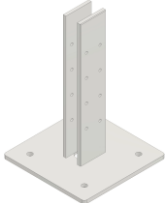
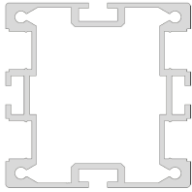
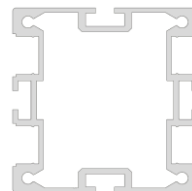
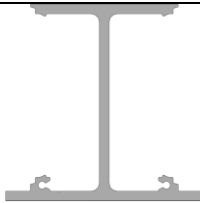

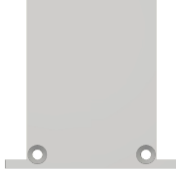

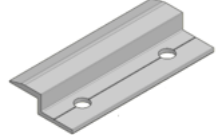


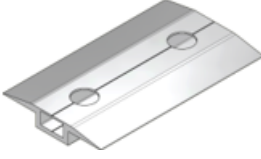

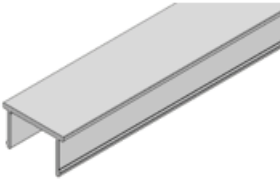
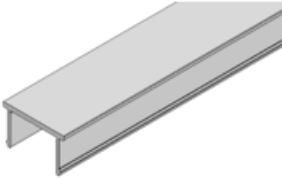
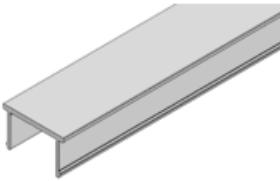
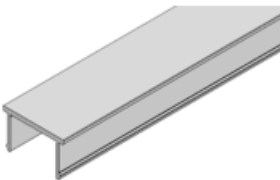
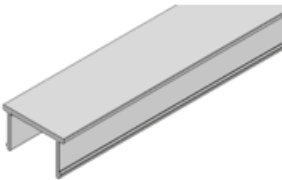
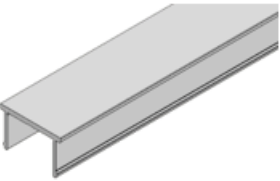
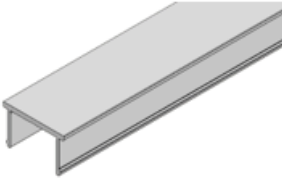
# PHOTOVOLTAIK

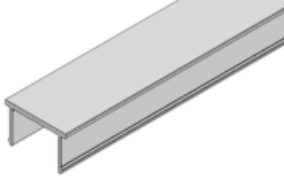

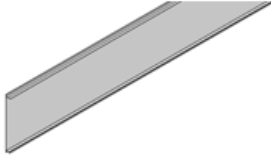
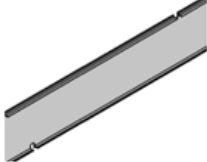
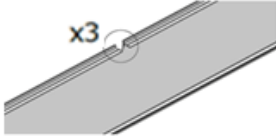
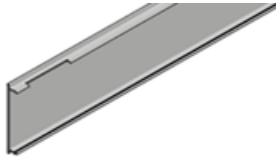
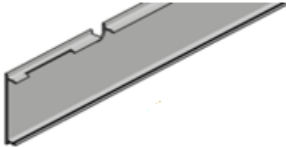
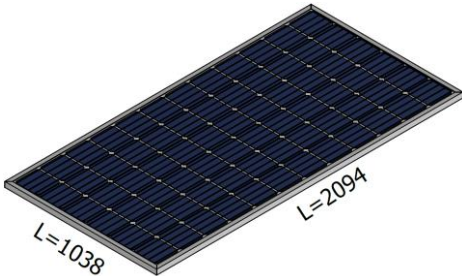
## Doppel-Carport




v.2301




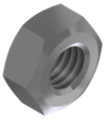


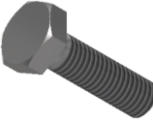
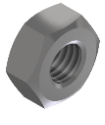


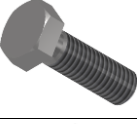
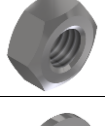
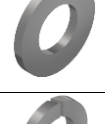

CARPORT - list of basic elements			
No.	Name	Drawing	Pcs.
1.	Foot		4
2.	High pole	 L=2647	2
3.	Low pole	 L=2368	2
4.	Main beam	 L=5430	2
5.	Purlin	 L=6283	6
6.	Main beam cap*		4
7.	Purlin cap*		12
8.	External pressure	 L=100	12


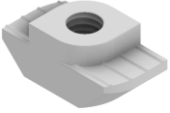



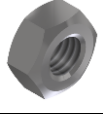
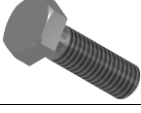
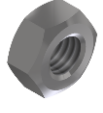
9.	Internal pressure	 L=100	24
10.	Pole connector	 L=220	4
11.	Grille for high pole 1*	 L=2645	4
12.	Cover for high pole 2*	 L=2641	4
13.	3* high pole grille	 L=2645	
14.	4* high pole grille	 L=2641	
15.	Low pole grille 1*	 L=2362	4
16.	Low pole grille 2*	 L=2358	4
17.	Low pole grille 3*	 L=2362	

18.	Low pole grille 4*	 L=2358	
19.	External clamping distance	 L=100	12
20.	Purlin cover 1*	 L=6283	2
21.	Purlin cover 2*	 L=6283	2
22.	Purlin cover 3*	 L=6283	8
23.	Main beam outer grille*	 L=5430	2
24.	Main beam inner grille*	 L=5430	2
25.	Frame photovoltaic module	 L=1038 L=2094	15

26.	Inverter		1
27.	PV cable extension with set of MC4 plugs		2
28.	Inverter mounting bracket * 100x100x6		2

\*Remark! Carport can optionally be equipped with grilles, caps and an inverter mounting kit. Please note that the grilles, caps and inverter mounting kit are an individual matter and are not included in every set.

Mounting kits			
Name	Drawing	Description	Quantity
<b>Mounting kit 1</b>		➤ Set of mounting anchors + injection mortar	4
<b>Mounting kit 2</b>		➤ 8x DIN 933 M8x80 A2	4
		➤ 8x DIN 934 M8 A2	
		➤ 8x DIN 125 M8 A2	
<b>Mounting kit 3</b>		➤ 4x DIN 912 M8x60 A2	4
<b>Mounting kit 4</b>		➤ 4x DIN 933 M10x35 A2	4
		➤ 4x DIN 934 M10 A2	
		➤ 4x DIN 125 M10 A2	
		➤ 4x DIN 127 M10 A2	
<b>Mounting kit 5</b>		➤ 4x DIN 933 M8x25 A2	12
		➤ 4x DIN 934 M8 A2	
		➤ 4x DIN 125 M8 A2	
		➤ 4x DIN 127 M8 A2	

<b>Mounting kit 6</b> (for 2094x1038x35 module)		➤ 2x DIN 912 M6x30 A2	36
		➤ 2x M6 hammer nut for 10 A2 slot	
<b>Mounting kit 7</b>		➤ 2x DIN 7991 M5x20 A2	4
<b>Mounting kit 8</b>		➤ 4x DIN 7981 4.8x19 A2	12
<b>Mounting kit 9</b>		➤ 4x DIN 933 M8x20 A2	1
		➤ 4x DIN 934 M8 A2	
		➤ 1x DIN 933 M10x130	
		➤ 1x DIN 934 M10 A2	

Before starting work related to the preparation and assembly of carport elements, it is necessary to determine the direction of entry and its orientation (slope slope direction). For carports with PV modules, it is recommended to slope the slope towards the south.

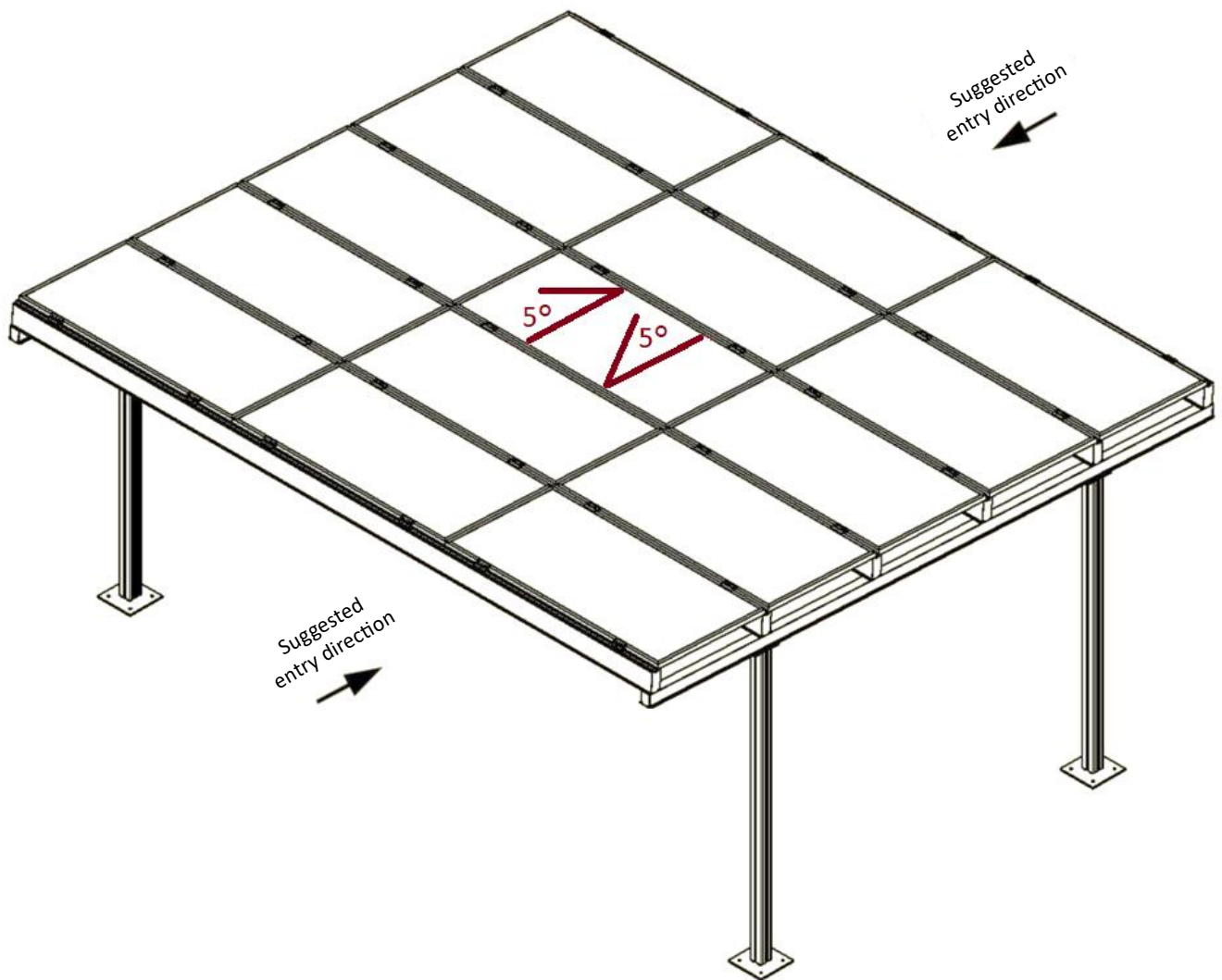


Figure1. Diagram of the possible setting of carport.



