GROUND MOUNTING SYSTEM INSTALLATION MANUAL

JIANGYIN TITANERGY CO.,LTD

APRIL 2016, REV O

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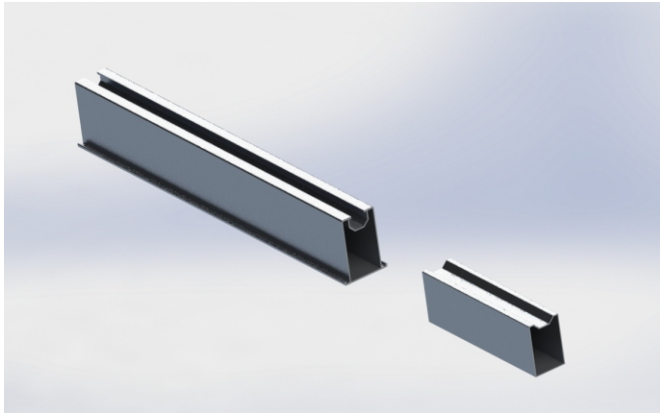
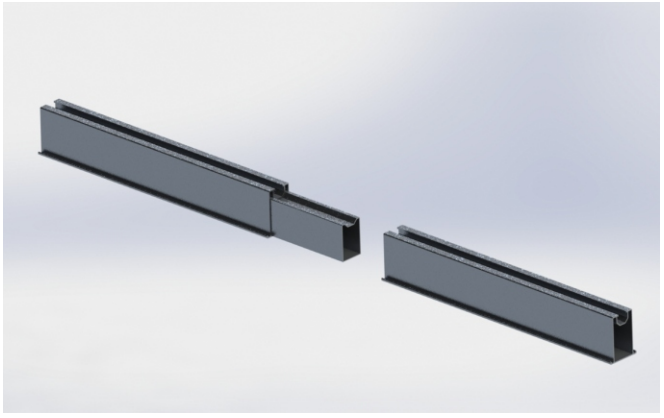
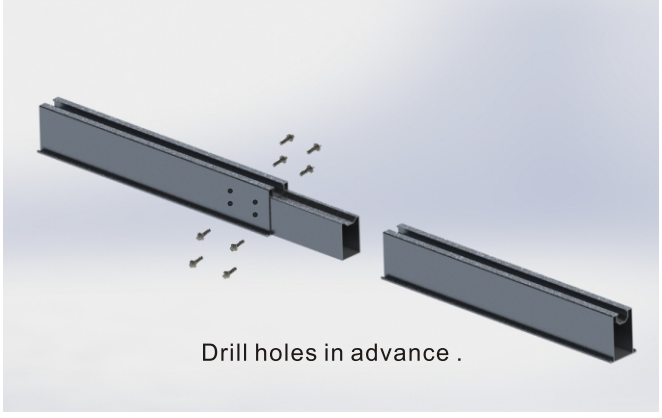
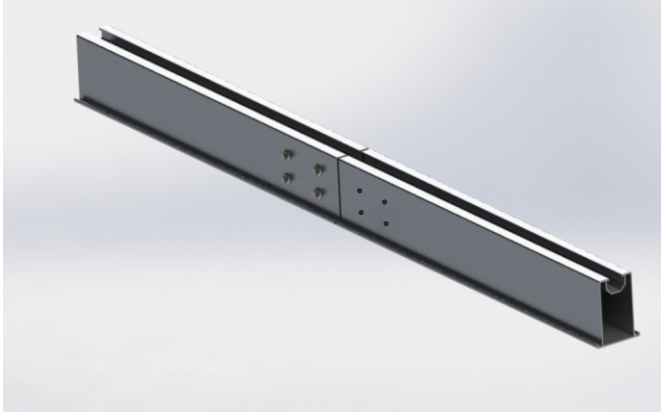
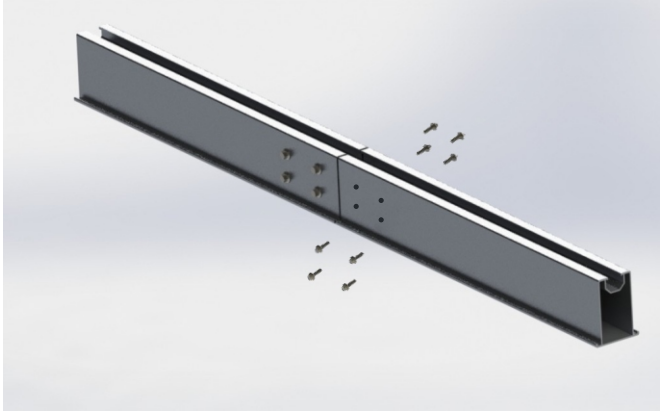
Using the special splice kits to connect Titan Solar's aluminium HD rail makes installation easier,more flexible and convenient. HD Rails can be extended indefinitely improving efficiency, minimising wastage and reducing the overall cost of installation.

