after the purchase of the Product by the original Purchaser. This Warranty does not cover i. damage to the Product that occurs during its shipment, storage, or installation. ii. Naturally occurring degradation of Materials due to normal wear and tear; iii. Force Majeure including but not limited to power surges caused by direct or indirect lightning strike, damage caused by flood, vandalism, theft, wind, and similar causes. iv. Failure or damage caused by wind loads or snow loads in excess of the loads indicated on the product specification sheet. v. Labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either failed parts, or replacement parts.
This Warranty shall be VOID if installation of the Product is not performed in accordance with Pion Power Inc. written installation instructions, or if the Product has been modified, repaired, or reworked in a manner not previously authorized by Pion Power Inc. in writing, or if the Product is installed in an environment for which it was not designed. Pion Power Inc. shall not be liable for consequential, contingent or incidental damages arising out of the use of the Product by the Purchaser under any circumstances. If within the specified Warranty period the Product shall be reasonably proven to be defective, then Pion Power Inc. shall repair or replace the defective Product, or any part thereof, in Pion Power Inc. sole discretion. Such repair or replacement shall completely satisfy and discharge all of Pion Power Inc. liability with respect to this limited Warranty. Under no circumstances shall Pion Power Inc. be liable for special, indirect or consequential damages arising out of or related to use by Purchaser of the Product. Manufacturers of related items may provide written warranties of their own. Pion Power Inc. limited Warranty covers only its Product, and not any related items.

7.2 WARRANTY SERVICE CONTACT

Polaron Solartech Corp
3761 Victoria Park Avenue, Unit 9, Scarborough Ontario M1W 3S2
Tel: +1 647-557-1207
Fax: +1 905-415-2797
E-mail: info@polaronsolar.com

Web: www.polaronsolar.com

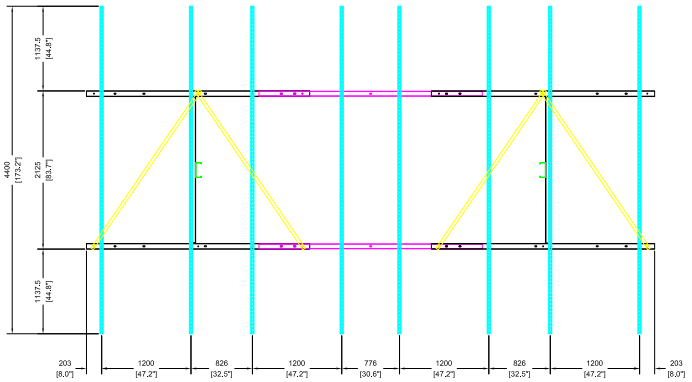
7.3 WARNING

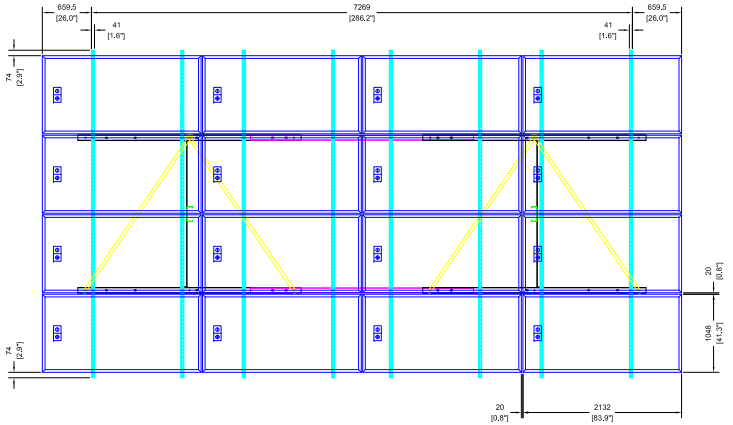
1. Failure to follow the instructions of the manual may void equipment warranties.
2. Failure to observe these instructions may cause product damage that cannot be attributed to the Manufacturer.
3. The manufacturer cannot be held liable for any product damage caused by improper use.

Appendix A

PV Module : 2132x1048x30mm

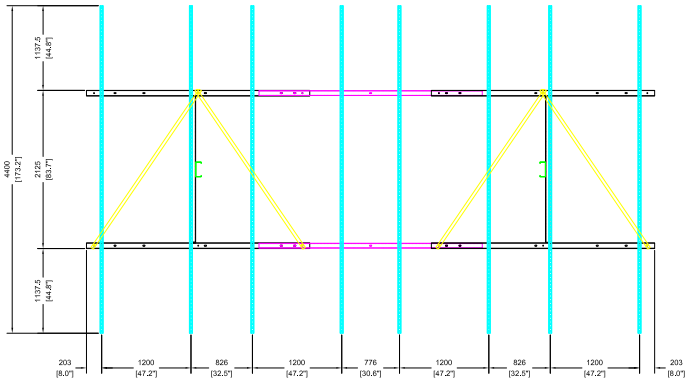
Canadian_Solar-Datasheet-BiHiKu_CS3W-PB-AG_High-Efficiency_1000V1500V /CS3W-MB-AG

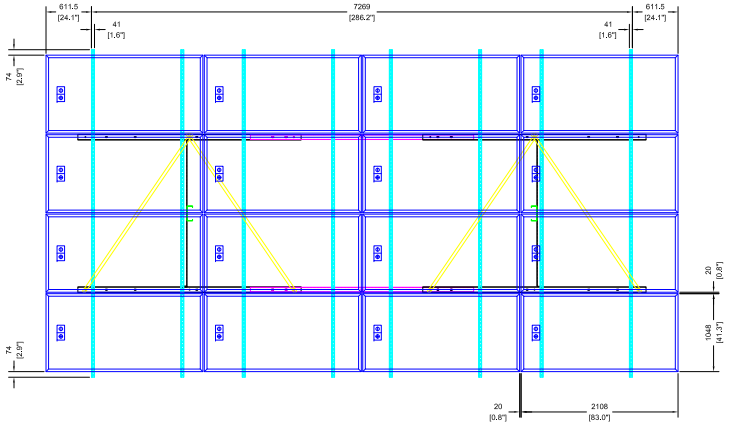




PV Module : 2108x1048x40mm

Canadian_Solar-Datasheet-HiKu_CS3W-P_High Efficiency_(1000V&1500V) CS3W-MS





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

		DATE
APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

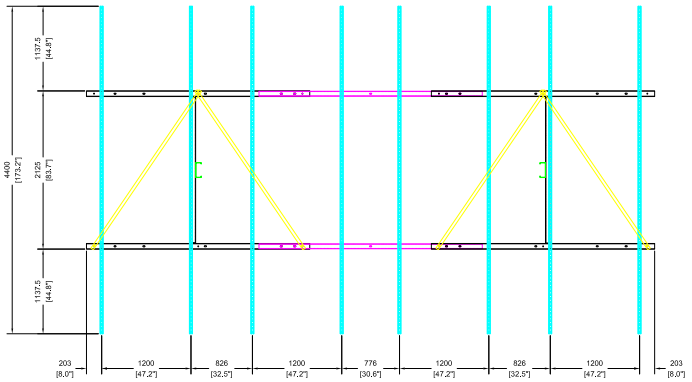
DRAWING No.

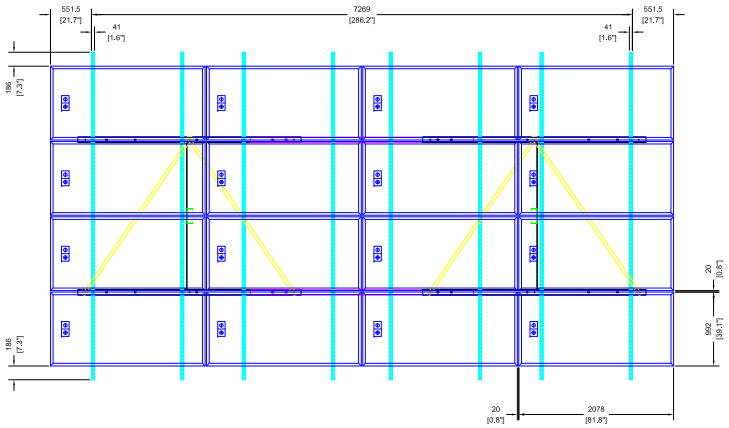
D 1.1

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 2078x992x35mm

Canadian_Solar-Datasheet-HiDM_CS1U-MS

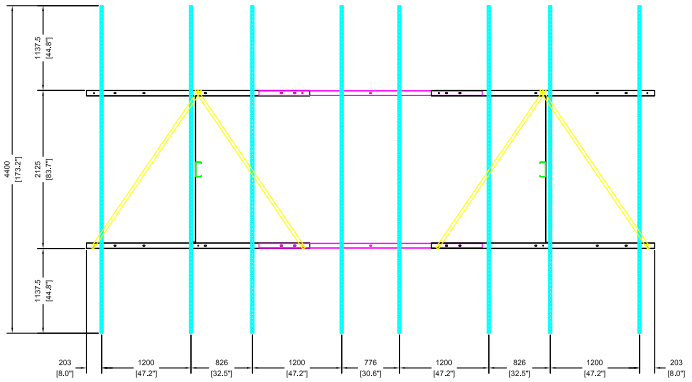


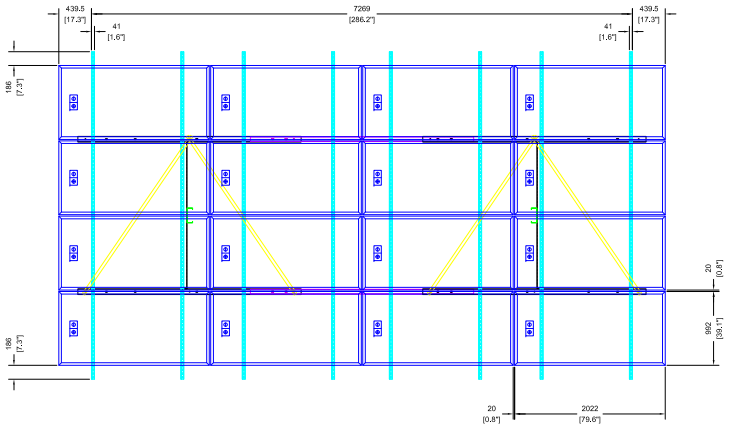


PV Module : 2022x992x30mm

Canadian_CS3U-385MB-AG Bifacial

Canadian_Solar-Datasheet-BiKu_CS3U-PB-AG_High-Efficiency





REVISION

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REV-1

- [ ] Approved
- [ ] Approved with comments
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PROJECT