1. Substrate preparation:

- Structures should be placed on foundation feet poured in the ground or on a reinforced concrete slab. Foundation feet level relative to each other!
- In the case of foundation feet, it is recommended to make a foot with dimensions in a projection of 600x600 [mm] and depth to the local – conventional freezing zone.
- The electrical input to the carport should be made through properly prepared channels in the foundation foot.

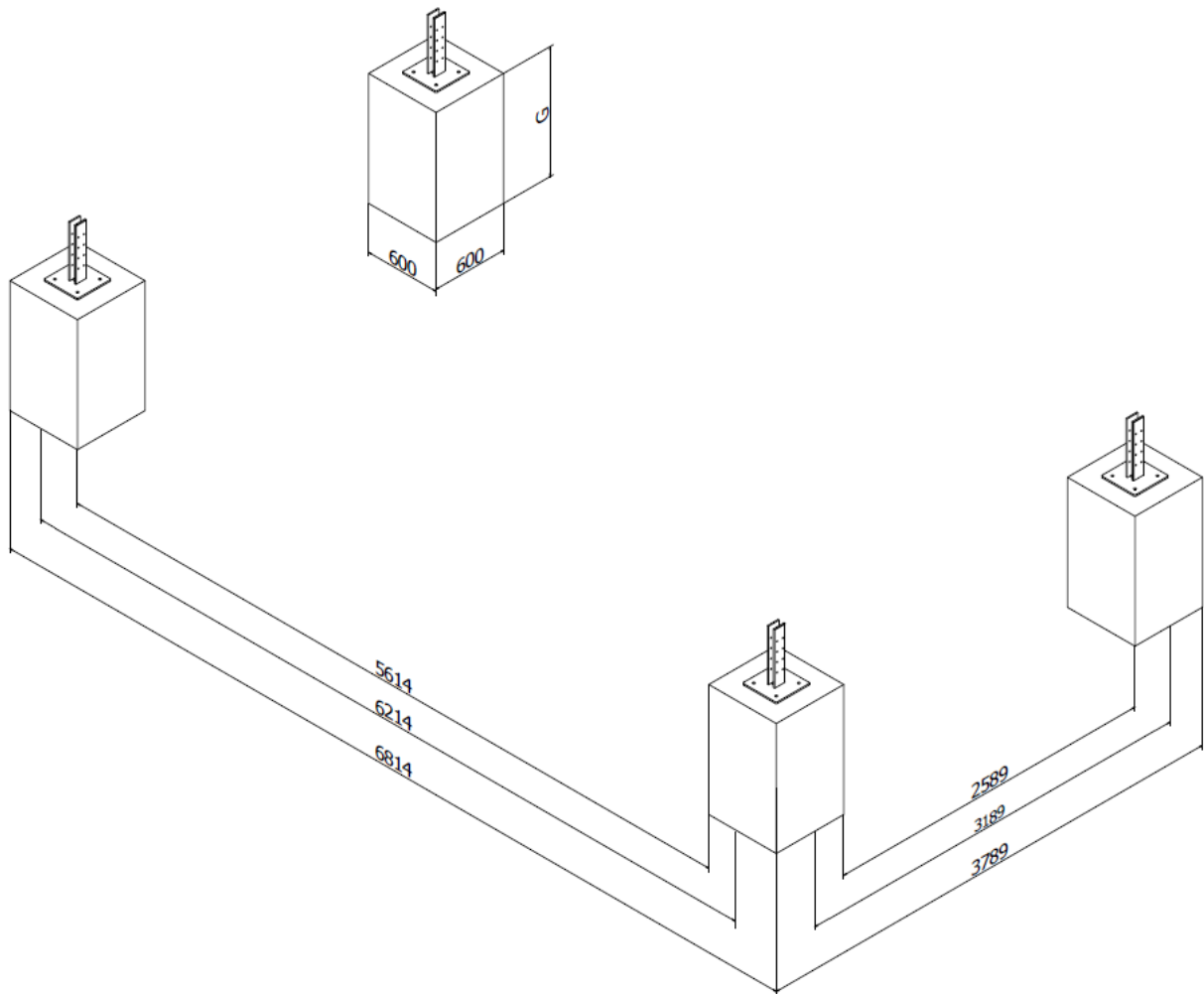


Figure 2. Foundation spacing

- Before starting the assembly, it is necessary to determine the place of attachment of the inverter and, accordingly, to carry the wiring through the channel in the foundation. The minimum length of wiring is 3.5m (spare).

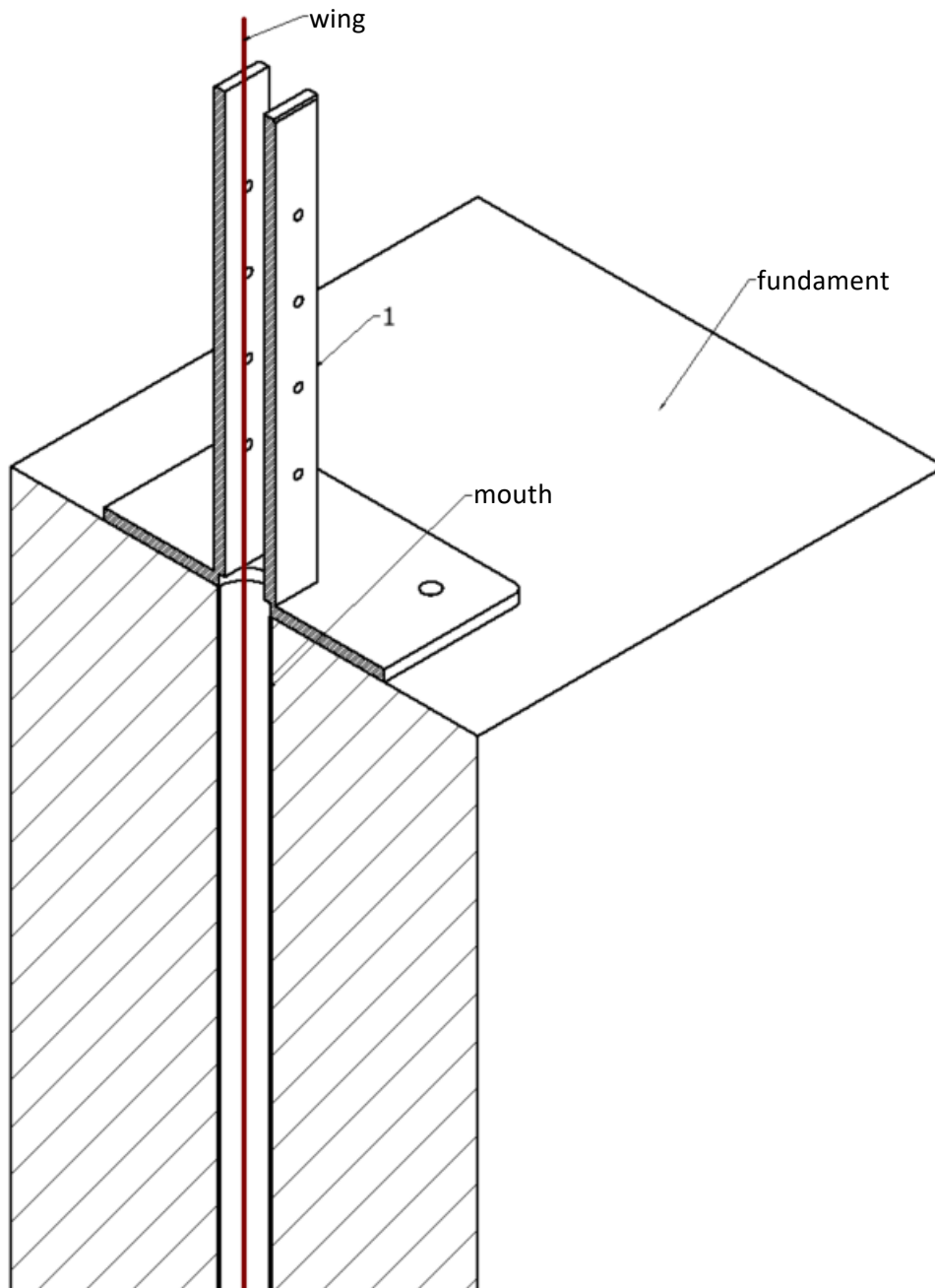


Figure 3. Cable routing channel

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Remark! It is permissible to fix the inverter on a pole. The choice of the pole on which the inverter is to be located remains an individual matter.

- Drill holes in the pole on which the inverter will be fixed.
- Lead the wiring to the inverter through the hole.

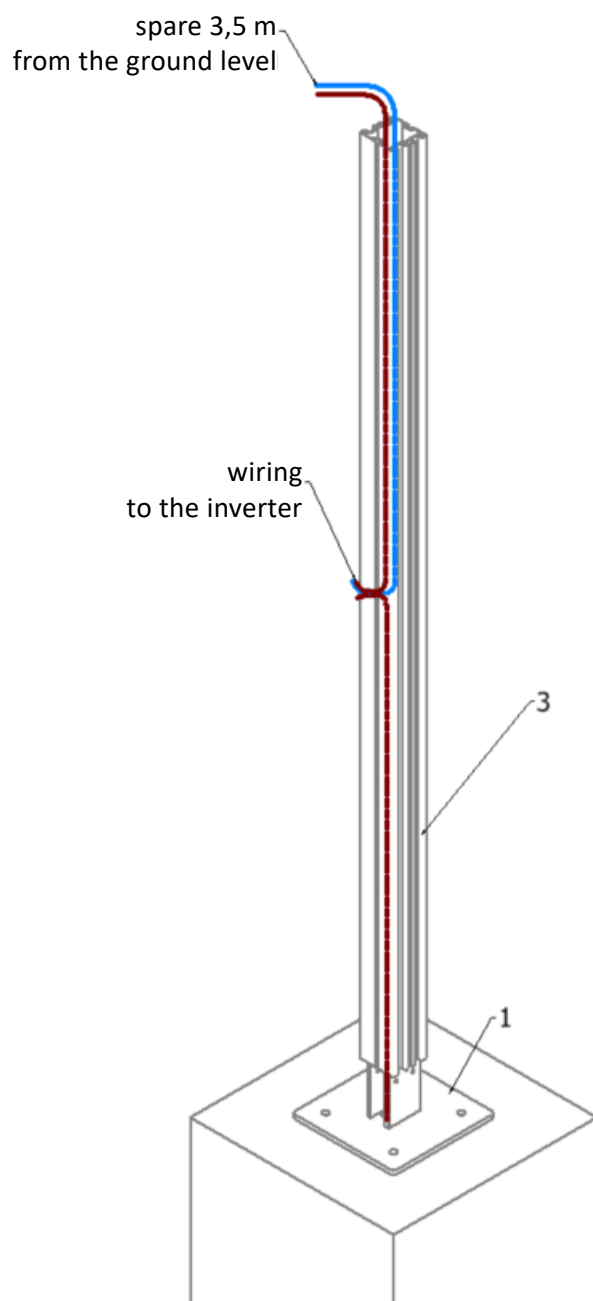


Figure 4. Cable route in the pole

2. Fixing feet in poles.

- Connect the elements to each other, fixing the foot in the pole.
- Use mounting kit 2.
- Perform the operation 2 times, for high (2) and low (3) poles.