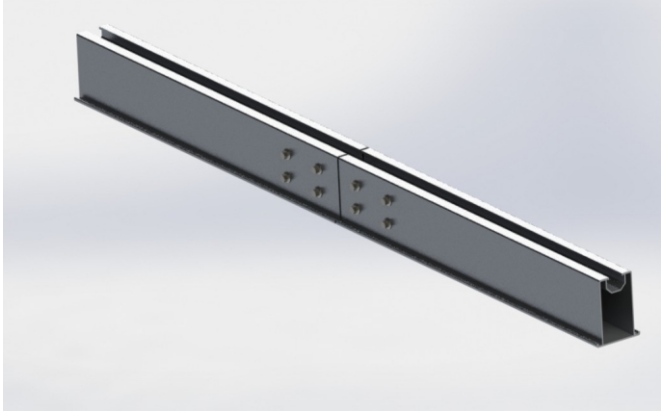












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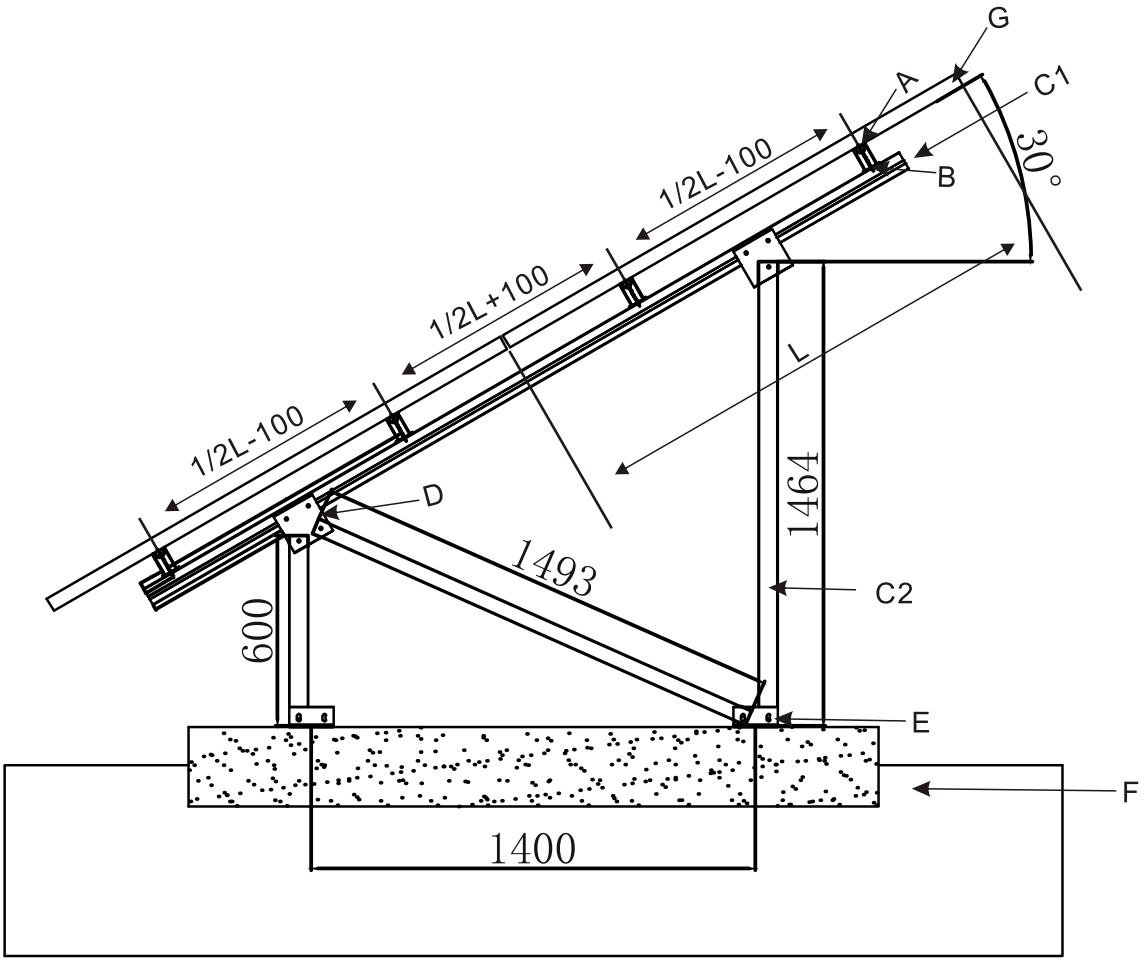
Planning the array layout



L=Solar Panel Length
A=HD Rail Clamp (use T type M8*25screws connecting to the rail)
B=60*80 Rail (put the sliding rail with barb up)
C1= 60*60 Square Tube (use M10*25 screws connecting to H connecting clip)
C2= 60*60Square Tube
D=H Connector
E=Base Dimension (use M10*90 screws connecting to C2)
F=Concrete Foundation (use M10*100 setscrews connecting to E)
G=Solar Panels(1650*992*40)

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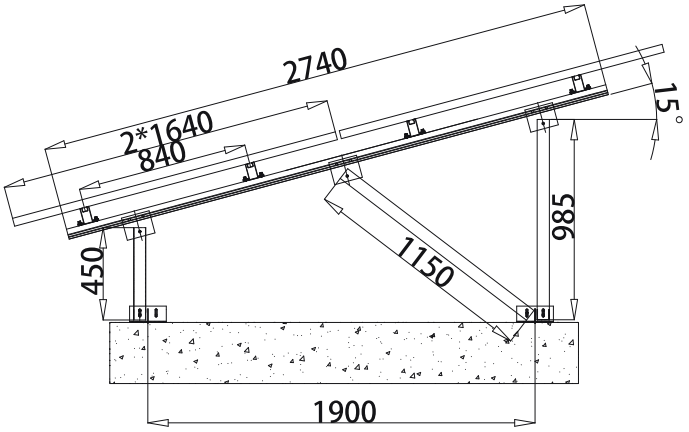