【GS-03】
Solar Mounting System

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APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

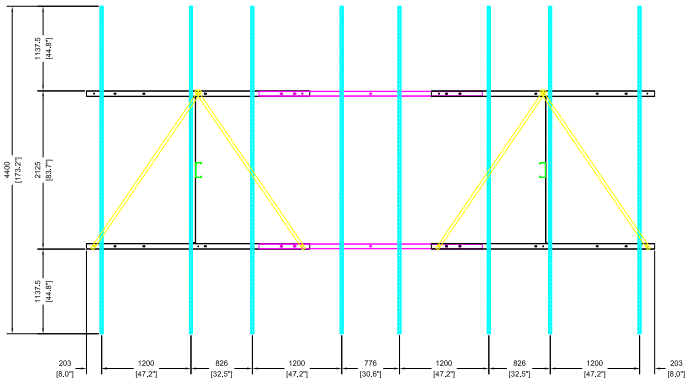
DRAWING TITLE

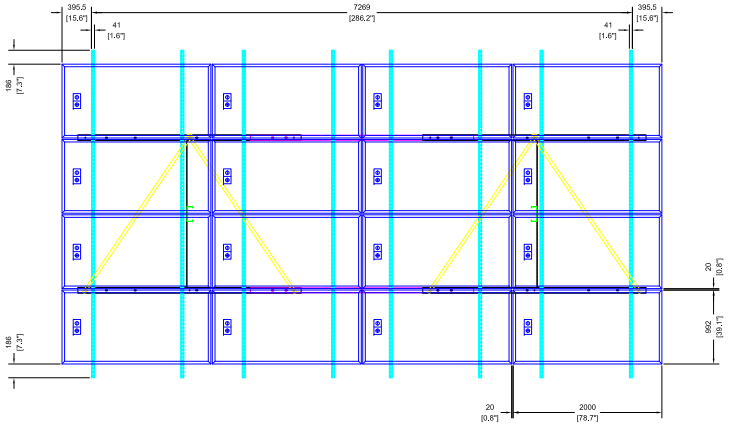
DRAWING No.

D 1.2

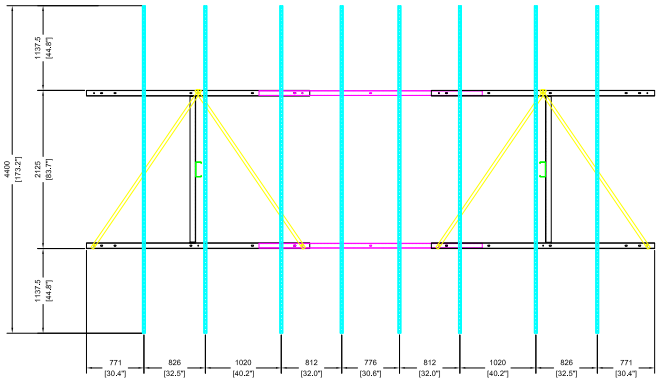
STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

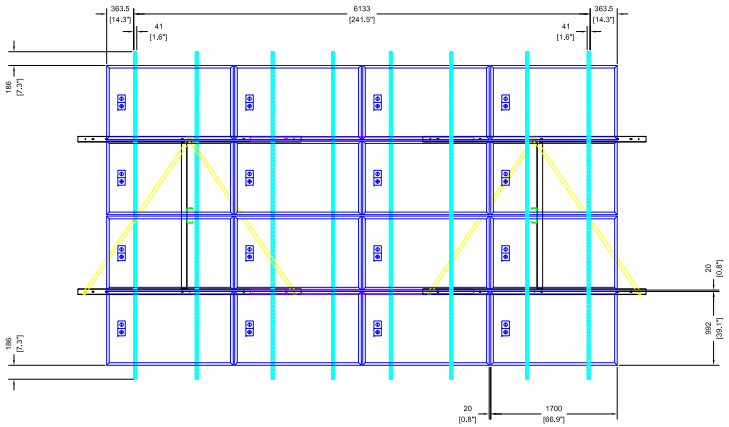
PV Module : 2000x992x35mm	Canadian_Solar-Datasheet-KuMax_CS3U-P_High-Efficiency
	CS-Datasheet-KuMax(MBB&5BB)_CS3U-MS_v5.582_J1_NA (F16)





PV Module : 1700x992x35mm	CS_Datasheet_HiDM_CS1H-MS





REVISION

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Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

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CHECKED BY	L.Z	DATE
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DRAWING TITLE

DRAWING No.	STATUS	Designed
D 1.3	DISCIPINE	
	SCALE	
	DATE	06-01-2021

PV Module : 2015x1000x35mm	Hanwha_Q_CELLS_Data_sheet_QPEAK_DUO_L-G5.2_380-395
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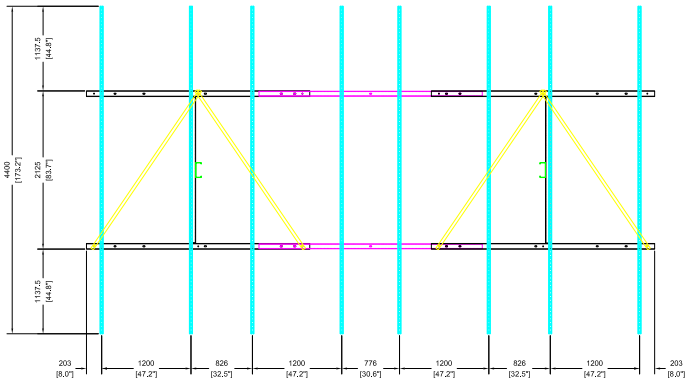

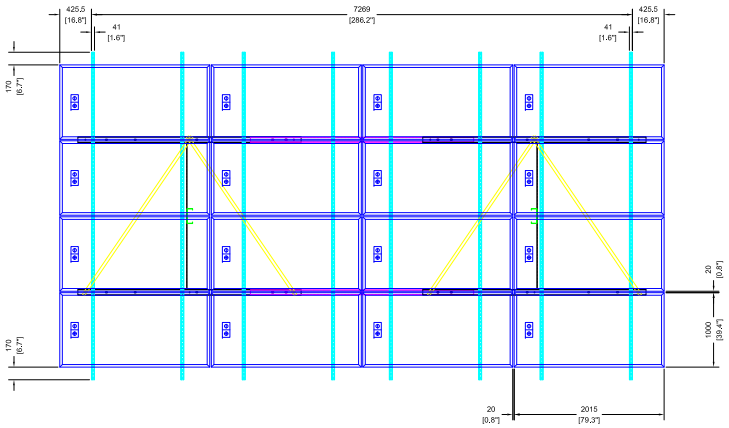

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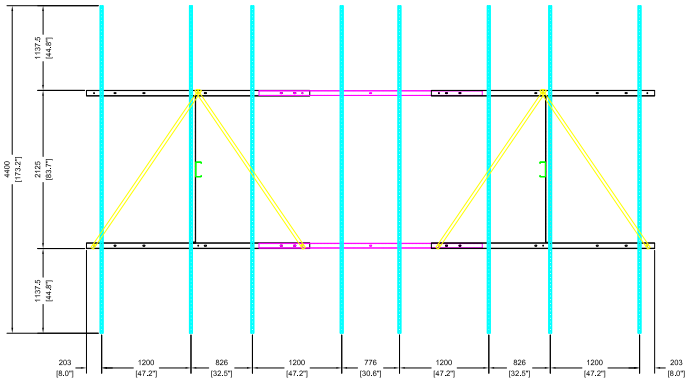

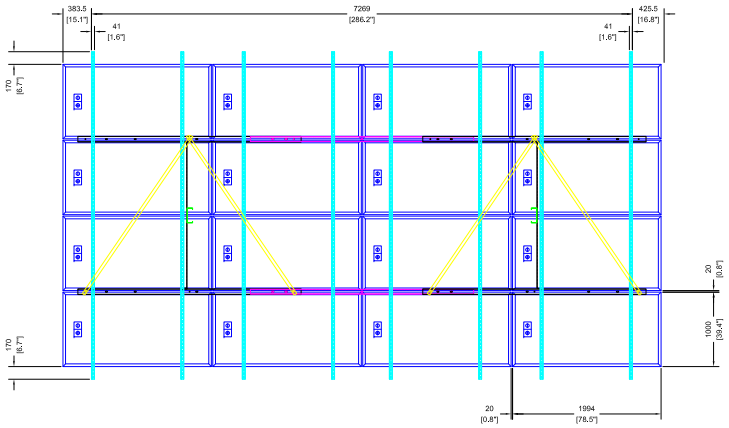

REVISION

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REV-1

- [ ] Approved
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AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

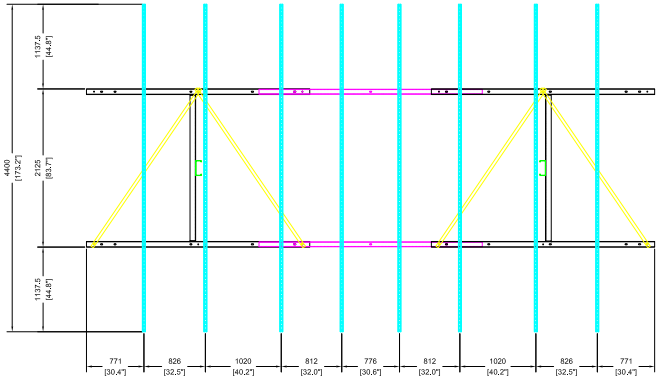
DRAWING TITLE

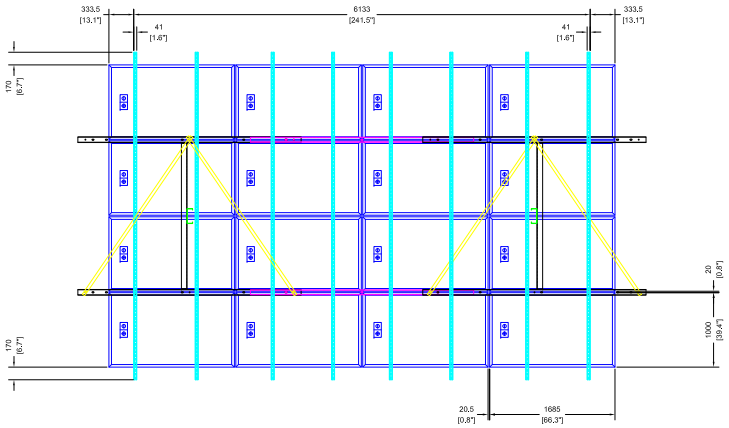
DRAWING No.