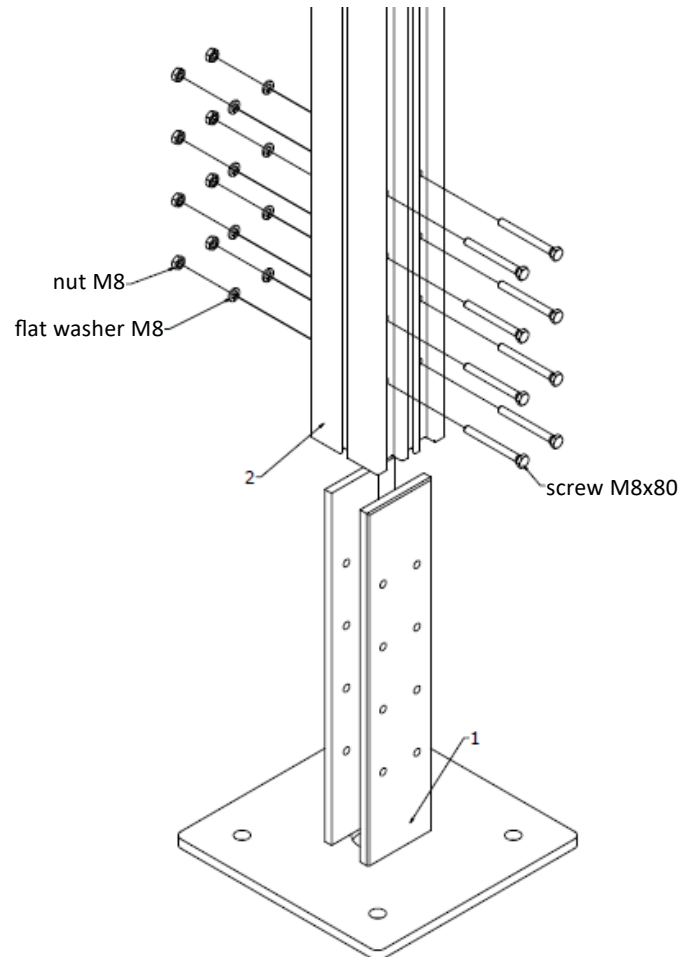


Figure 5. How to mount the foot in the pole

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3. Fastening of pole connectors.

- Fix column connectors in the upper parts of the columns using mounting kit no. 3 (figure 6).

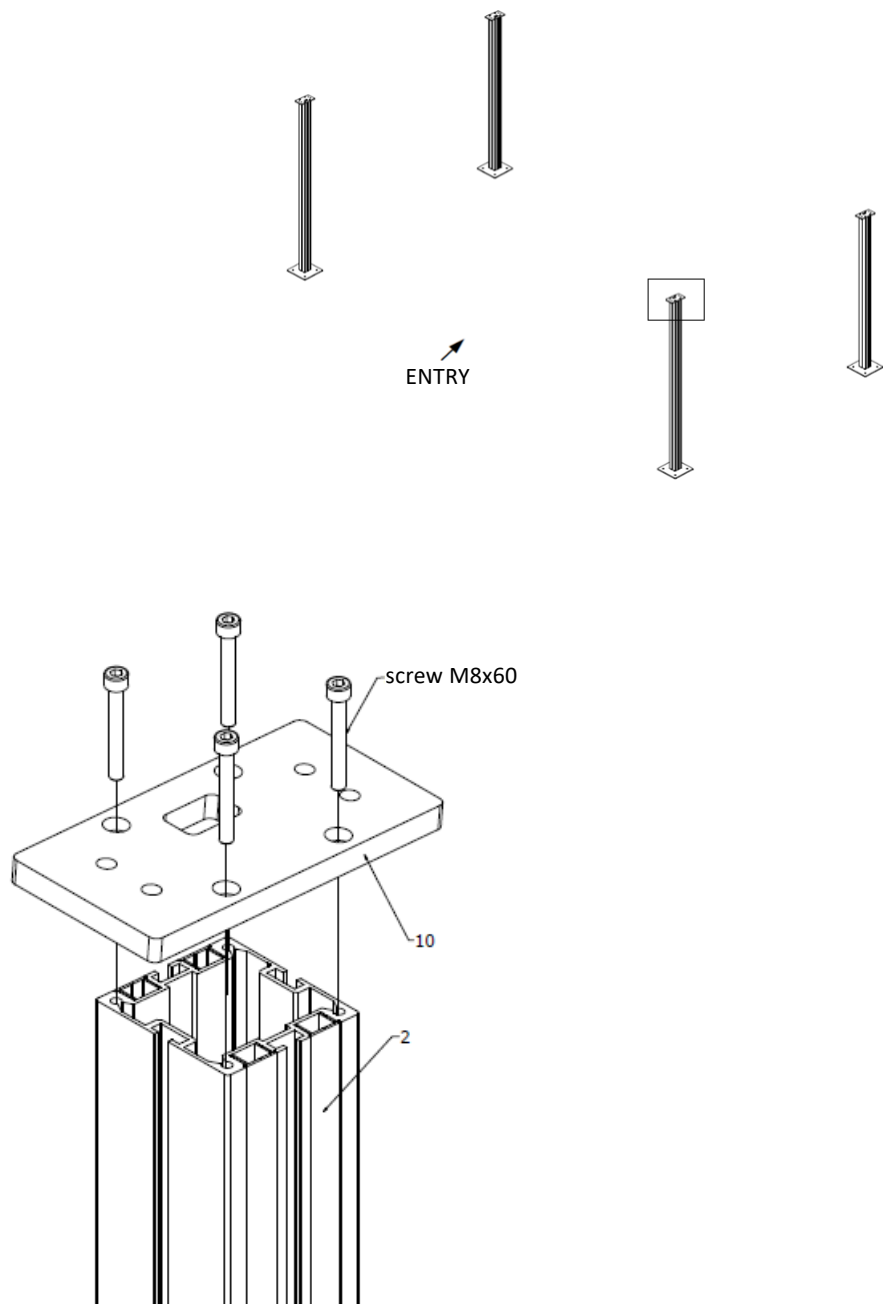


Figure 6. Method of mounting the pole connector with the pole

#### 4. Fastening of main beams.

- The main beams should be attached to the previously placed column connectors, so that both parts of the carport consist of a high and low pole, respectively.
- It should be remembered that the column connectors (10) are located relative to the slope.
- Repeat the action for the other side of the carport.
- Attach both main beams (4) using mounting kit no. 4 (Figure 7).

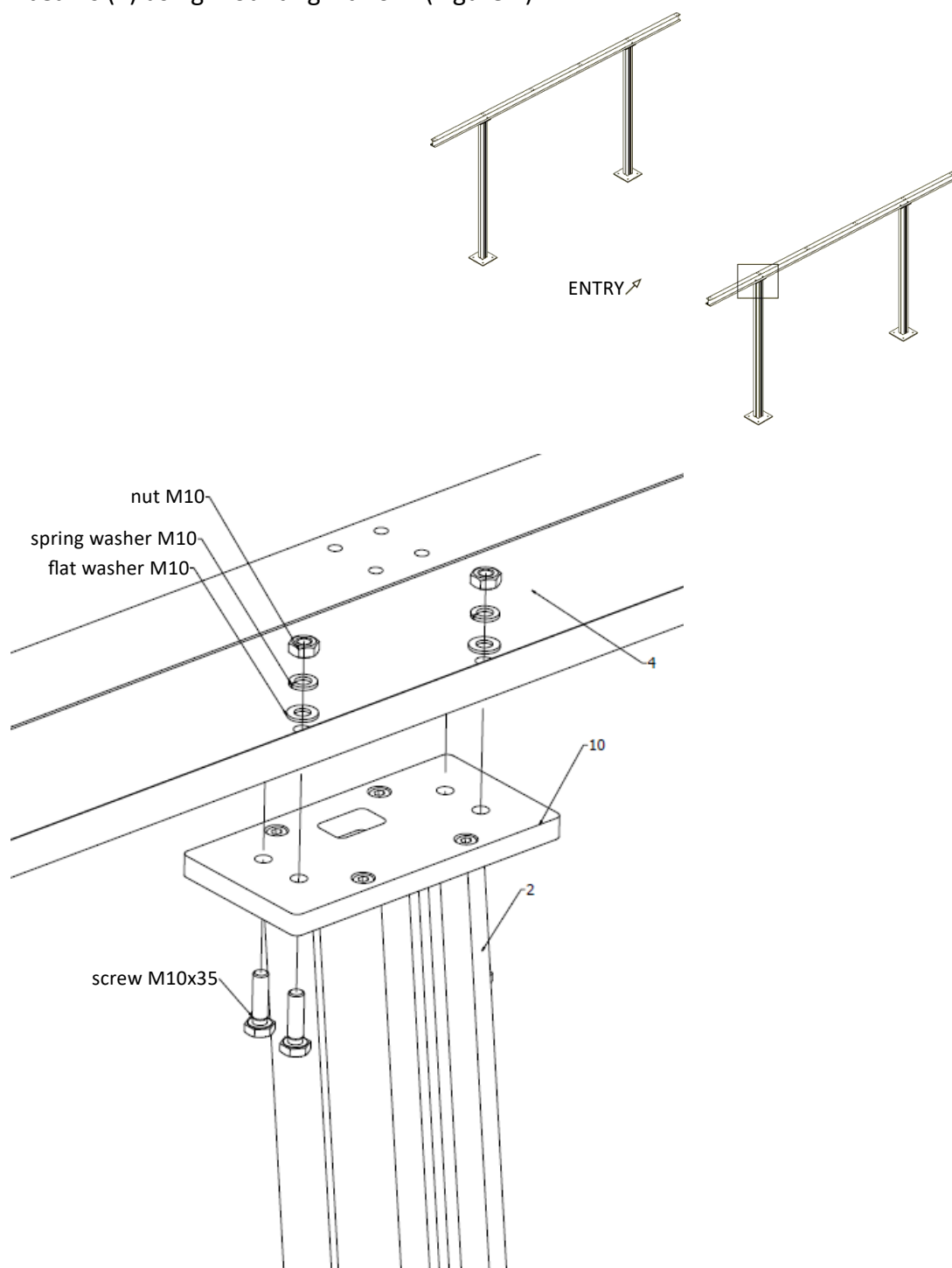


Figure 7. How to mount the main beam

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5. Preparation of the structure for anchoring.