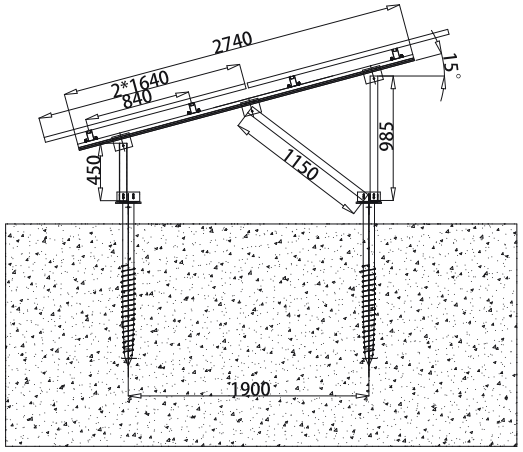

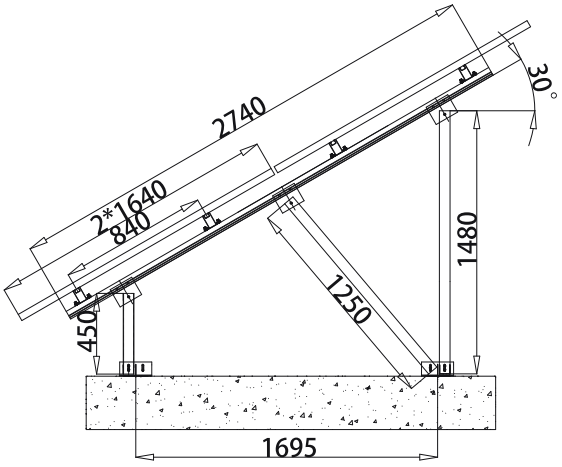

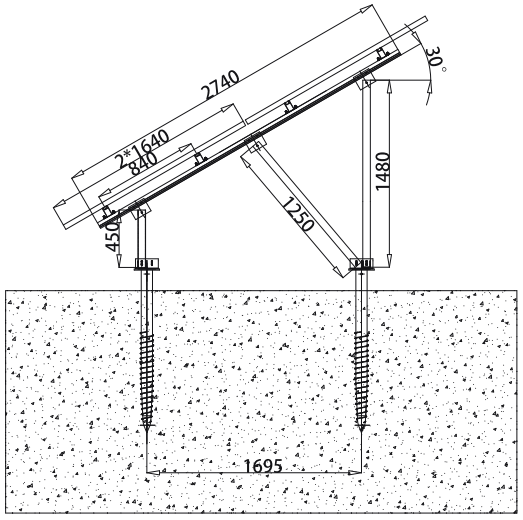

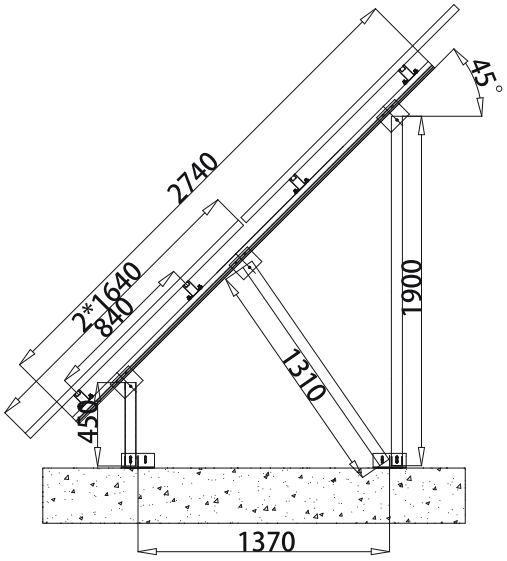

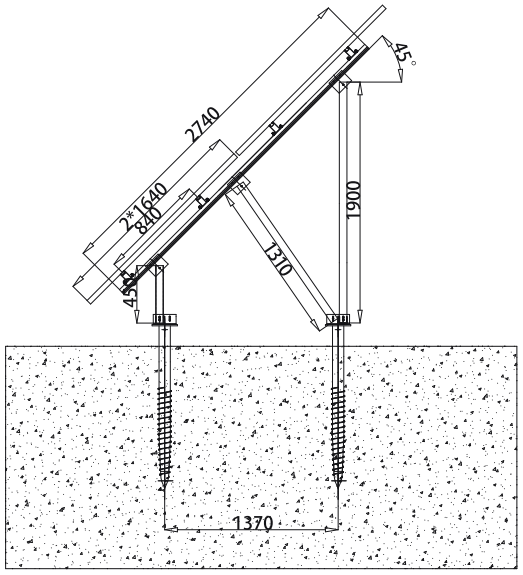

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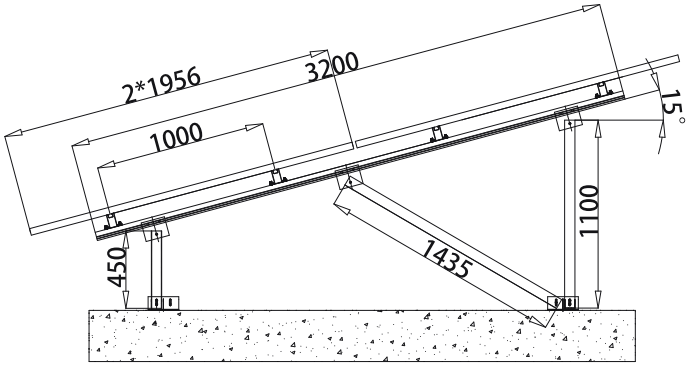