D 2.1

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1685x1000x32mm	Hanwha_Q_CELLS_Data_sheet_QPEAK_DUO-G5_315-330
	Hanwha_Q_CELLS_Data_sheet_Q.PEAK_DUO_BLK-G5_310-325





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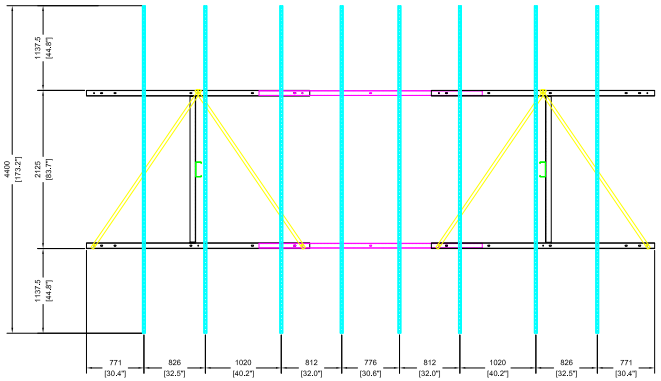

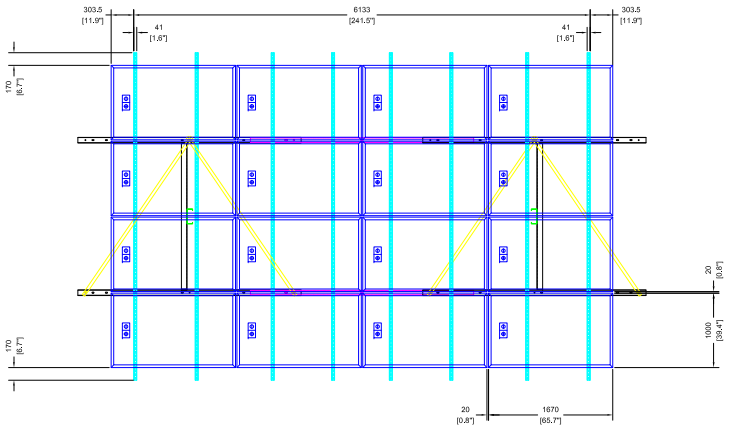

REVISION

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Revision history

REV-1

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- [ ] Approved with comments
- [ ] NOT Approved

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【GS-03】
Solar Mounting System

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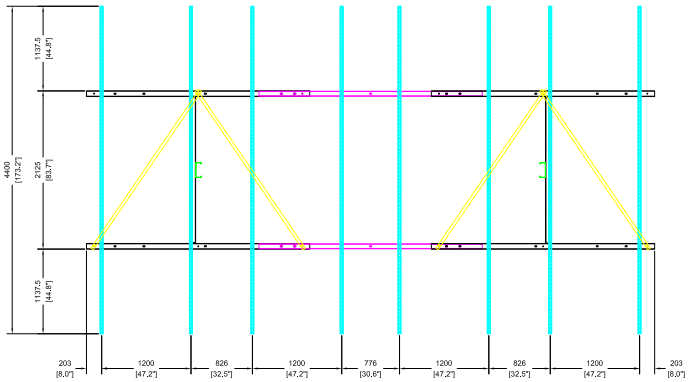
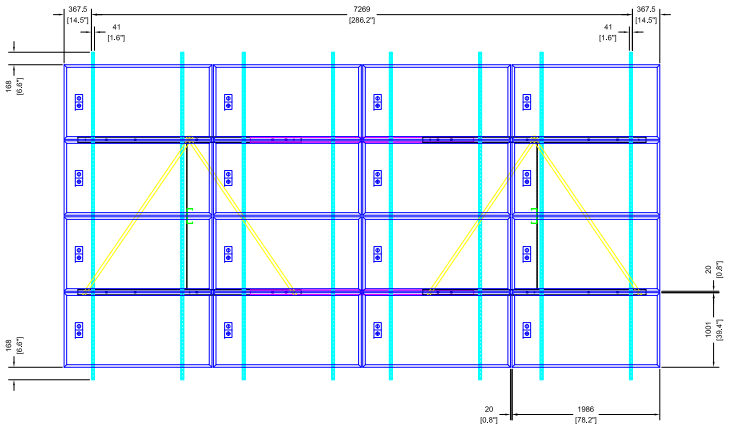
APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

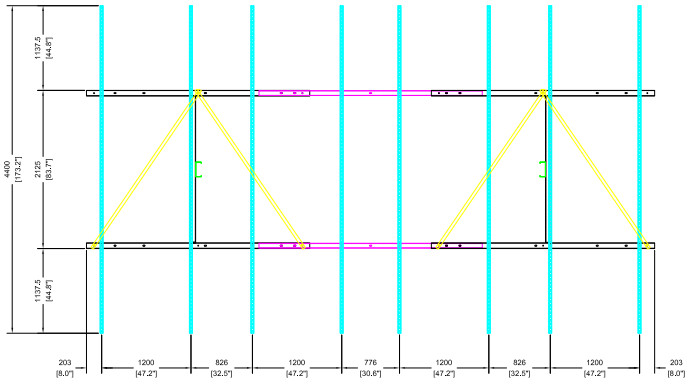
DRAWING No.	STATUS	Designed
D 2.2	DISCIPINE	
	SCALE	
	DATE	06-01-2021

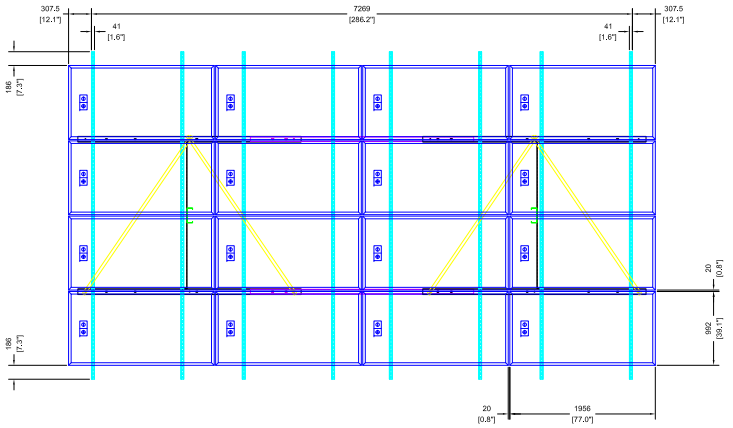
PV Module : 1986x1001x40mm	Heliene72M_Black_G1_N_REV.00
	Heliene72M_Silver_G1_N_400_REV.00





PV Module : 1956x992x40mm	Heliene72M_Black_NA-Rev.04





REVISION

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Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
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Solar Mounting System

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AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

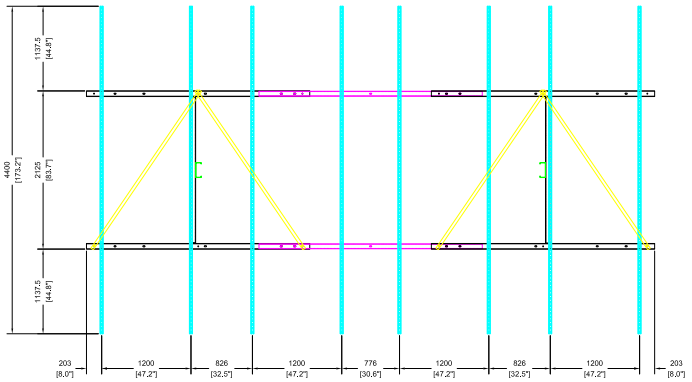
DRAWING No.