- Remember that the created elements are positioned relative to the slope.
- Prepared elements should be placed on the ground at spacing according to Figure 8.
- After completing all the above steps, you need to set the riser on the poles and anchor the feet.

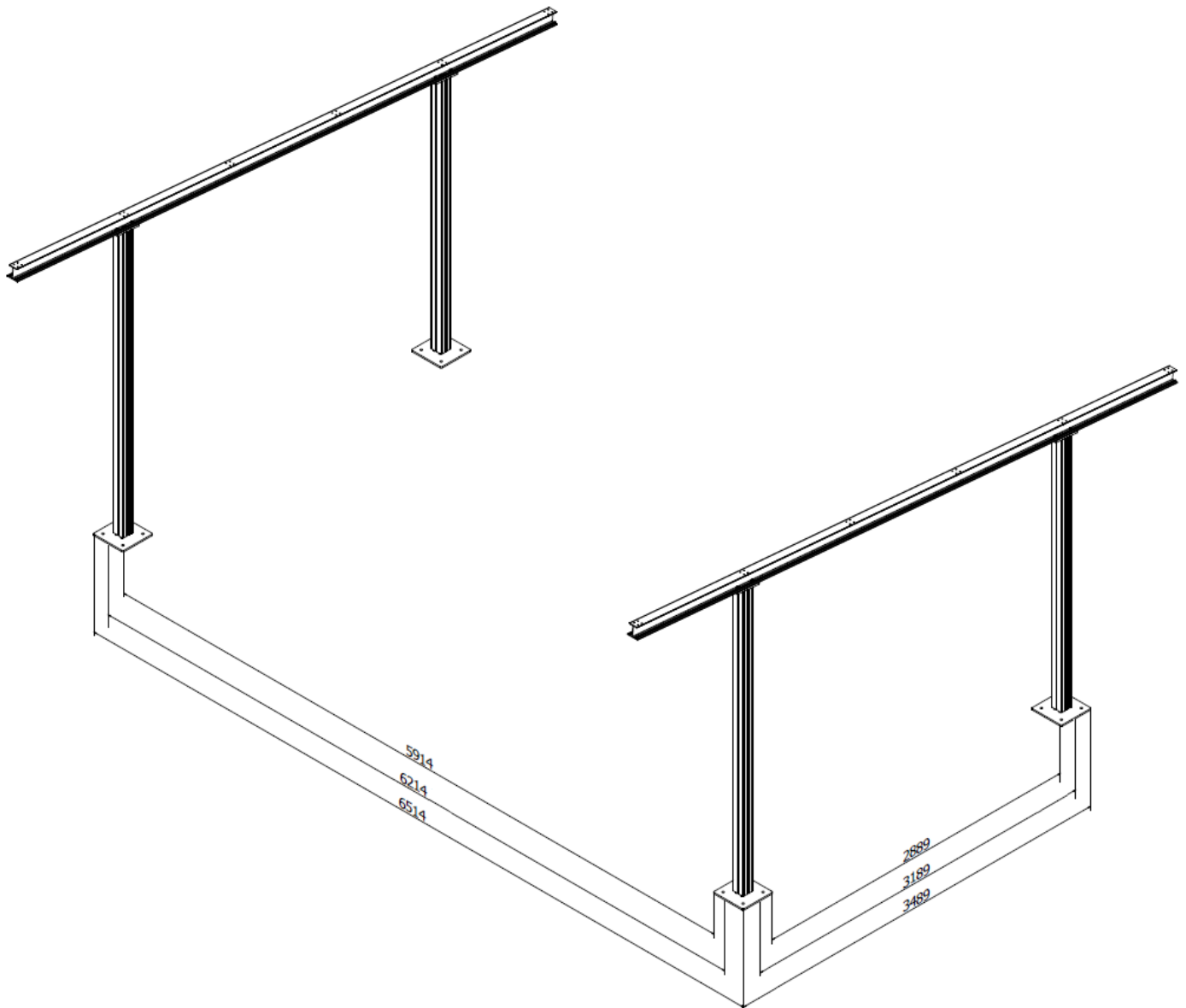


Figure 8. Foot spacing

6. Fixing purlins.

- When installing, take into account the cable routing through the holes in the purlin! (see Figure 20).
- Attach the purlins to the main beams using mounting kit no. 5.

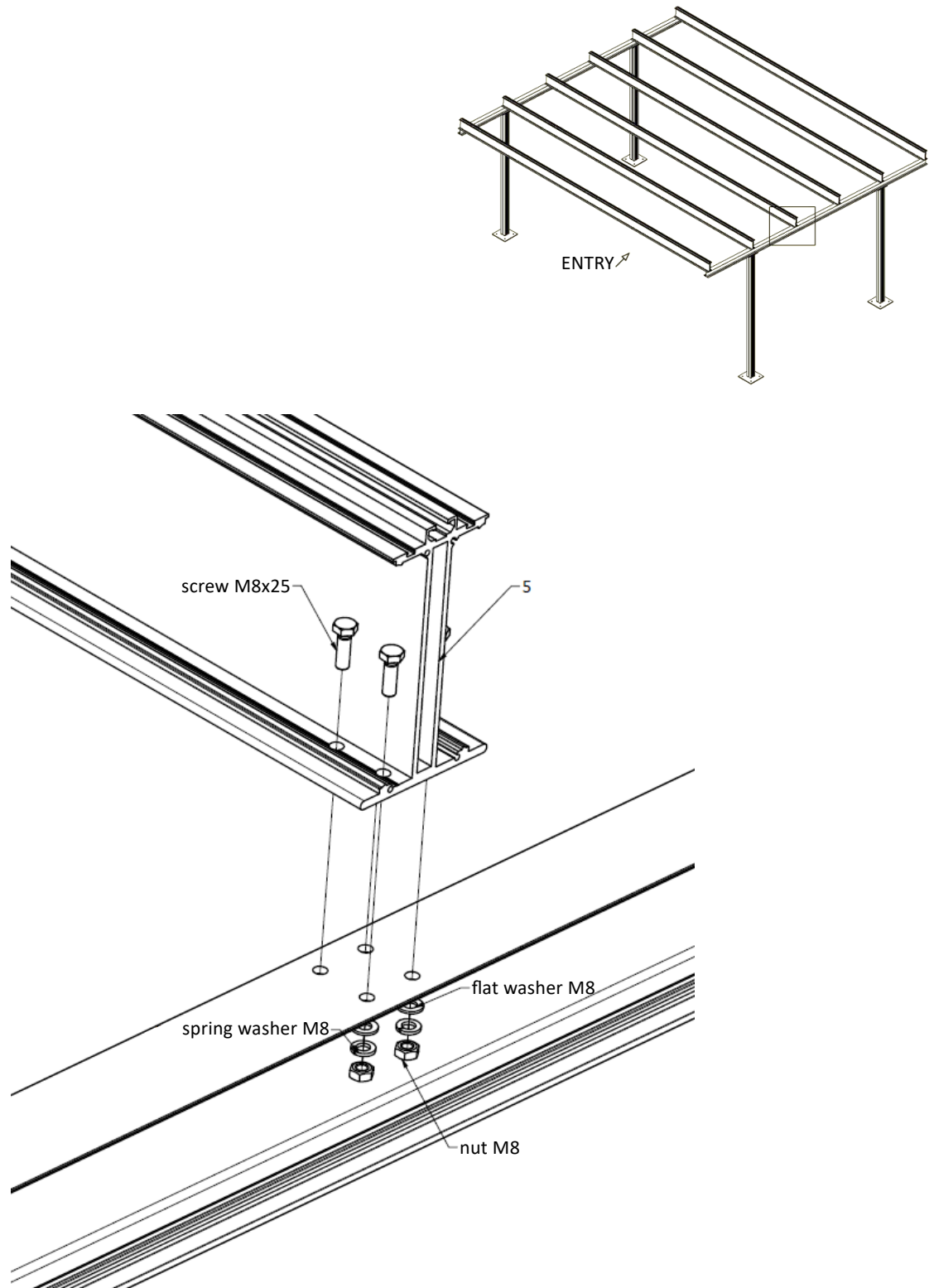


Figure 9. Method of mounting purlins



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7. Installation of modules.

- Place the frame modules with the longer edge on the purlins, while the shorter edges should be placed together so that the extreme sides of the frame modules are flush with the front of the purlin.