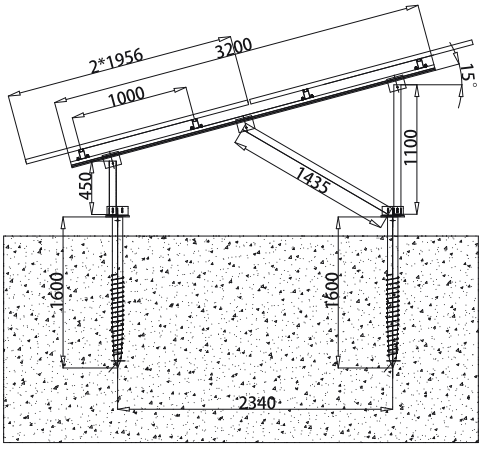

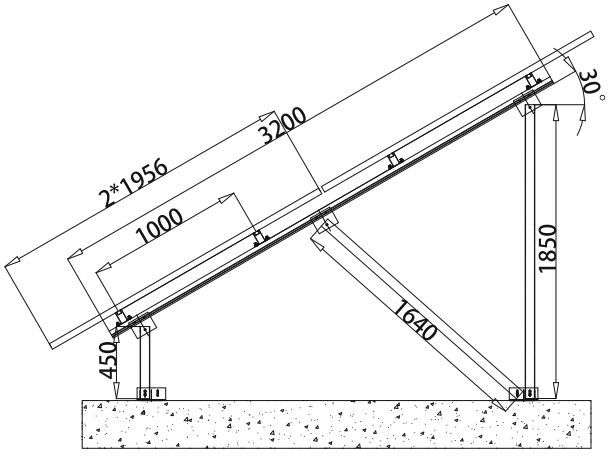

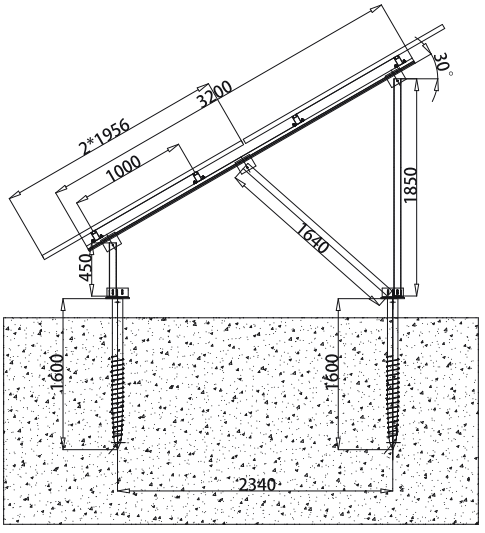

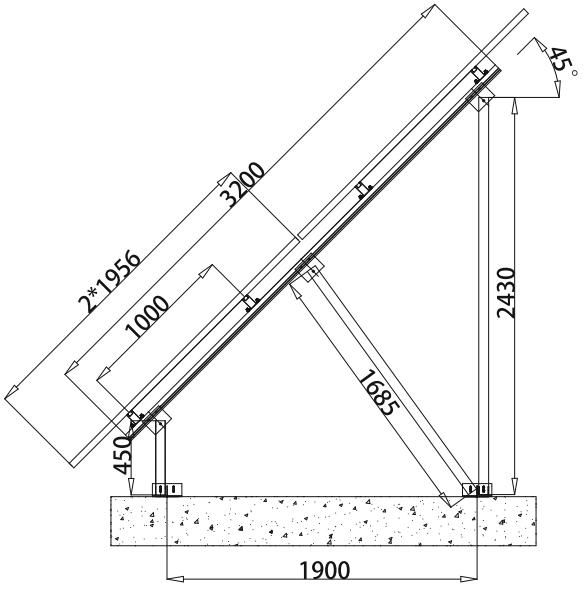

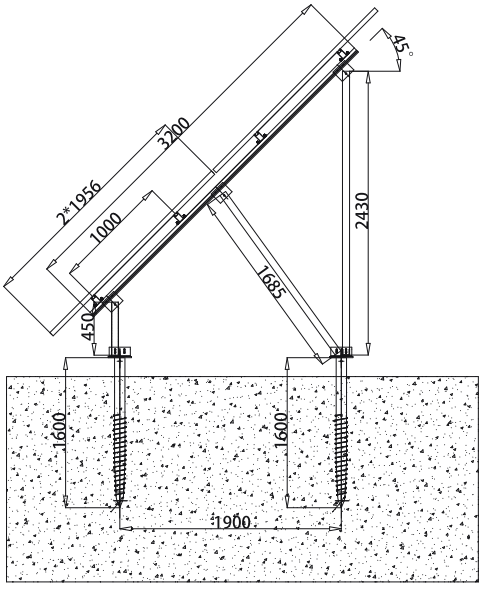

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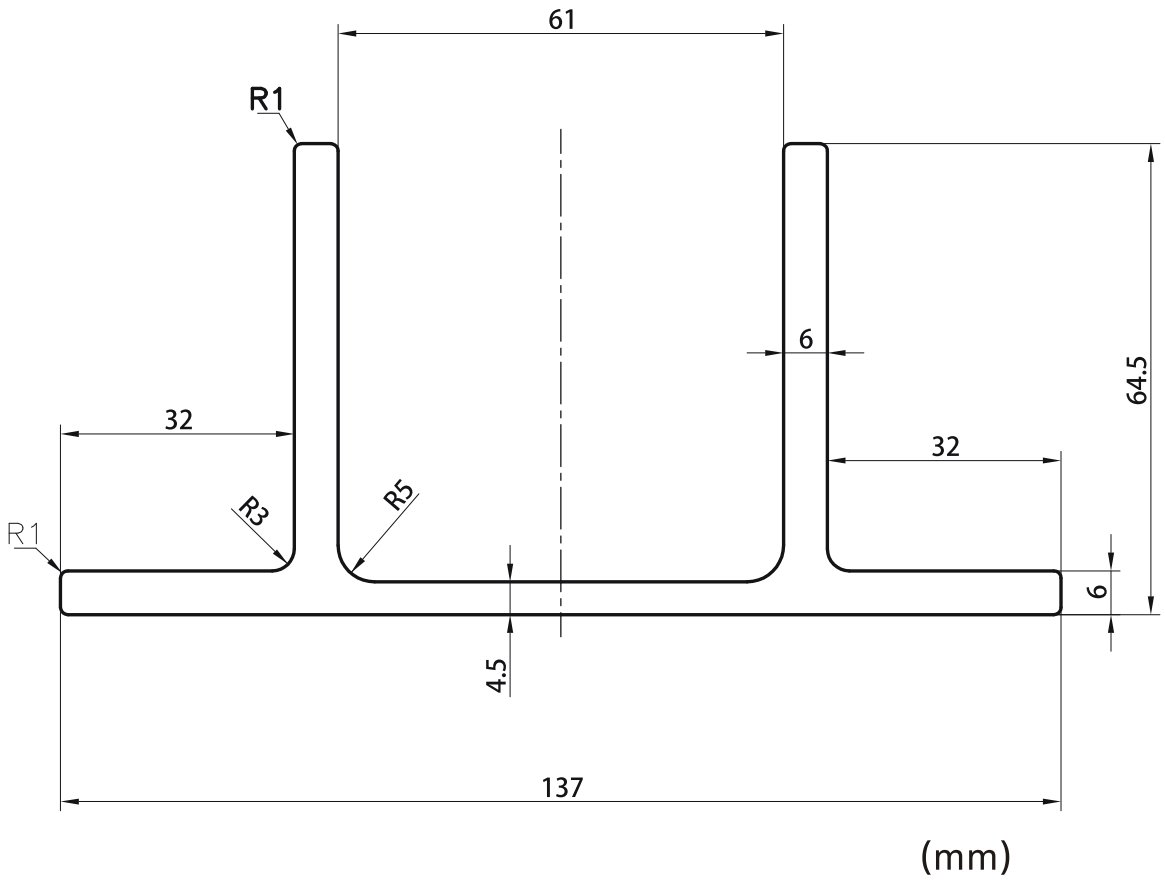
Base Dimension:



Using M16 Grade 5.8 Carbon Steel anchor studs with Ramset Chemset REO502 chemical injection anchoring system. Minimum anchor embedment depth of 90mm with concrete strength of 25MPa.

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Maximum spacing between legs:

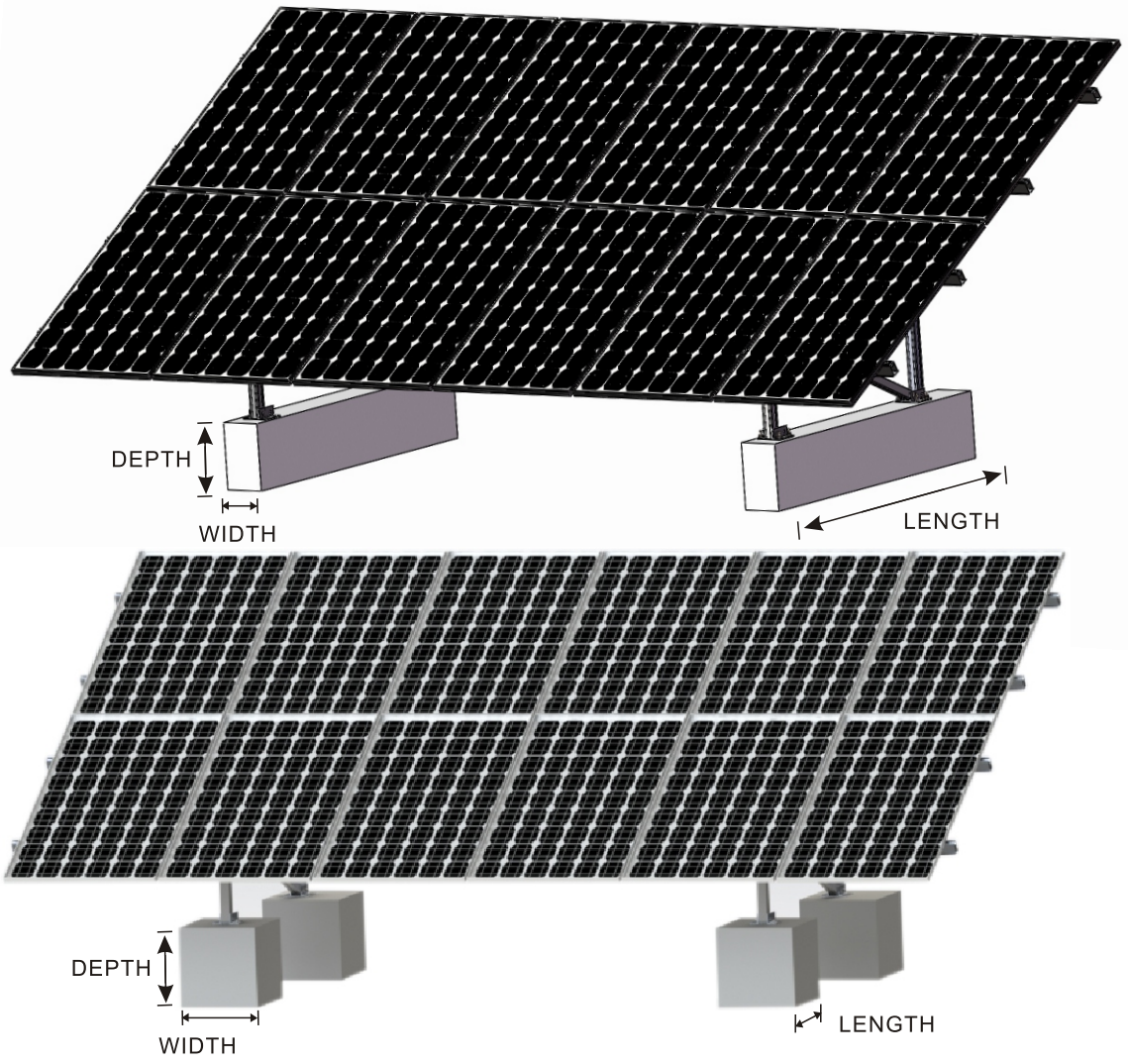

Table 1.0 Maximum Spacing L2 between frame supports（mm）

Module Length:1640mm				
Wind Zone	A	B	C	D
Wind Speed Vs(m/s)	41	48	56	66
Slope 15°	3600	3100	2700	1800
Slope 30°	3100	2800	2200	1800
Slope 45°	2700	2300	2000	1400

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Module Length:1956mm				
Wind Zone	A	B	C	D
Wind Speed Vs(m/s)	41	48	56	66
Slope 15°	3000	2600	2300	1500
Slope 30°	2600	2300	1900	1400
Slope 45°	2300	2000	1700	1200

Cantilever span L1 shall not exceed 50% of the internal span L2

Table 2.0 Minimum dimension of concrete footings

Here we have two options:

1.Length（m）× Width（m）× Depth（m）		
Slope	Wind Zone A/B	Wind Zone C/D
15°	2.0*0.4*0.4	2.0*0.4*0.4
30°	2.0*0.4*0.4	2.0*0.4*0.4
45°	2.0*0.4*0.4	2.0*0.4*0.4

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2.Length（m）× Width（m）× Depth（m）		
Slope	Wind Zone A/B	Wind Zone C/D
15°	0.5*0.5*0.5	0.5*0.5*0.5
30°	0.5*0.5*0.5	0.5*0.5*0.5
45°	0.5*0.5*0.5	0.5*0.5*0.5

Minimum reinforcement：N16@200 Each Way Top &Bottom

Table 3.0 Ultimate design loads for each of the Piles(Pullout)				
Slope	Wind Zone A/B		Wind Zone C/D	
	Uplift（kN）	Shear(kN)	Uplift(kN)	Shear(kN)
15°	20.0	5.0	20.0	5.0
30°	20.0	5.0	20.0	5.0
45°	20.0	5.0	20.0	5.0

Piles should be on site tested to achieve minimum pullout capacity and have a minumum bearing capacity of 10 kN.

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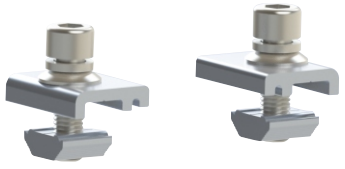
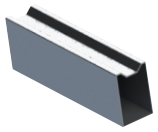
Components List

NO.	Product Name	Picture	Material	Remark
1	HD Rail		AL 6005-T5	
2	End Clamp		AL 6005-T5	Includes： a. one piece of A2-70 M8 Hexagon screw b. one piece of aluminum fixing nut
3	Inter Clamp		AL 6005-T5	Includes： a. one piece of A2-70 M8 Hexagon screw b. one piece of aluminum fixing nut
4	HD Rail Clamp		AL 6005-T5	Includes： a. one piece of A2-70 M8 Hexagon screw b. one piece of aluminum fixing nut
5	pre-assembled Leg		AL 6005-T5 & SUS 304	
6	HD Rail Splice Kit		AL 6005-T5	Includes： four pieces of Φ6.3mm Stainless steel self-tapping screws

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Installation Steps

1.Unfasten the pre-assembled front leg, rear leg and connecting tube from the support structure. Fasten the base of the legs to the pre-prepared anchor bolts. Tighten anchor bolts to secure.

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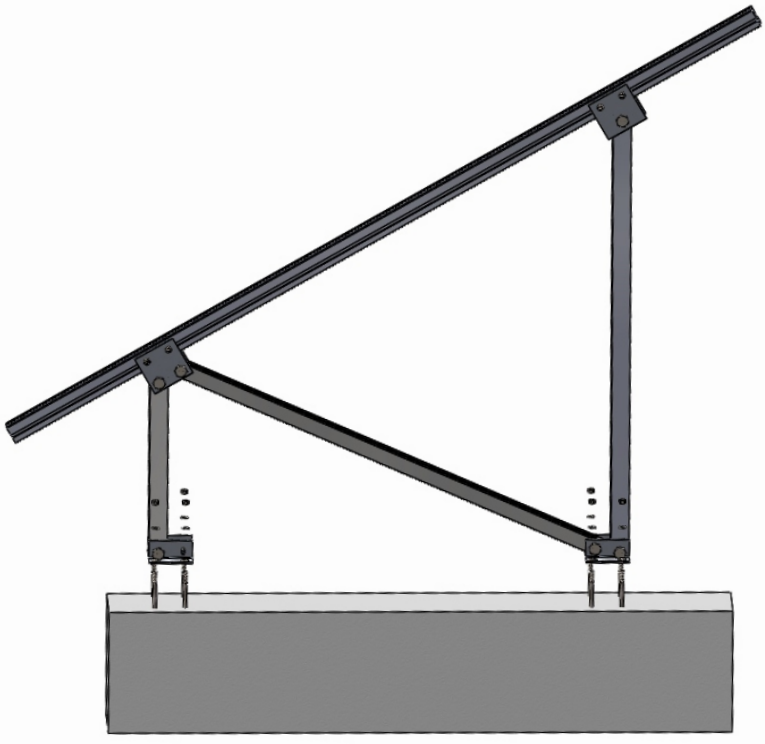