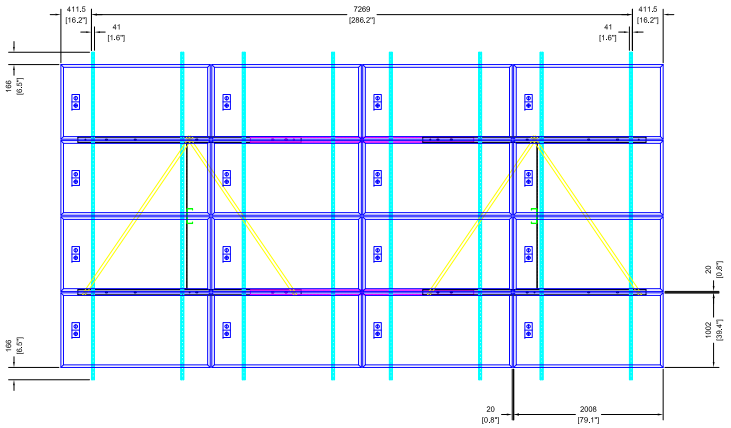
D 3.1

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 2008x1002x40mm

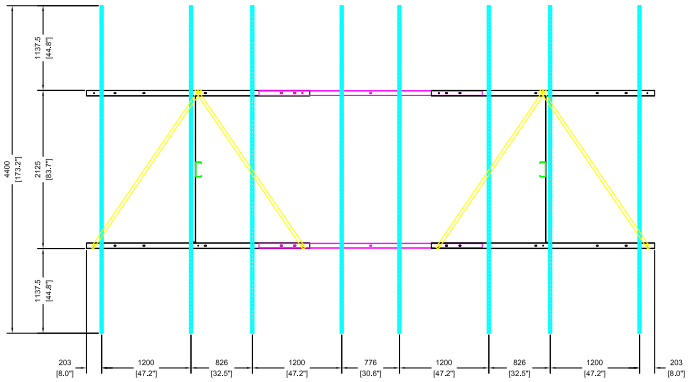
JKM390-410M-72H

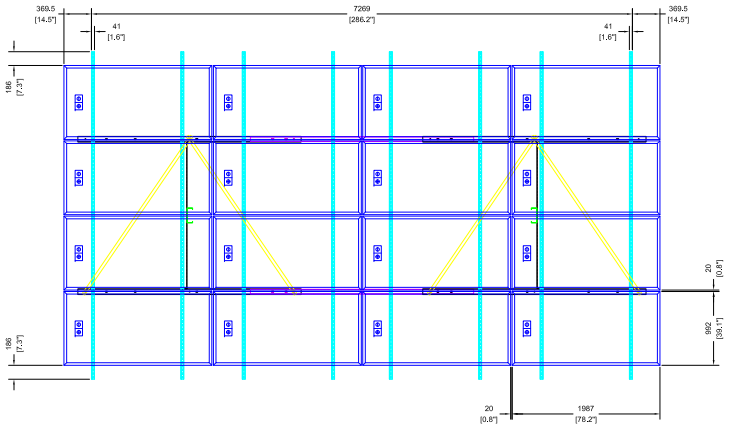




PV Module : 1987x992x40mm

US-Half-Cell-72M-330-350W





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

		DATE
APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

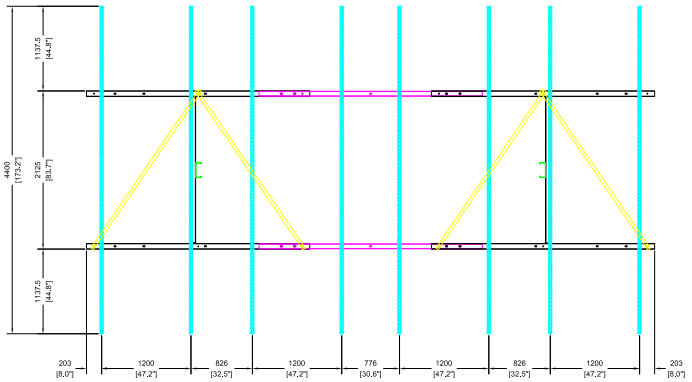
DRAWING No.

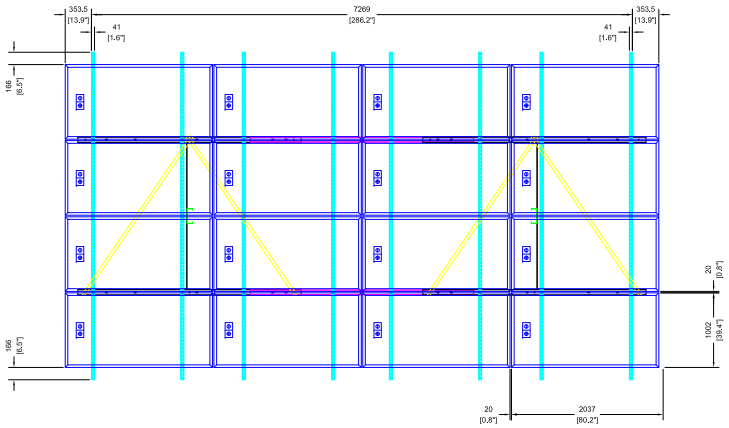
D 4.1

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1979x1002x40mm

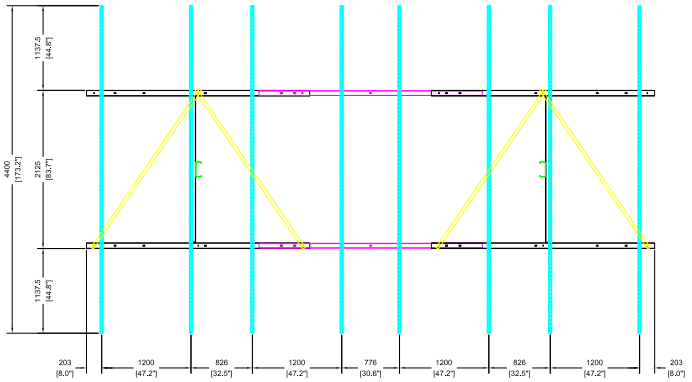
JKM380-400M-72

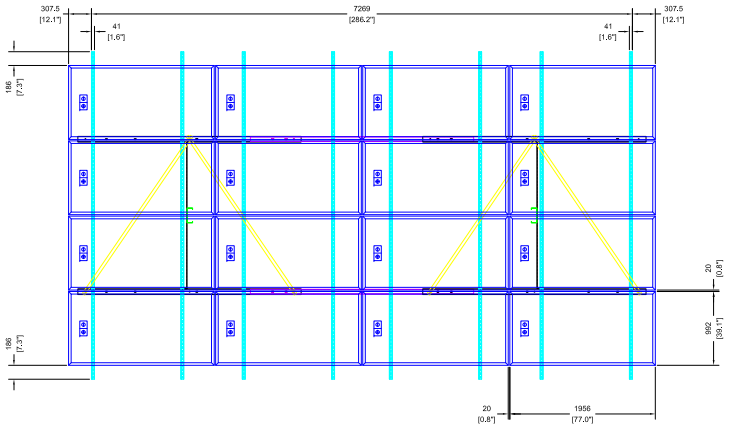




PV Module : 1956x992x40mm

Eagle JKM320-340PP-72-(V)-A3,1





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

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APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

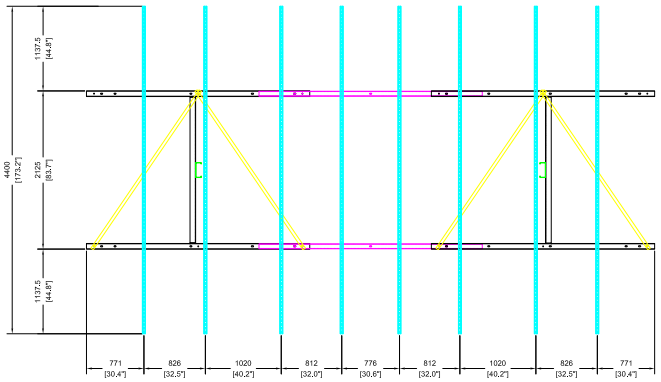
DRAWING No.

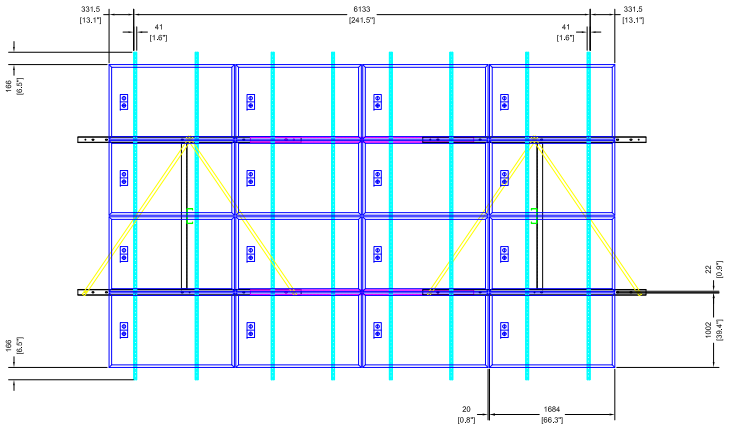
D 4.2

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1684x1002x35mm

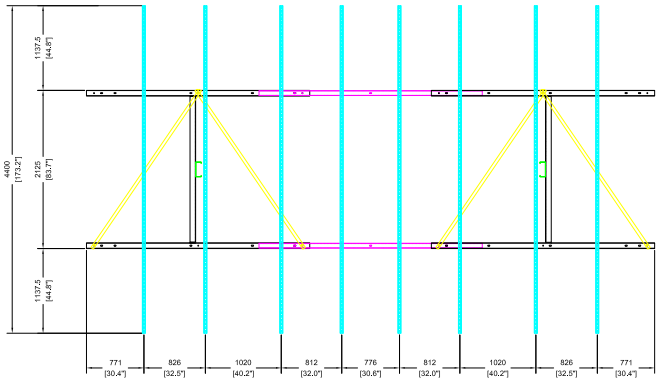
c1

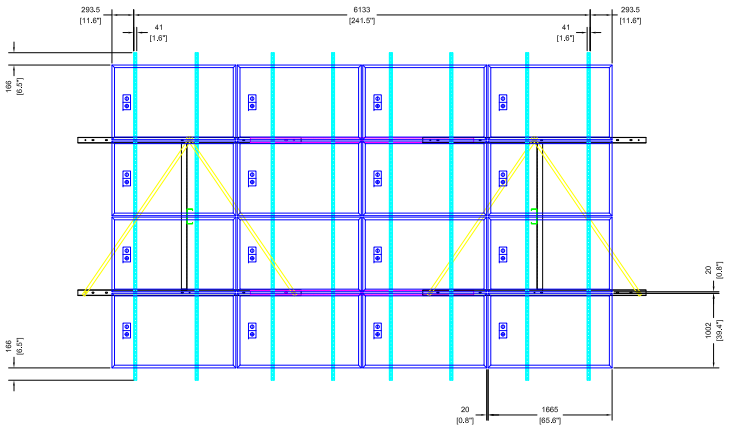




PV Module : 1665x1002x35mm

JKM315-335M-60





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

		DATE
APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

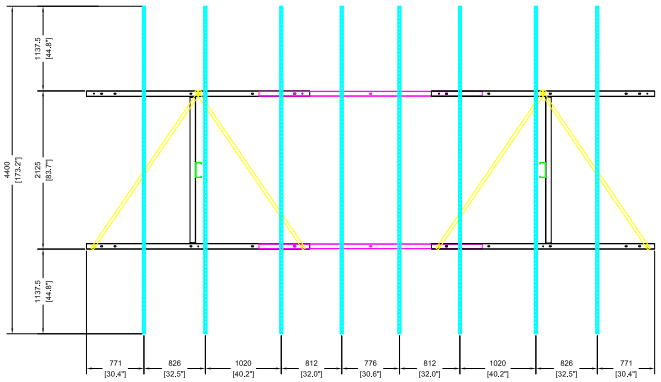
DRAWING No.