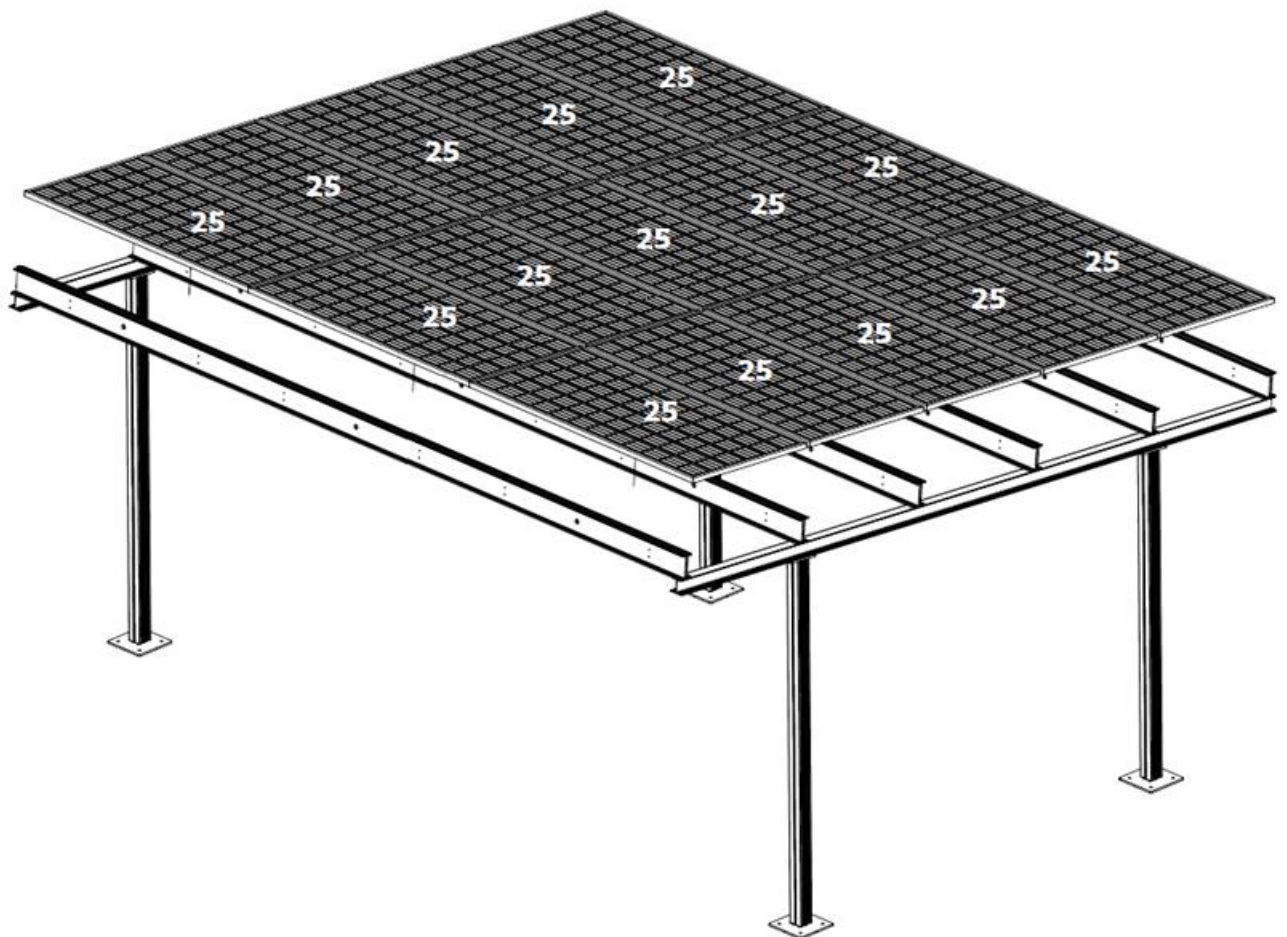


Figure 10. Diagram of the arrangement of modules on the structure

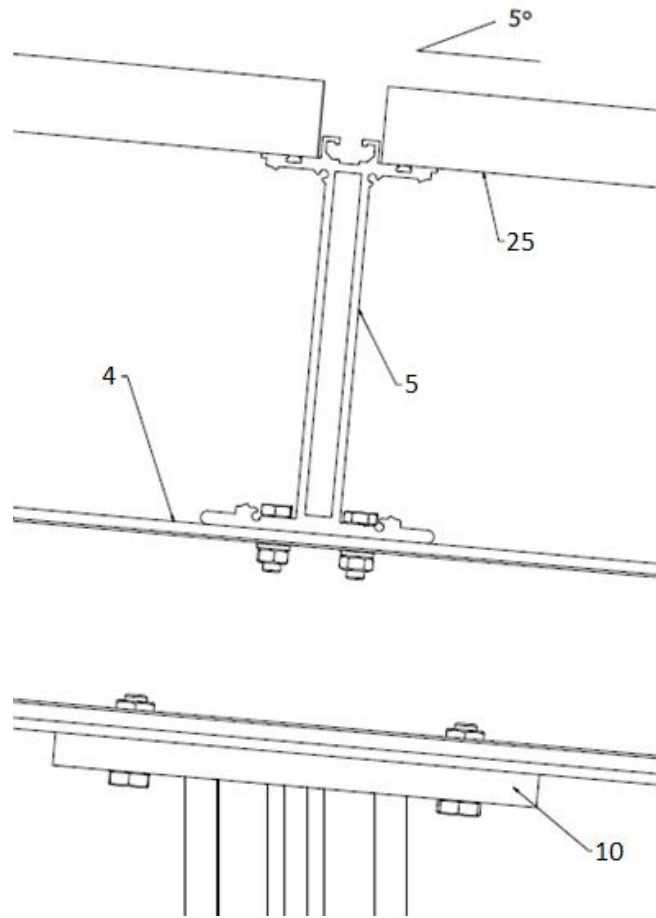


Figure 11. Diagram of the arrangement of modules on the structure projection from the side

- To mount the photovoltaic modules on the extreme purlins, use the external pressure distance, external pressure and mounting kit no. 6, as shown in Figure 12.

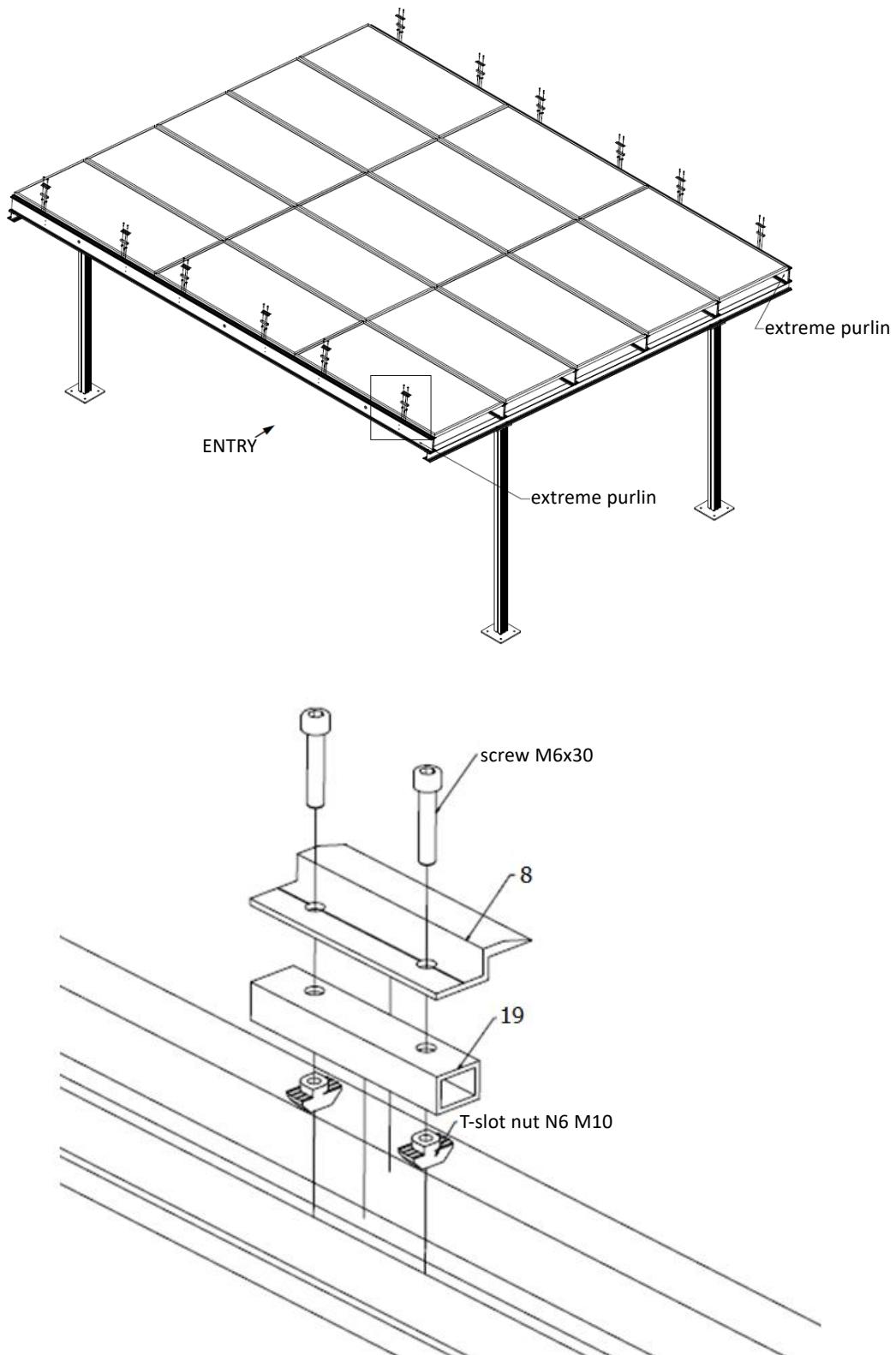


Figure 12. How to mount the modules on the end purlins

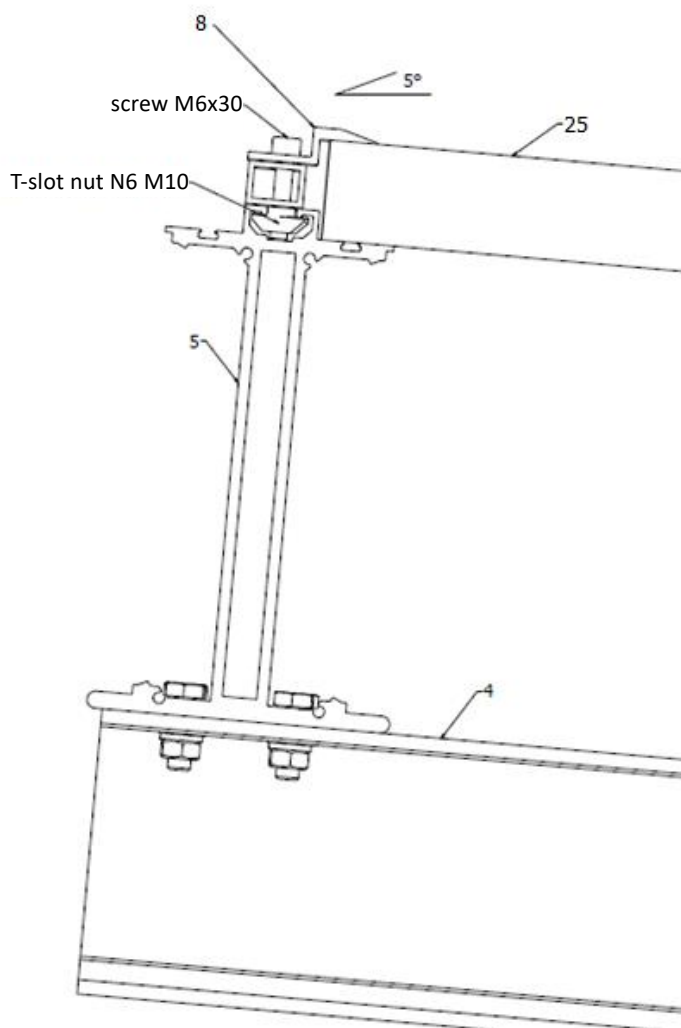


Figure 13. The method of mounting the modules on the end purlins, view from the side

- To mount the photovoltaic modules on the central purlins, use the internal pressure and mounting kit no. 6, as shown in Figure 14.