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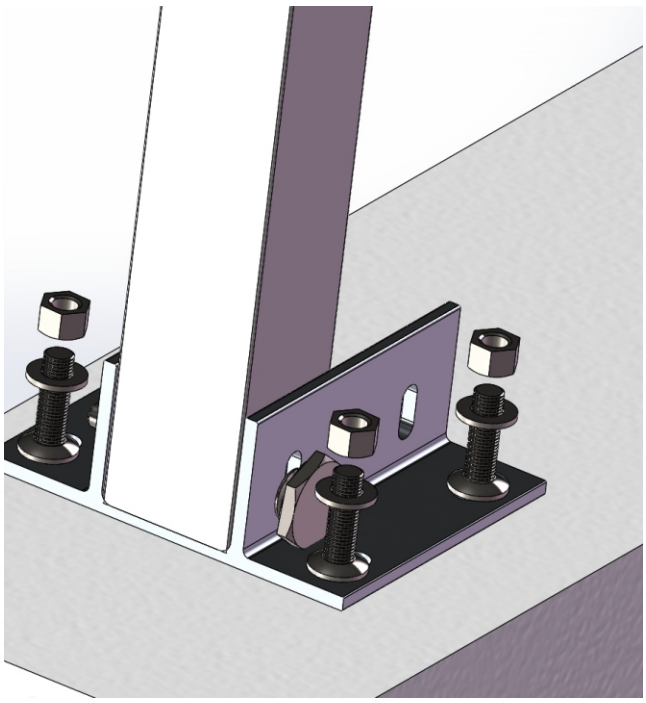

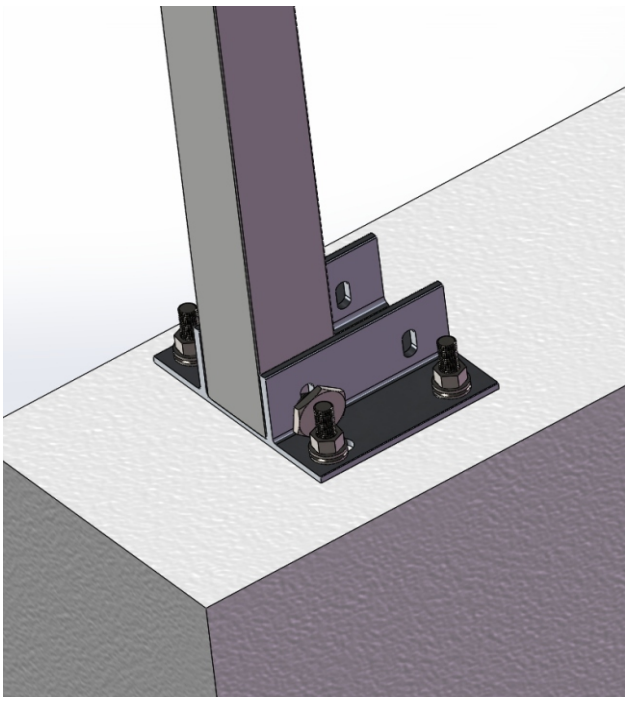

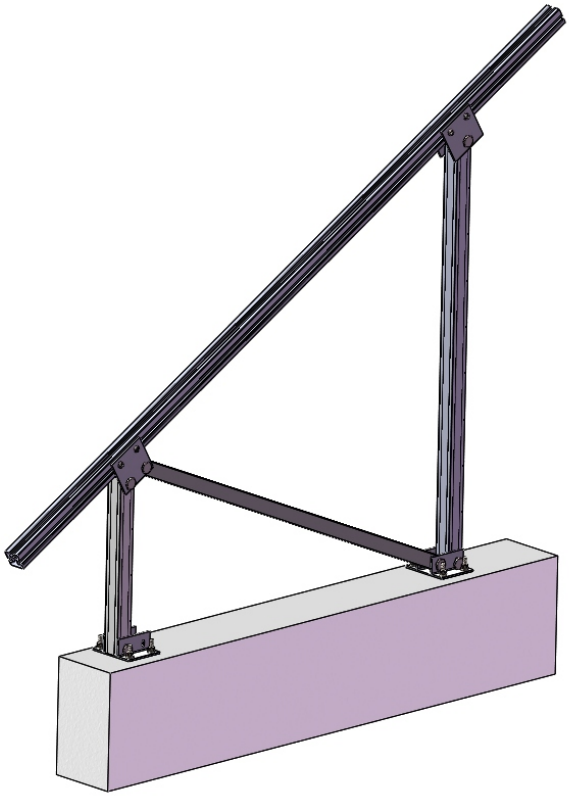

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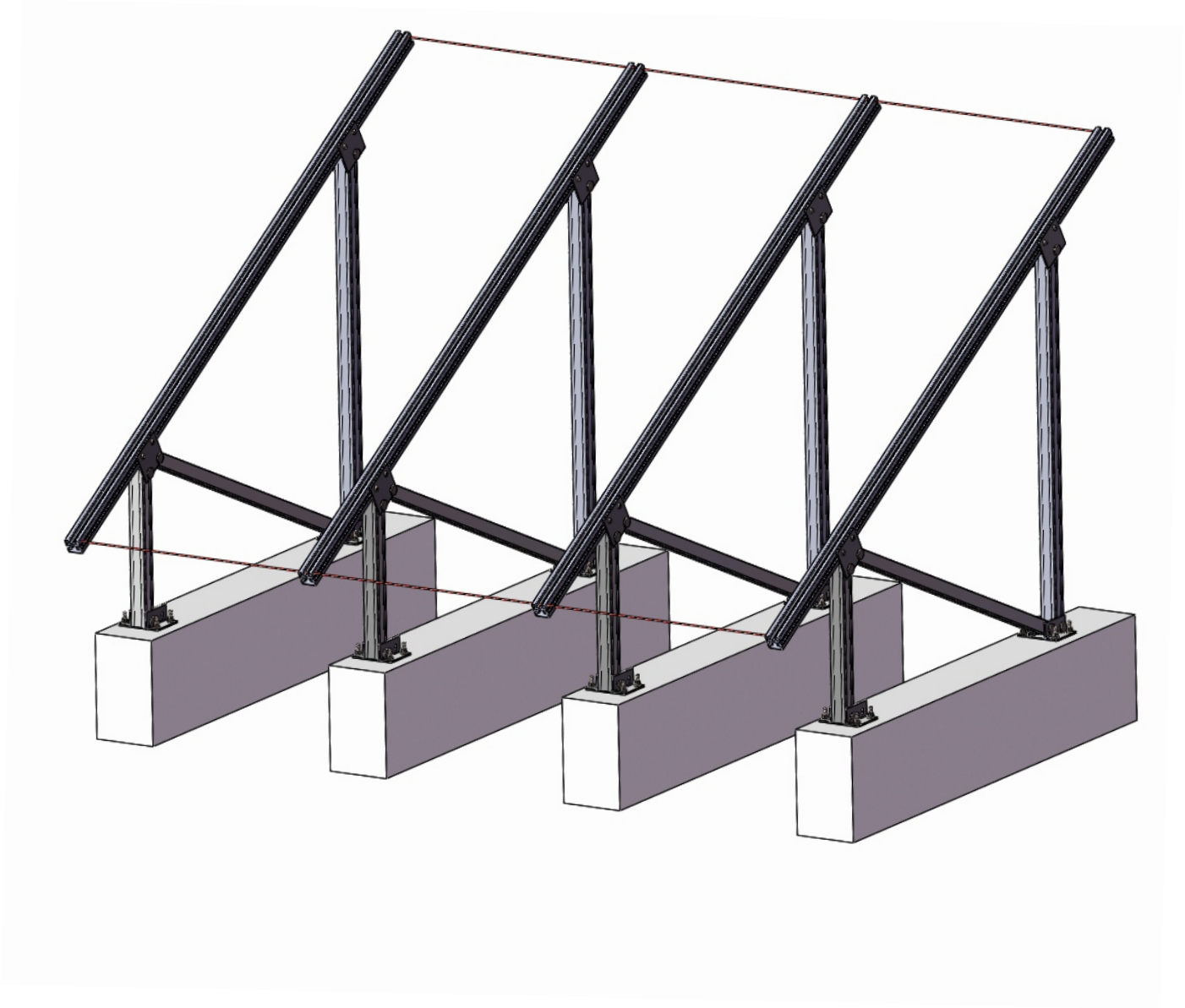
2.Repeat the above operation in accordance with the planned array layout. It is important to ensure that the beams are kept in line with each other.