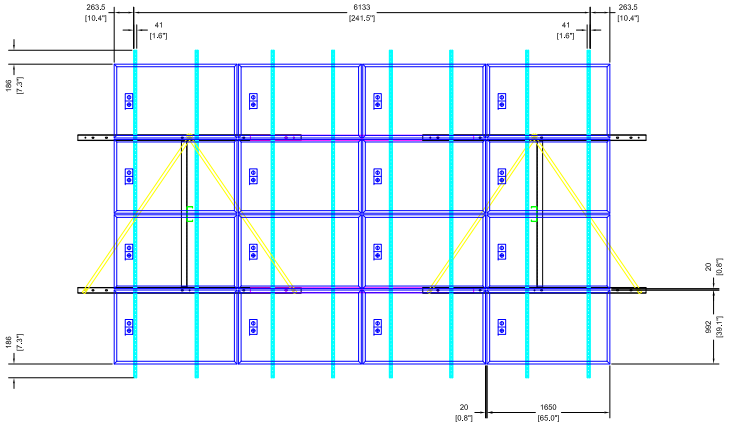
D 4.3

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1650x992x35mm

Eagle JKM265-285PP-60-(V)-A3,1





REVISION		
Mark	Description	Date

Revision history	☐ Approved
REV-1	☐ Approved with comments
	☐ NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

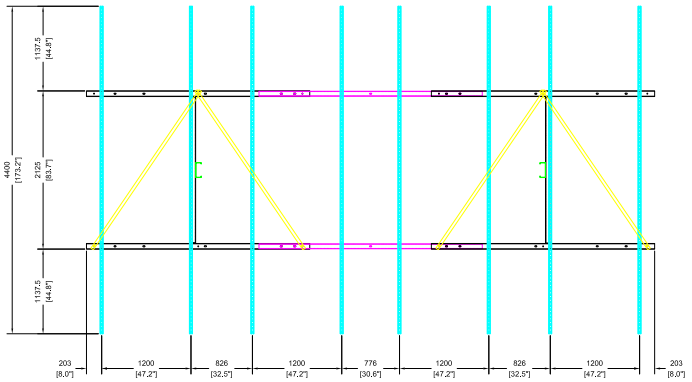
APPROVED BY	P.S	DATE
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

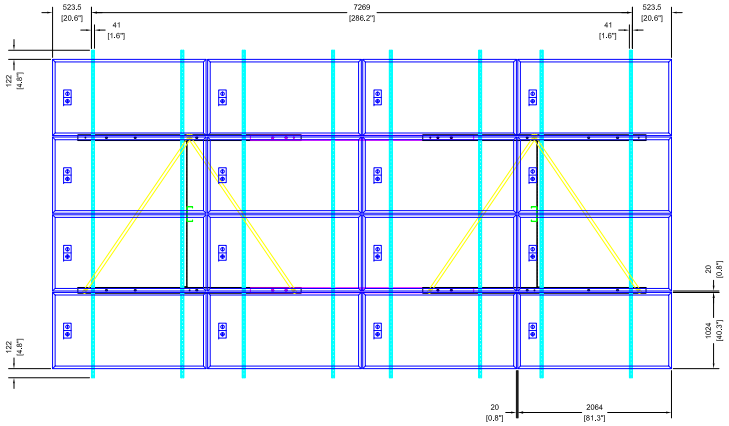
DRAWING TITLE

DRAWING No.	STATUS	Designed
D 4.4	DISCIPINE	
	SCALE	
	DATE	06-01-2021

PV Module : 2064x1024x40mm

spec-neon2-72cell-380n2w-a5-bifacial-1



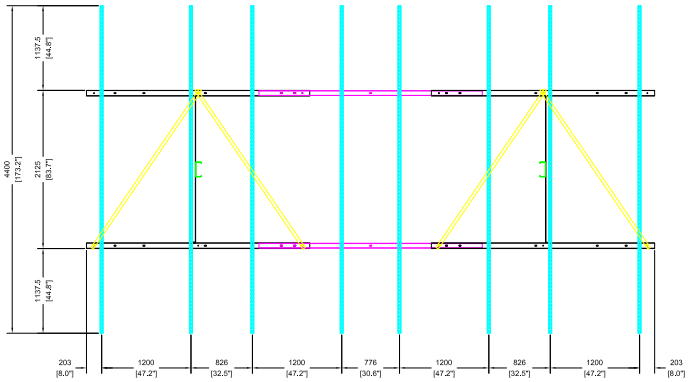


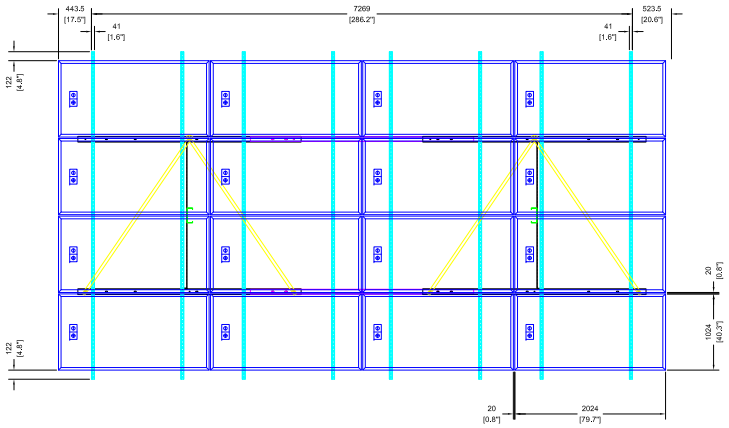
PV Module : 2024x1024x40mm

spec-neon2-72cell-390-395-400-405n2w-a5

Neon2_Bifi_72_90812_J5

Neon_2_72_90812(395~405)





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

APPROVED BY	P.S	DATE
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

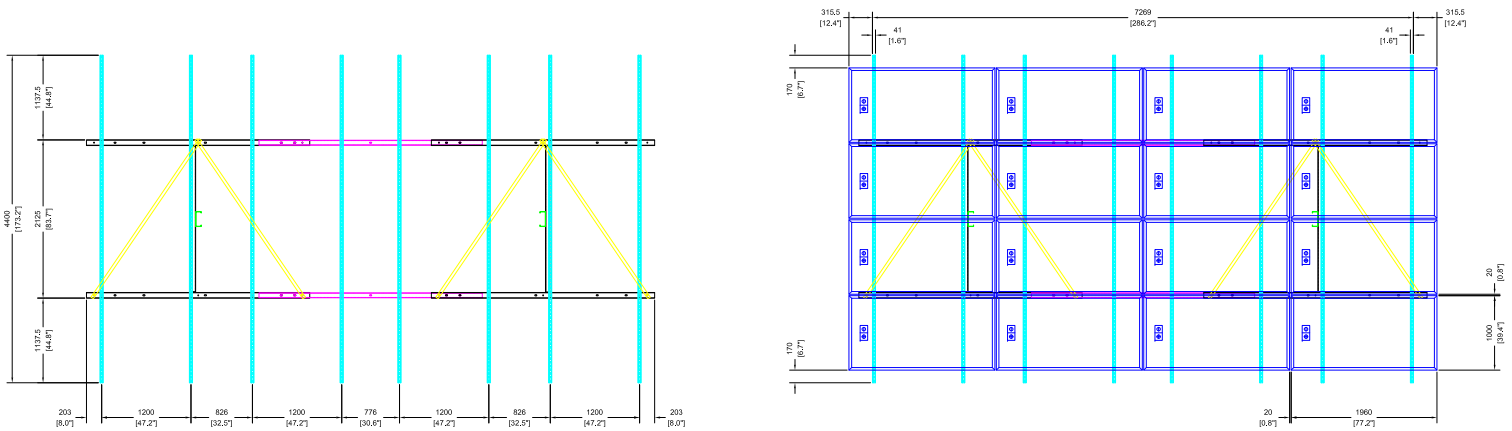
DRAWING No.

D 5.1

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

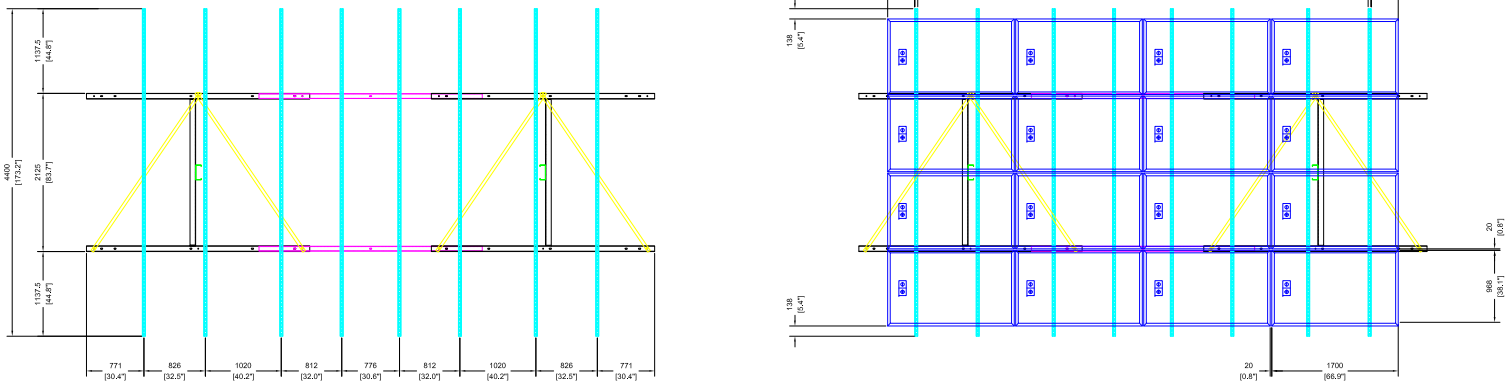
PV Module : 1960x1000x46mm

spec-neon2-72cell-365-370-375n2w-g4-bifacial



PV Module : 1700x1016x40mm

NeonR_Prime_60_V5_90812



REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
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APPROVED BY	P.S	
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

DRAWING TITLE

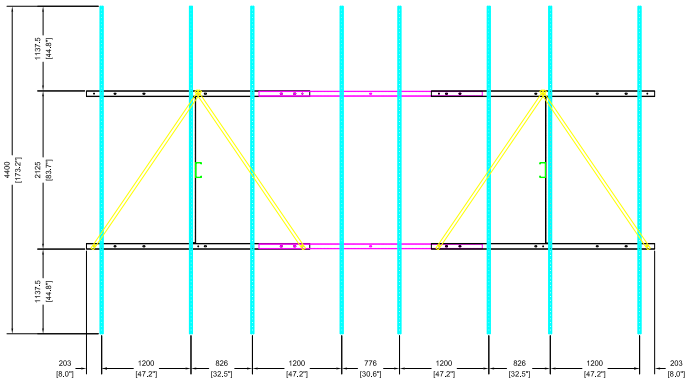
DRAWING No.