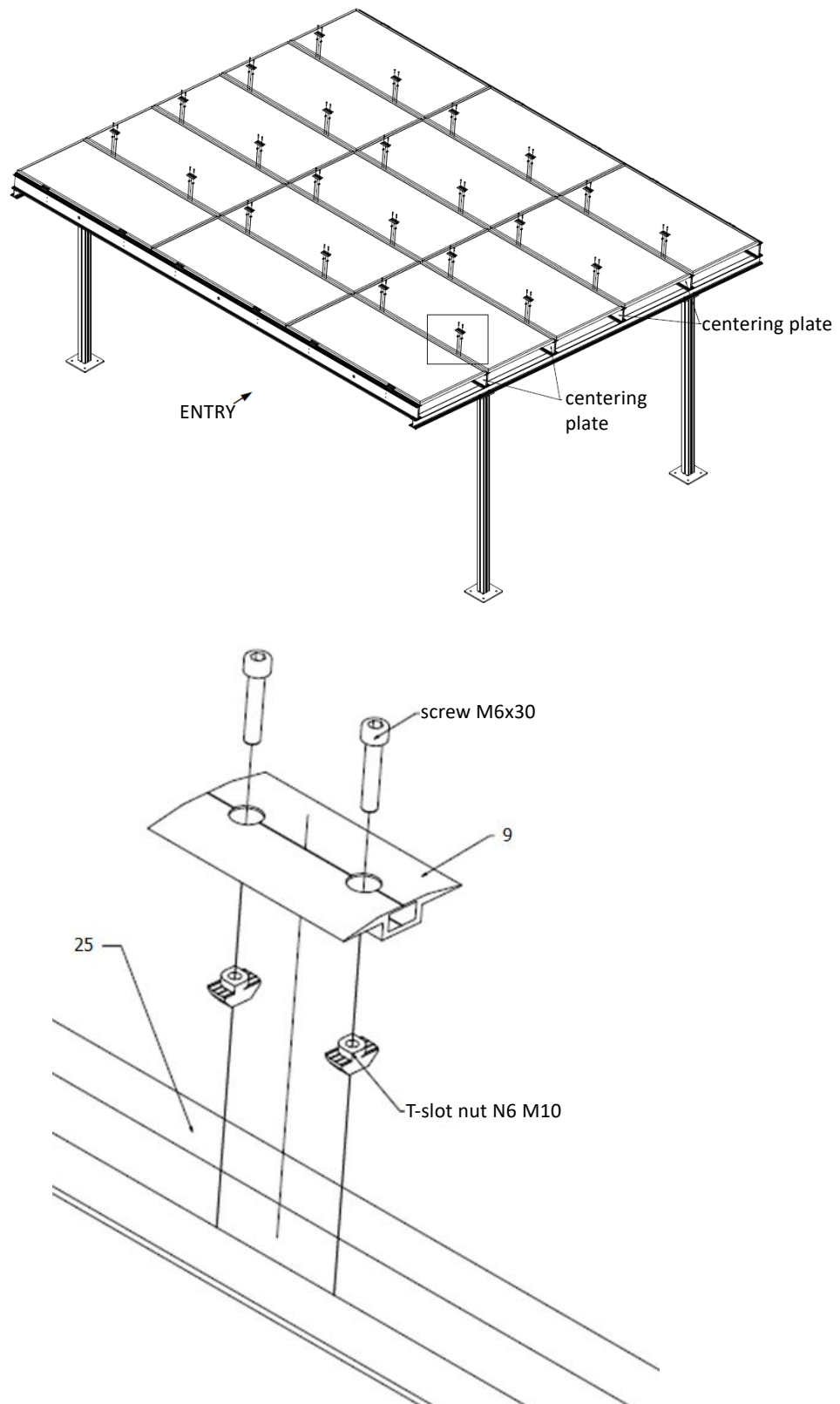
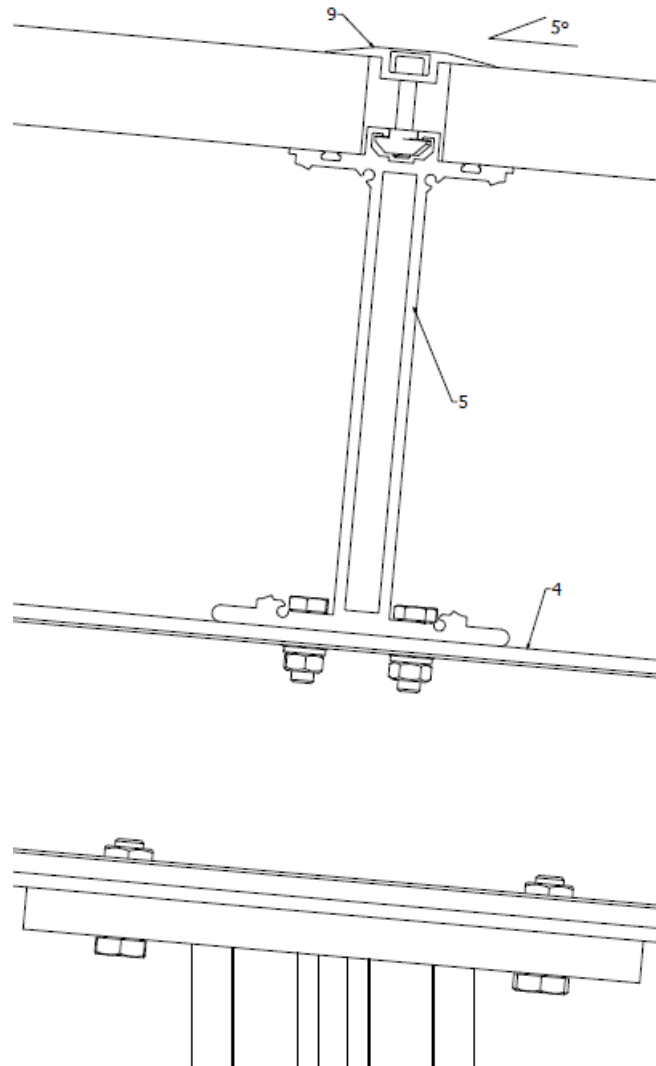


Figure 14. How to mount the modules on the central purlins



**Figure 15. How the modules are mounted on the central purlins, a side view**

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8. Fastening of pole grilles.

- Fix the pole grilles by "clicking".
- When installing, pay attention to the size of the grilles.
- In the grille, which will be located on the pole with the inverter, drill a hole to lead out the cables.