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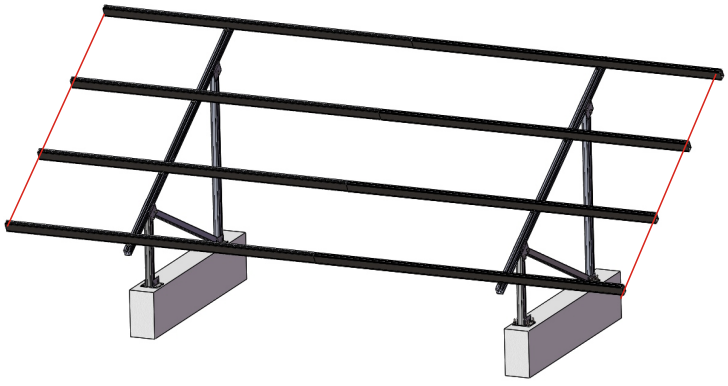
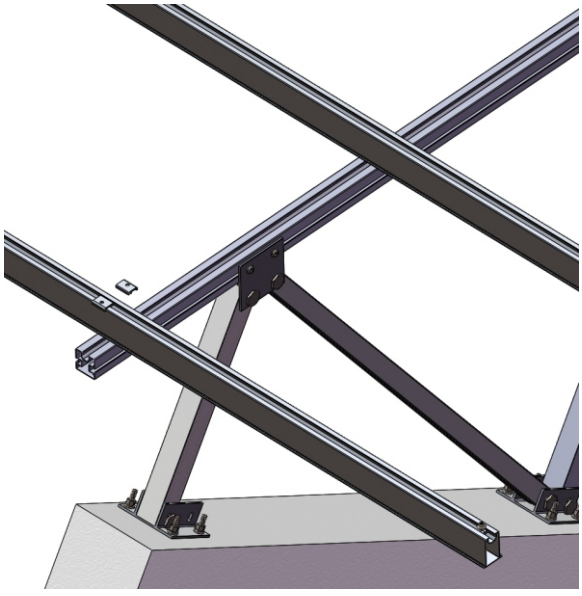
3.Place the HD Rails on the Pre-assembled Support, adjust the HD Rails to ensure that they are in line. Tighten both HD Rail Clamps to secure.





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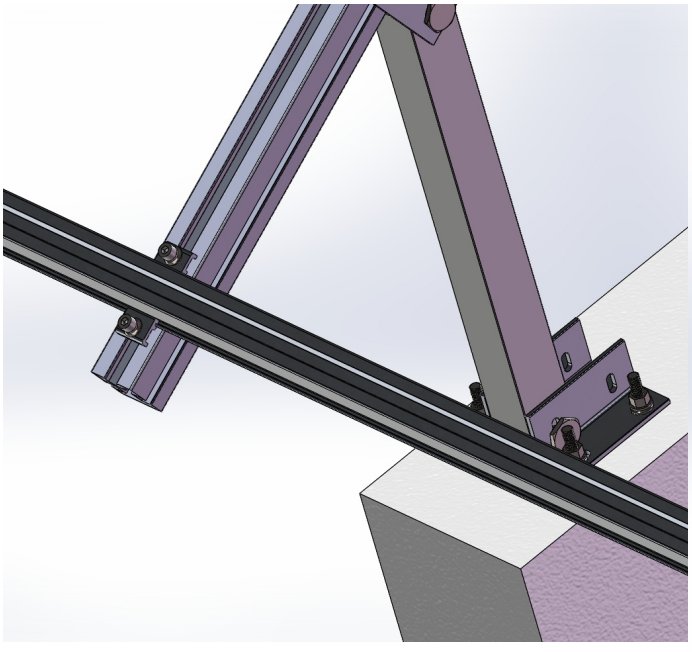