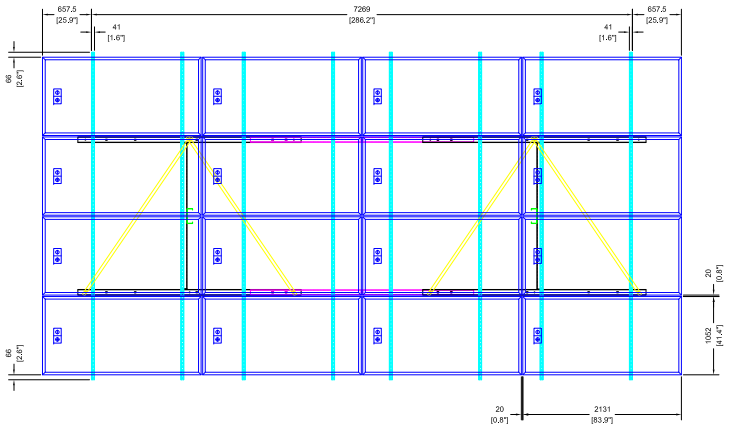
D 5.2

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 2131x1052x35mm

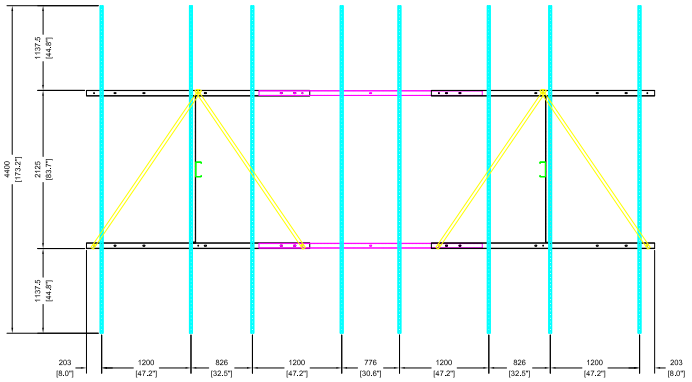
LR4-72HBD

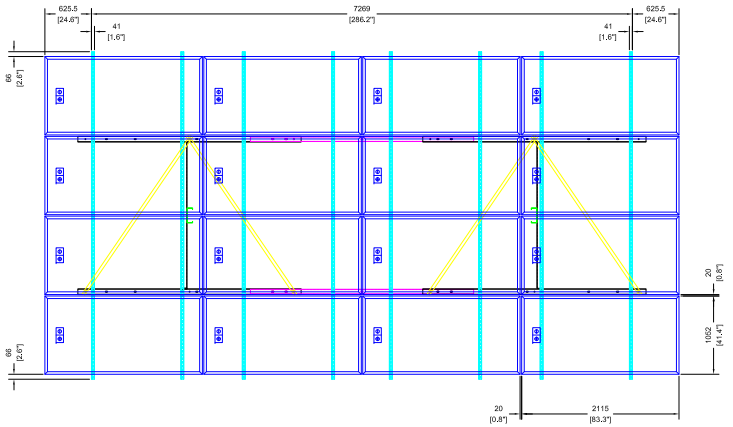




PV Module : 2115x1052x35mm

LR4-72HPH





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

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DESIGNED BY	H.Z	DATE

DRAWING TITLE

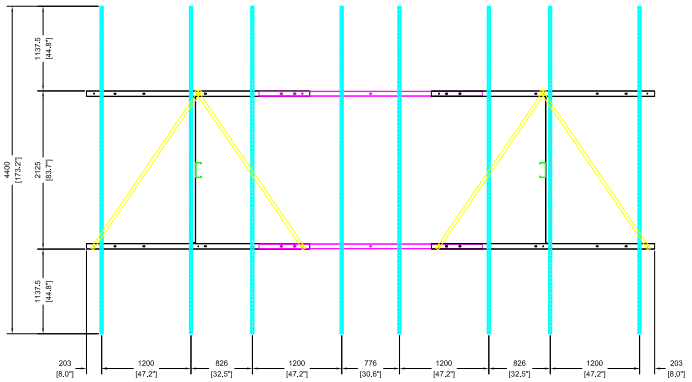
DRAWING No.

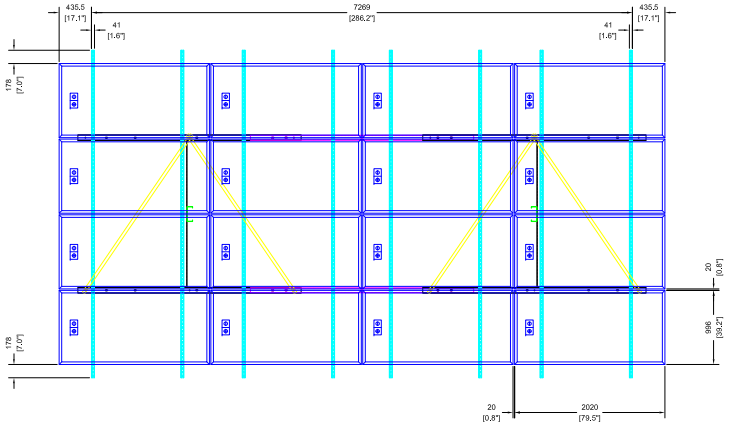
D 6.1

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 2020x996x30mm

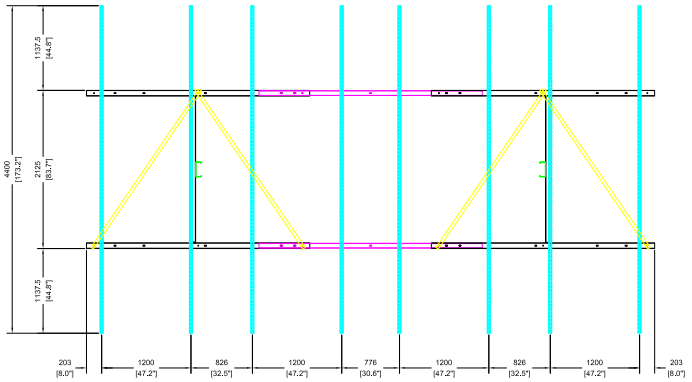
LR6-72HBD

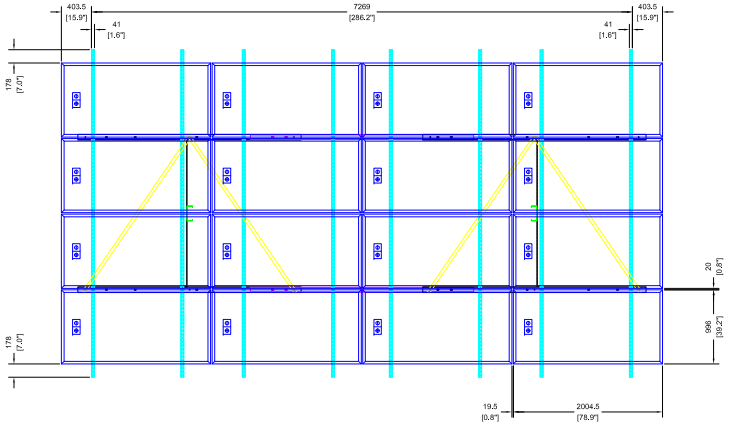




PV Module : 2004x996x35mm

LR6-72HPH





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

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DRAWING TITLE

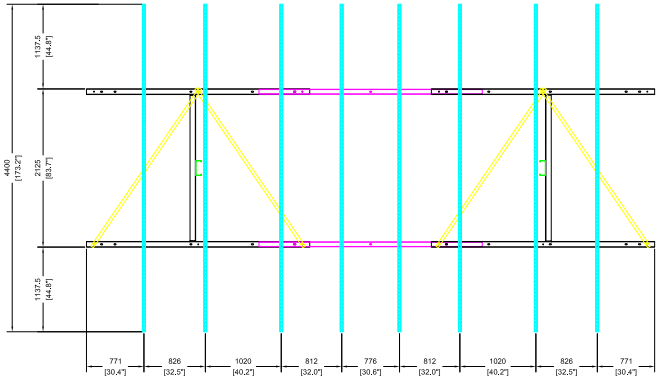
DRAWING No.