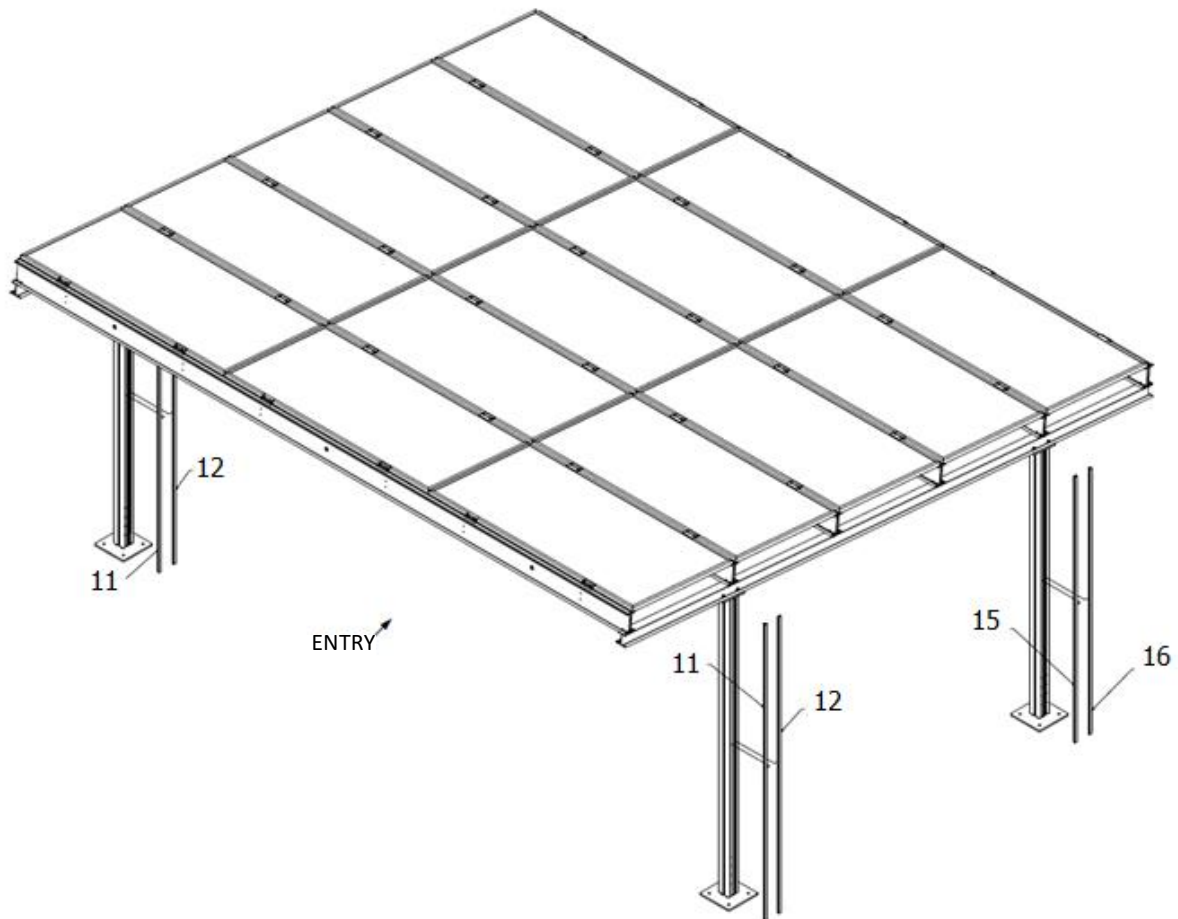


Figure 16. Method of mounting column grilles: left isometric projection

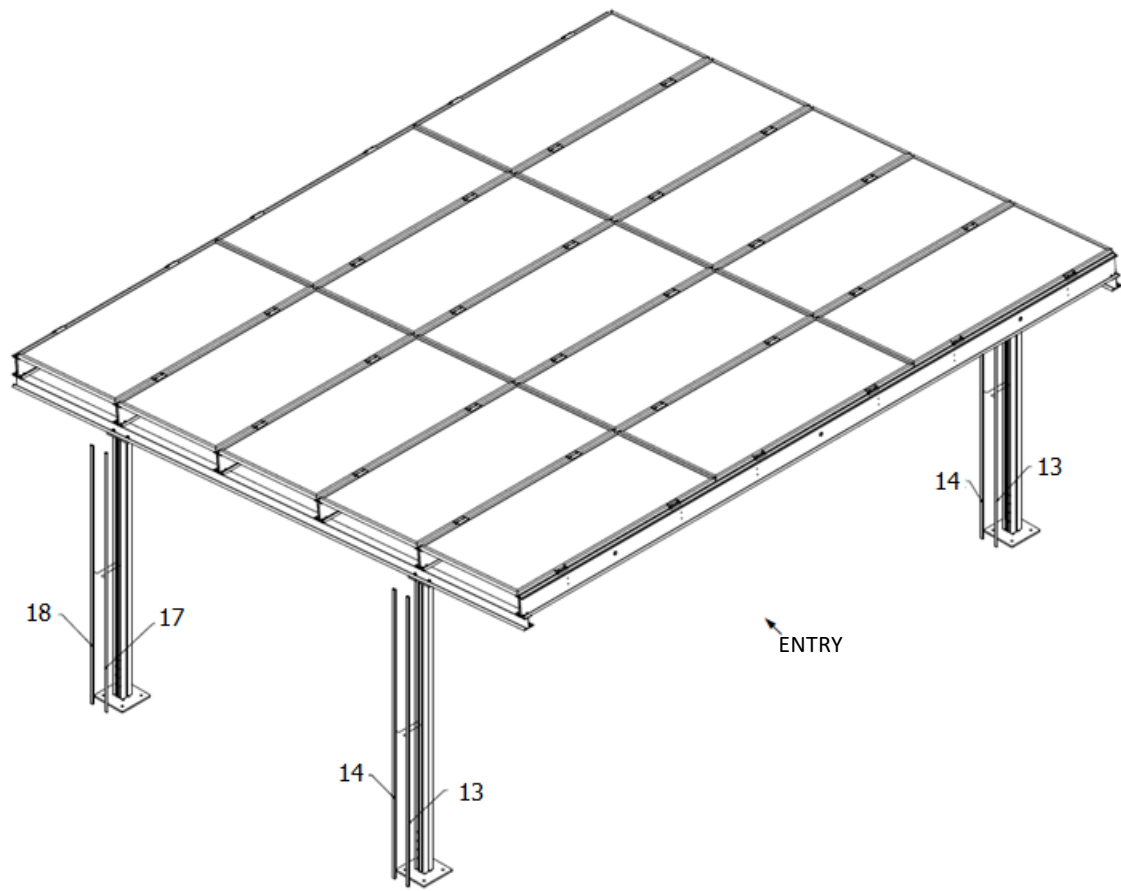


Figure 17. Method of mounting on column grilles: right isometric projection



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## 9. Connection of photovoltaic installation

Remark! The mounting of the inverter in the drawing is illustrative. The location of the inverter remains an individual matter.

- Attach the inverter to the pole using two brackets (2, 8) according to Figure 18.
- Use mounting kit no. 9.

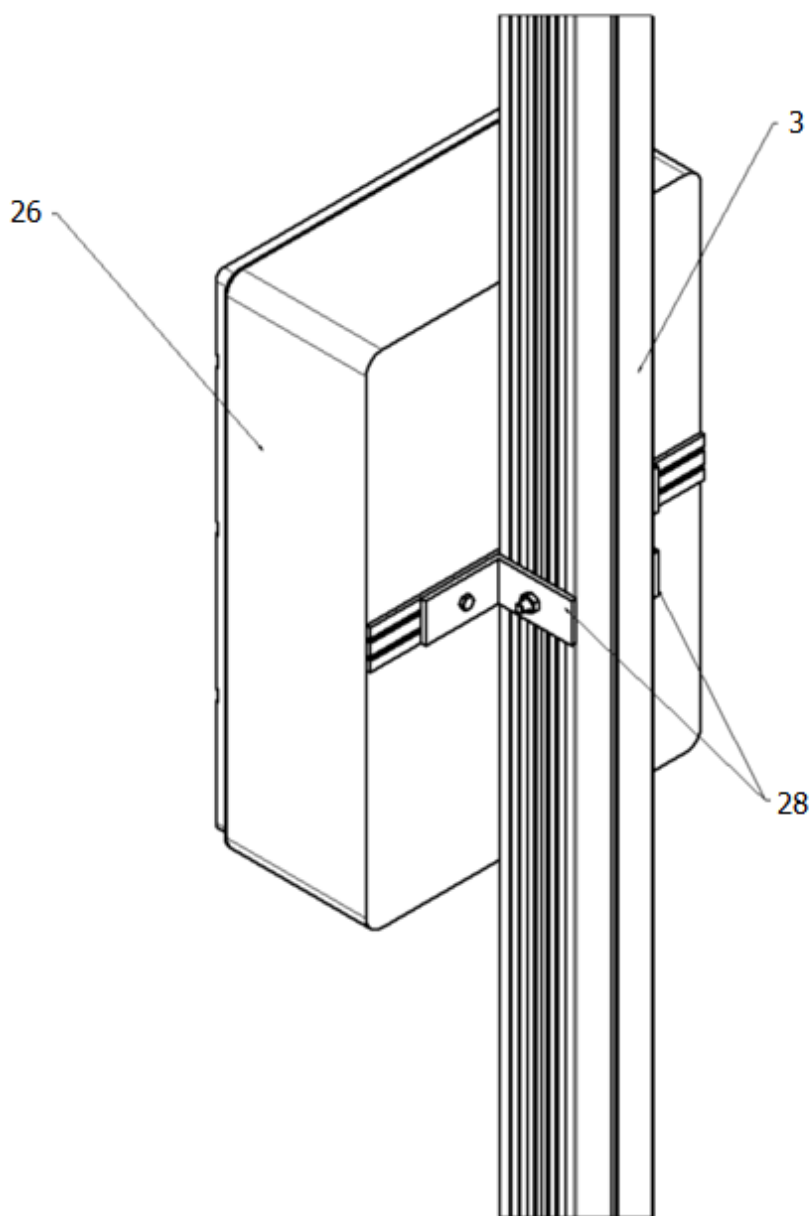


Figure 18. The method of attaching the inverter to the pole.

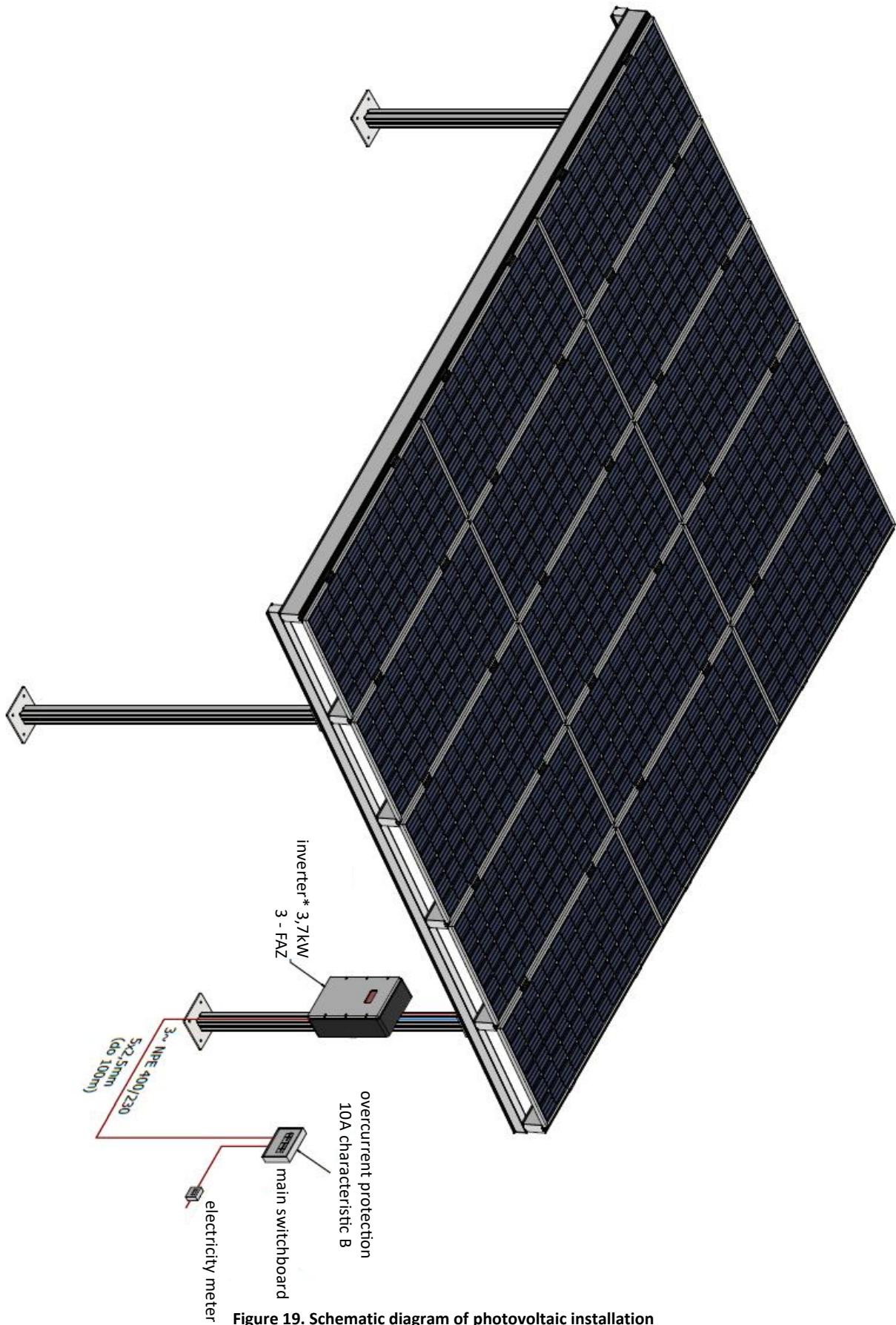


Figure 19. Schematic diagram of photovoltaic installation

- Route cables through the structure using channels in the main beams and purlins and slots in the module frames.