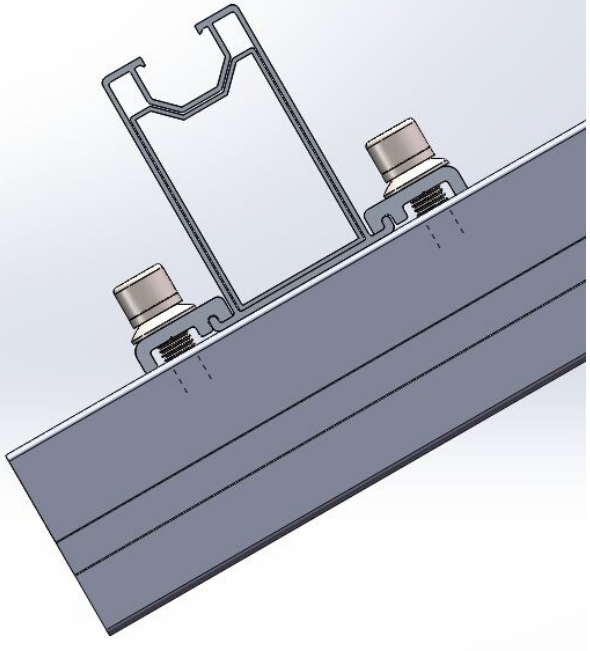

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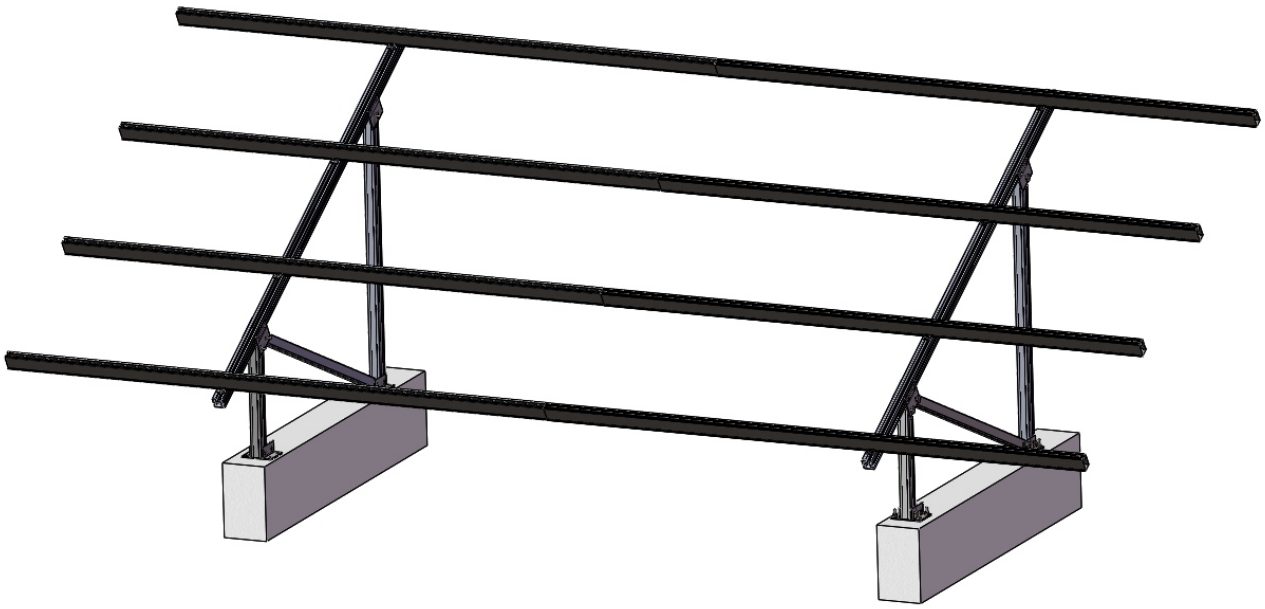

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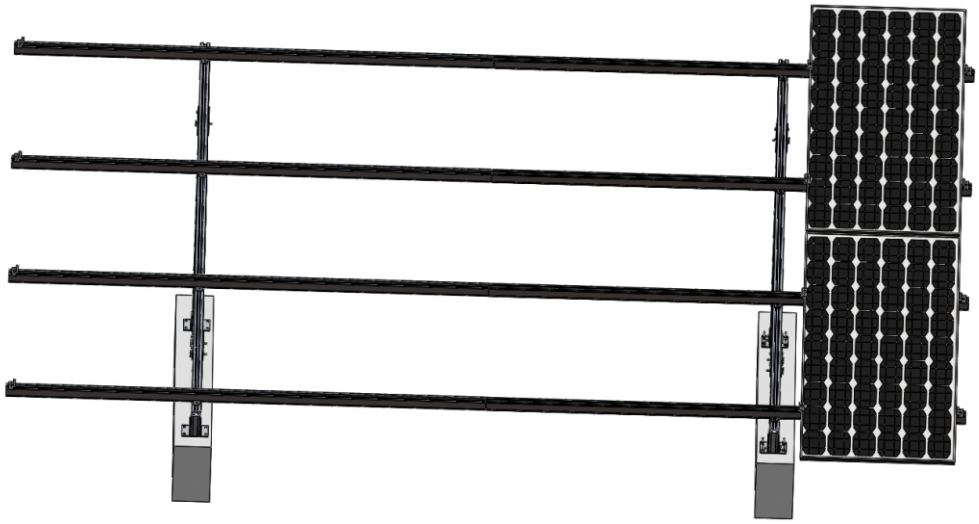
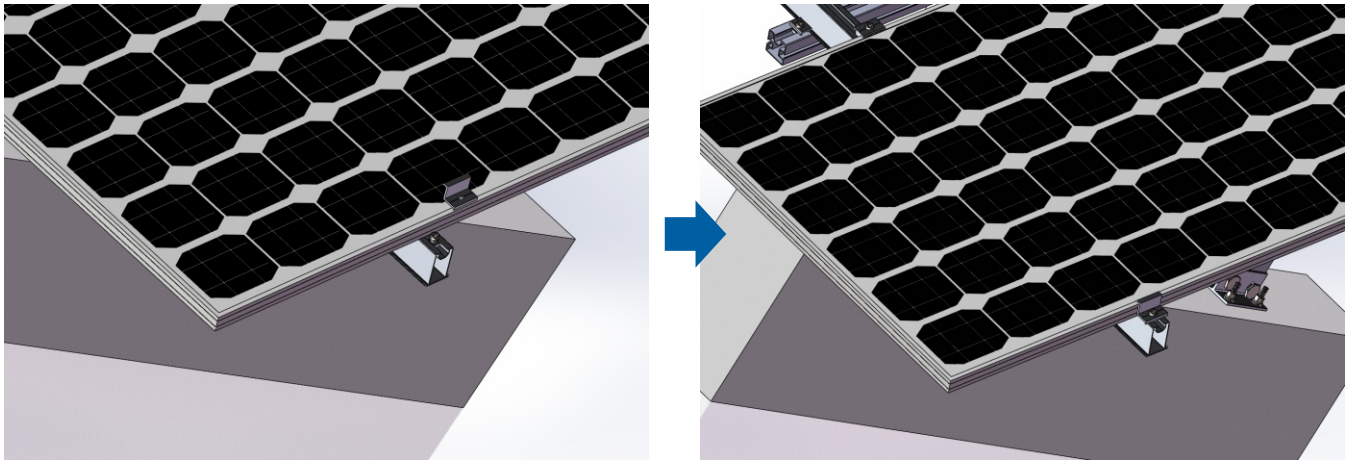
4. Place solar panels on the HD Rails.



5. Use end clamps with, M8*25 Hexagon screws and fixing nuts to attach solar panels to the rails. Adjacent solar panels are attached by using mid clamps with M8 Hexagon screws. (The hexagon screw length is determined by the solar panel's thickness)



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6. Repeat steps until installation is completed.