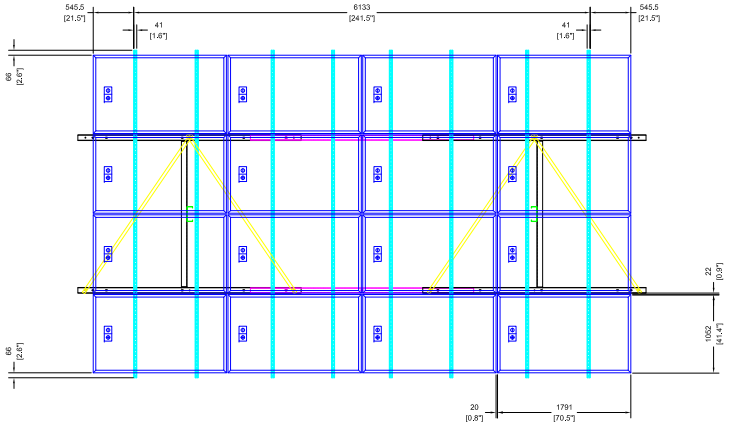
D 6.2

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1791x1052x30mm

LR4-60HBD

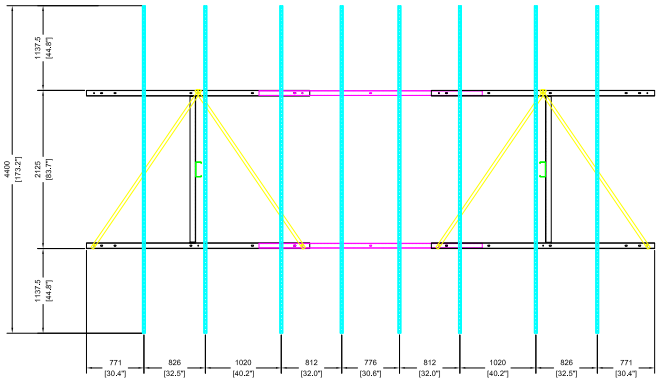


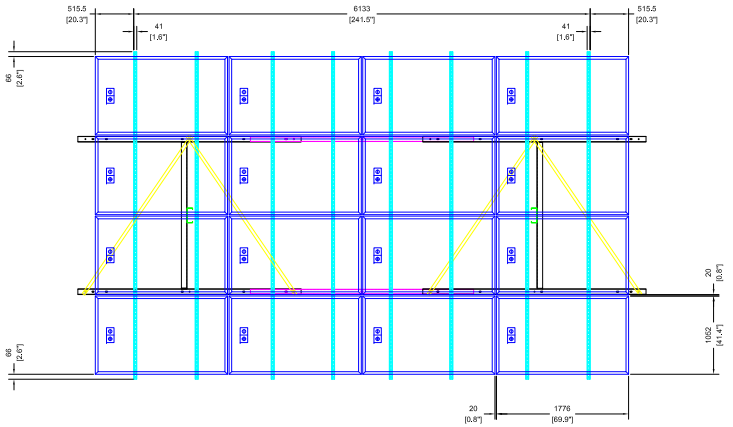


PV Module : 1776x1052x35mm

LR4-60HPB

LR5-60HPH





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

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PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

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AGREED BY	R.Y	DATE
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DESIGNED BY	H.Z	DATE

DRAWING TITLE

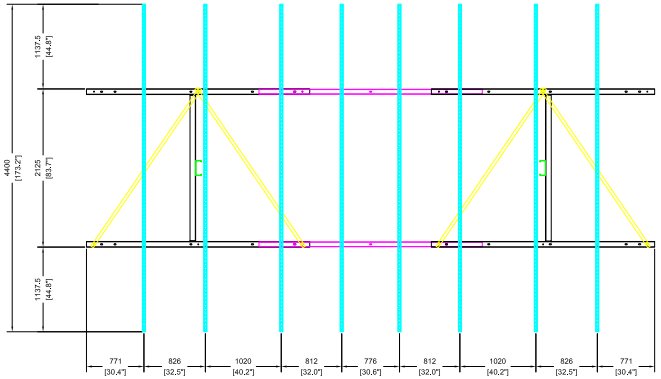
DRAWING No.

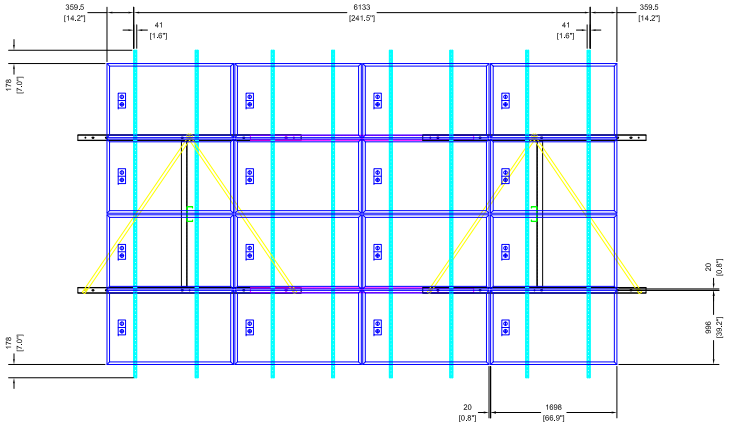
D 6.3

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1698x996x30mm

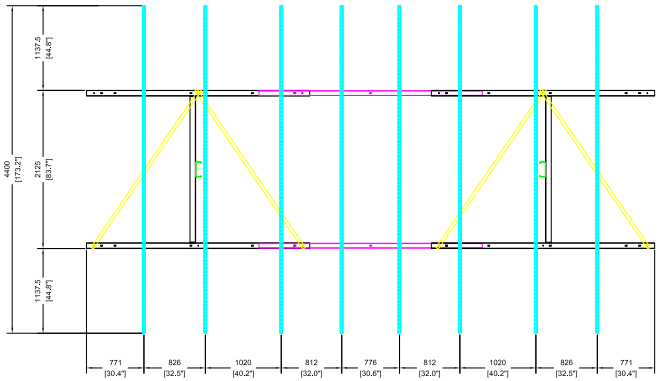
LR6-60HBD

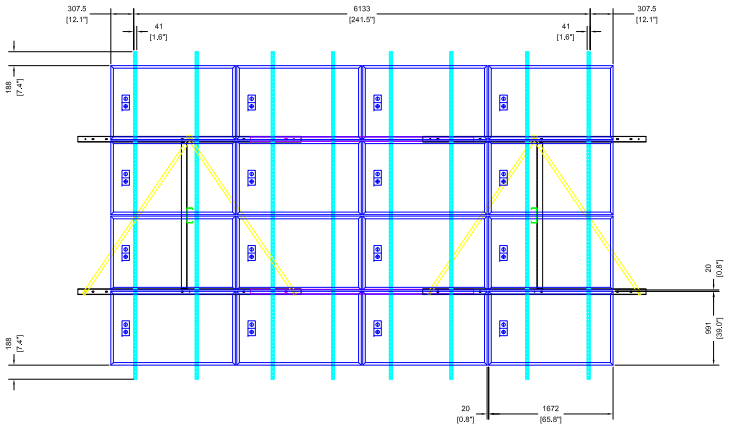




PV Module : 1672x991x35mm

LR6-60HPH





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

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PROJECT

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Solar Mounting System

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DESIGNED BY	H.Z	DATE

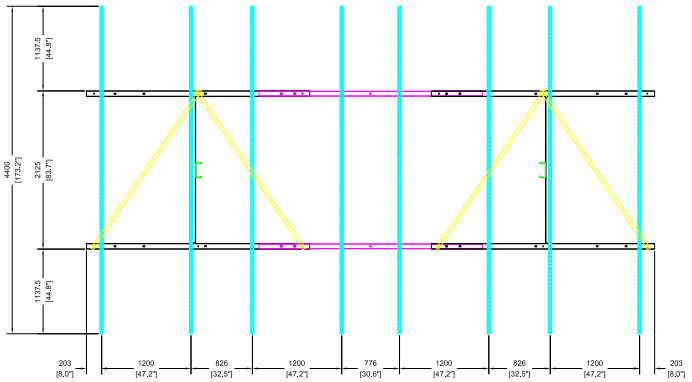
DRAWING TITLE

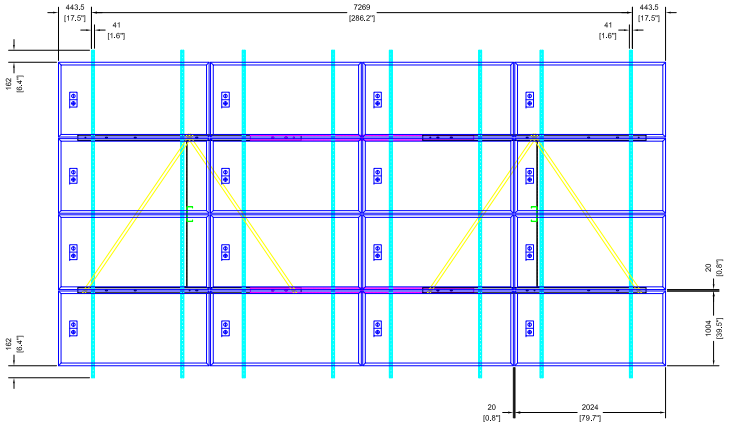
DRAWING No.

D 6.4

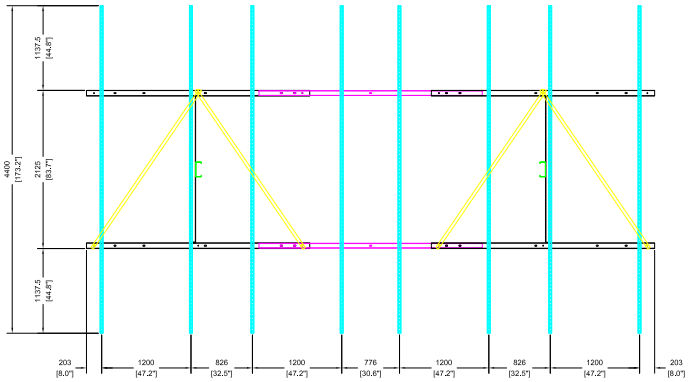
STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

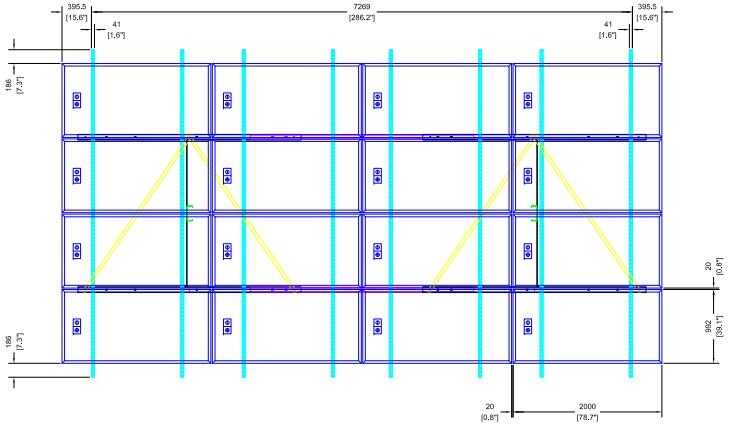
PV Module : 2024x1004x35mm	Trina Datasheet_TallmaxM_DE15M(II)_NA_2019_C
	Trina Datasheet_TallmaxM_DE15H(II)_NA_2019_D





PV Module : 2000x992x40mm	Datasheet_DE14H(II)_HC_1500V_May2019_NT





REVISION		
Mark	Description	Date

Revision history	☐ Approved
REV-1	☐ Approved with comments
	☐ NOT Approved

Pion Power™

PROJECT

【GS-03】
Solar Mounting System

PROJECT No.

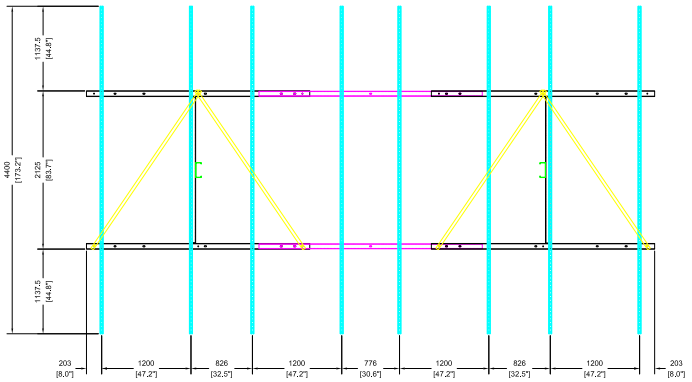
APPROVED BY	P.S	DATE
AGREED BY	R.Y	DATE
CHECKED BY	L.Z	DATE
DESIGNED BY	H.Z	DATE

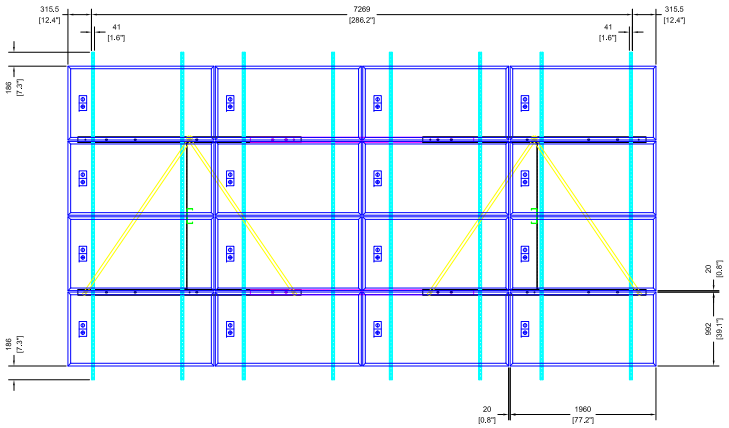
DRAWING TITLE

DRAWING No.	STATUS	Designed
D 7.1	DISCIPINE	
	SCALE	
	DATE	06-01-2021

PV Module : 1960x992x40mm

Datasheet_Tallmax_1500V M Plus_2019_May

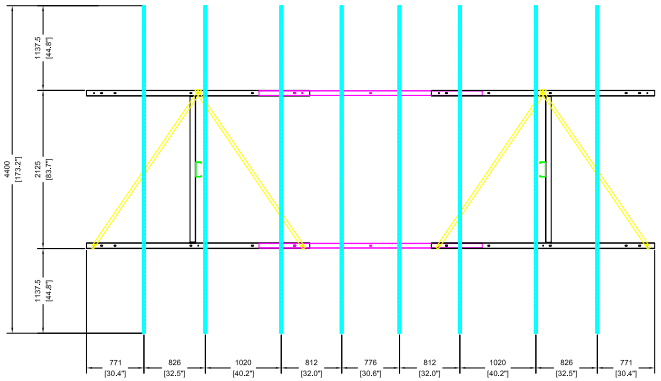


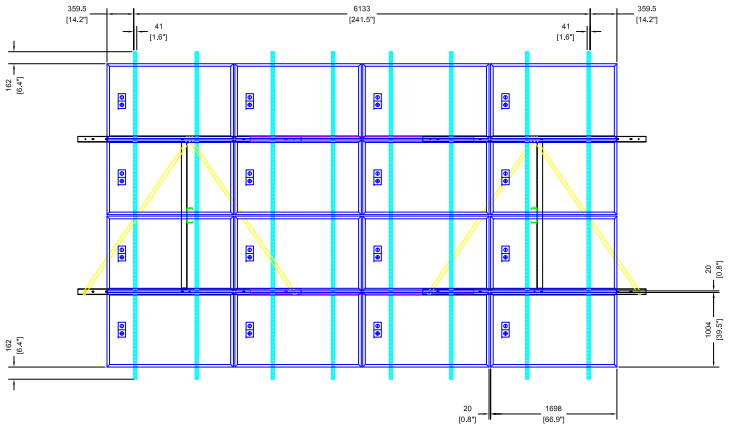


PV Module : 1698x1004x35mm

PS-M A Datasheet_AllmaxM Plus_DD06H(II)_NA_2019_A web

Trina Datasheet_Residential_DD06M.05(II)_NA_2019_B





REVISION

Mark	Description	Date

Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

【GS-03】
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PROJECT No.

APPROVED BY	P.S	DATE
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DESIGNED BY	H.Z	DATE

DRAWING TITLE

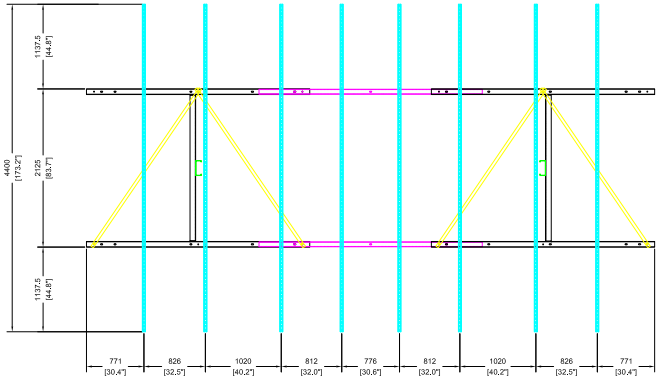
DRAWING No.

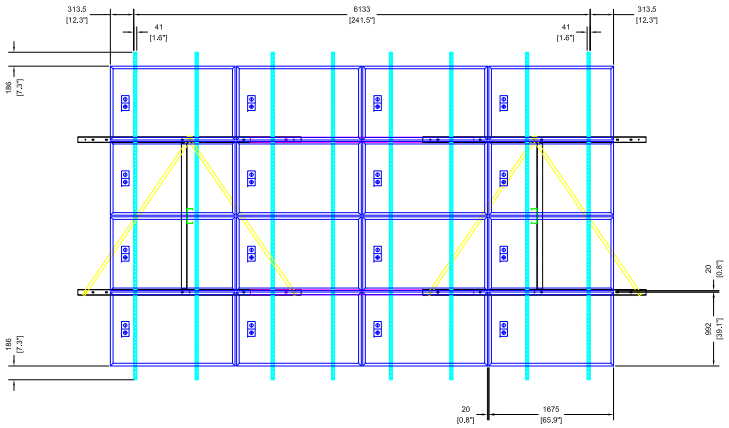
D 7.2

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021

PV Module : 1675x992x35mm

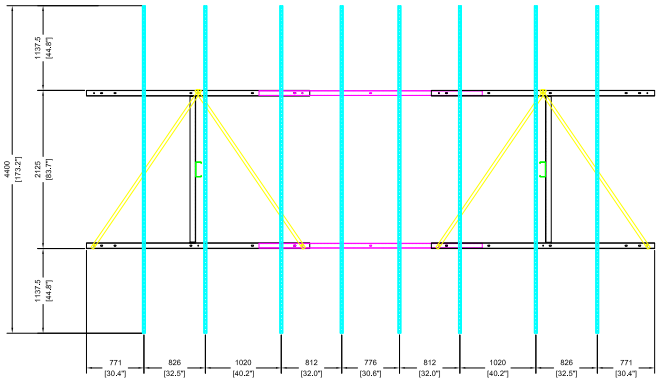
PS-M-Datasheet_AllmaxM Plus_DD05H(II)_NA_2019_A

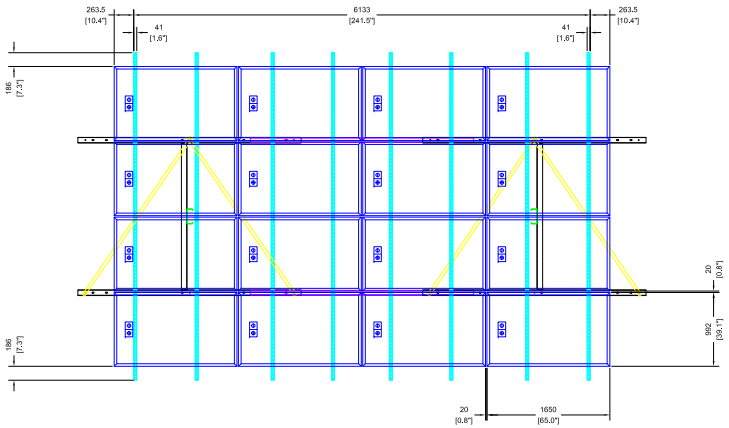




PV Module : 1650x992x35mm

PS-M-0421 Datasheet_Allmax M Plus_US_Apr2018_C





REVISION

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Revision history

REV-1

- [ ] Approved
- [ ] Approved with comments
- [ ] NOT Approved

Pion Power™

PROJECT

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DESIGNED BY	H.Z	DATE

DRAWING TITLE

DRAWING No.

D 7.3

STATUS	Designed
DISCIPINE	
SCALE	
DATE	06-01-2021