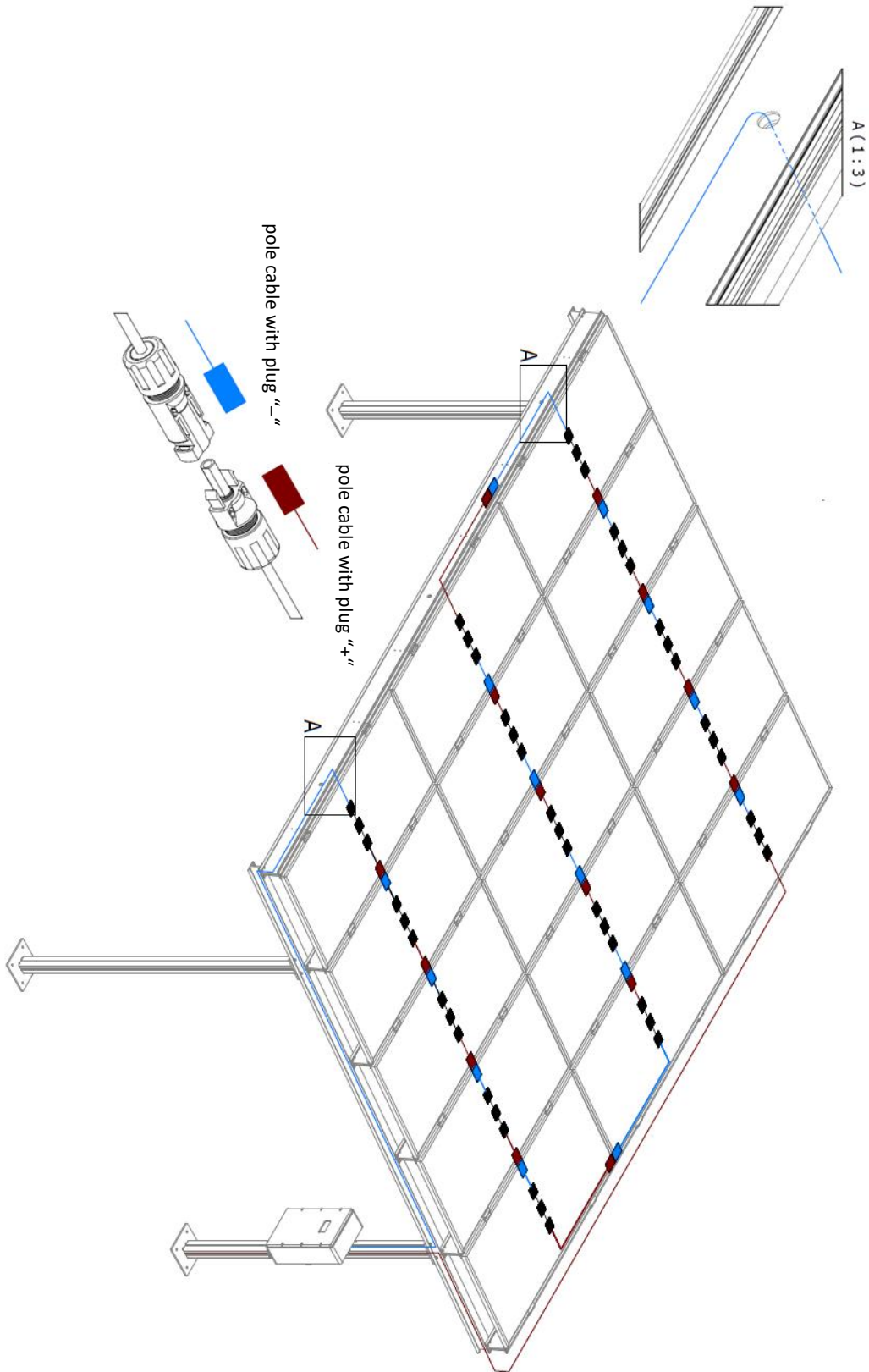


Figure 20. Wiring diagram - cable route

10. Fastening of main beam and purlins grilles

- Attach the main beam grilles by "clicking".
- When installing, pay attention to the holes made for cables.

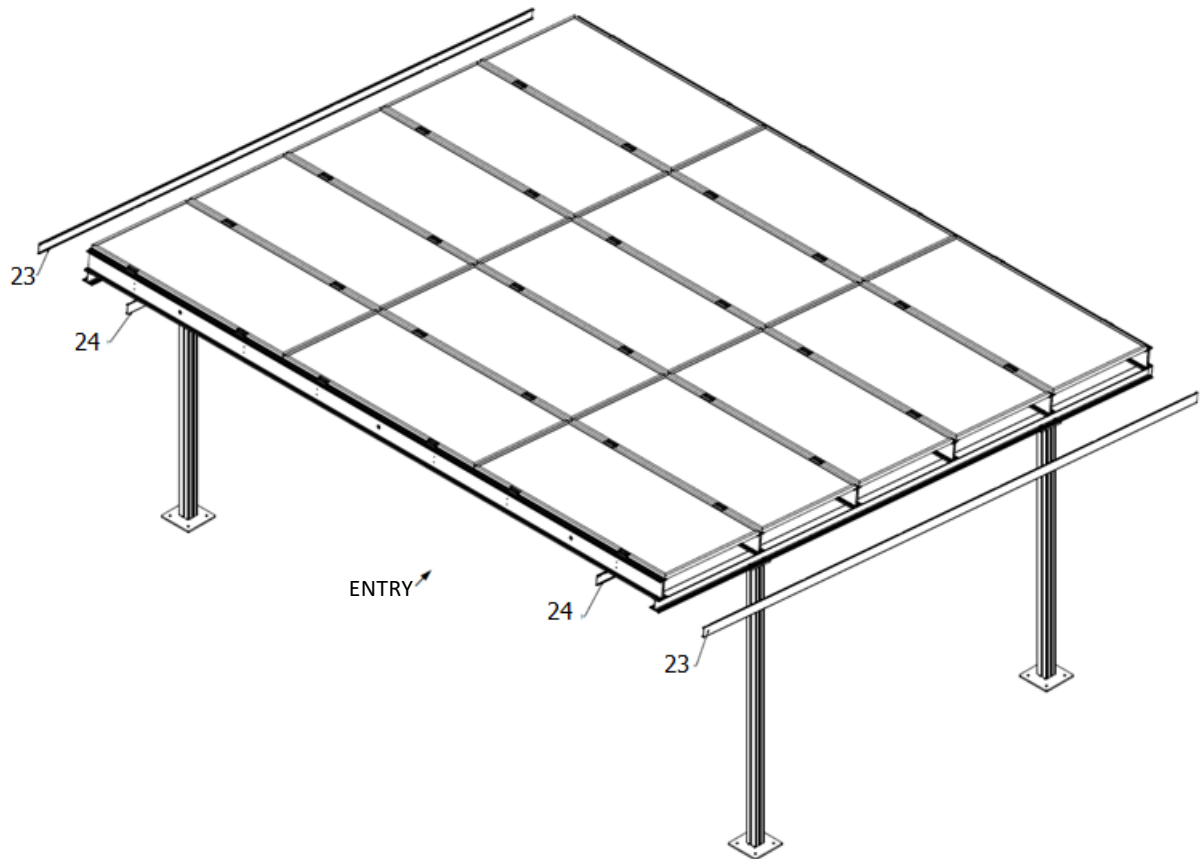


Figure 21. How to mount the main beam grilles

- 
- Attach the purlin grilles by "clicking".
  - When installing, pay attention to the holes made for cables.

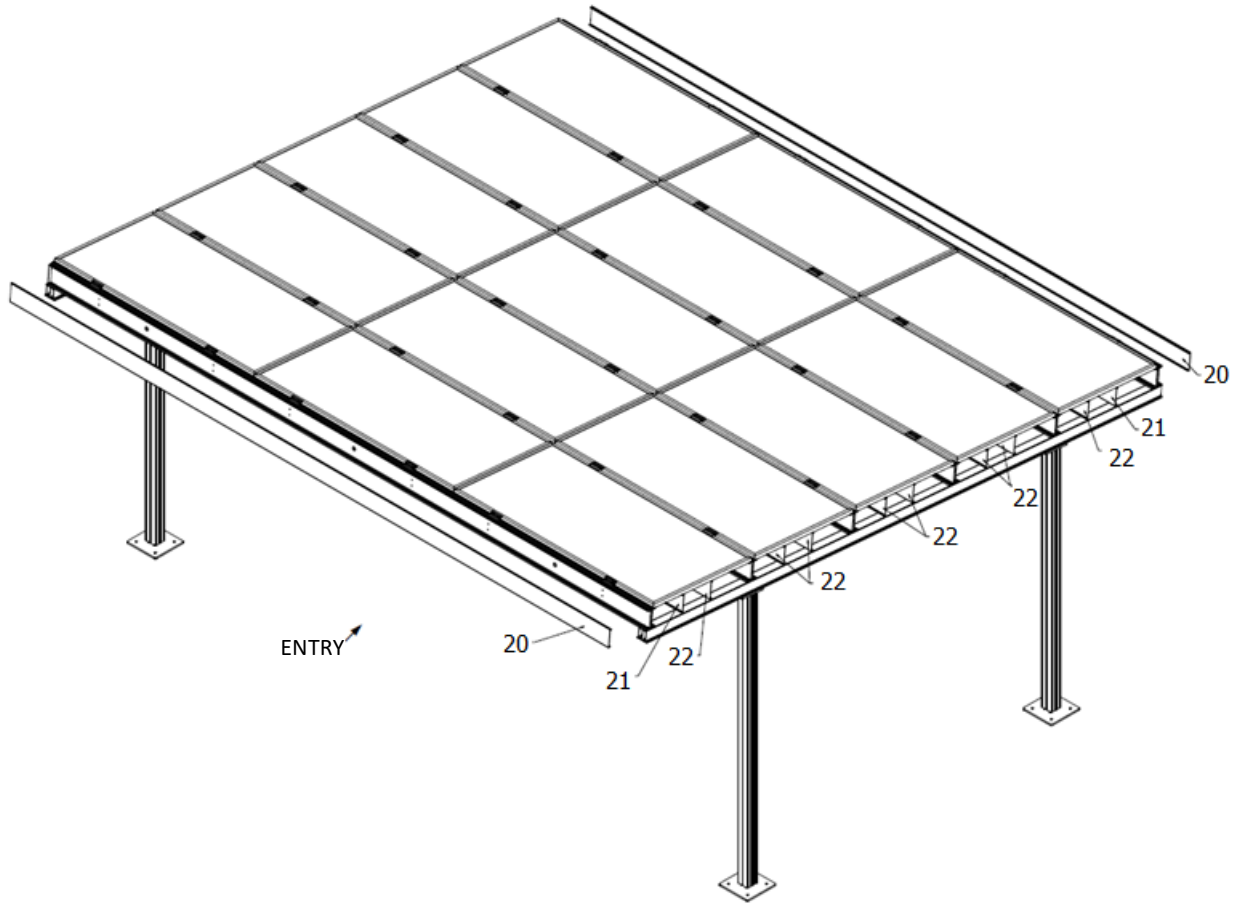


Figure 2 2. How to install purlin grilles

11. Mounting the main beam cap

- To attach the main end cap use mounting kit no. 7.

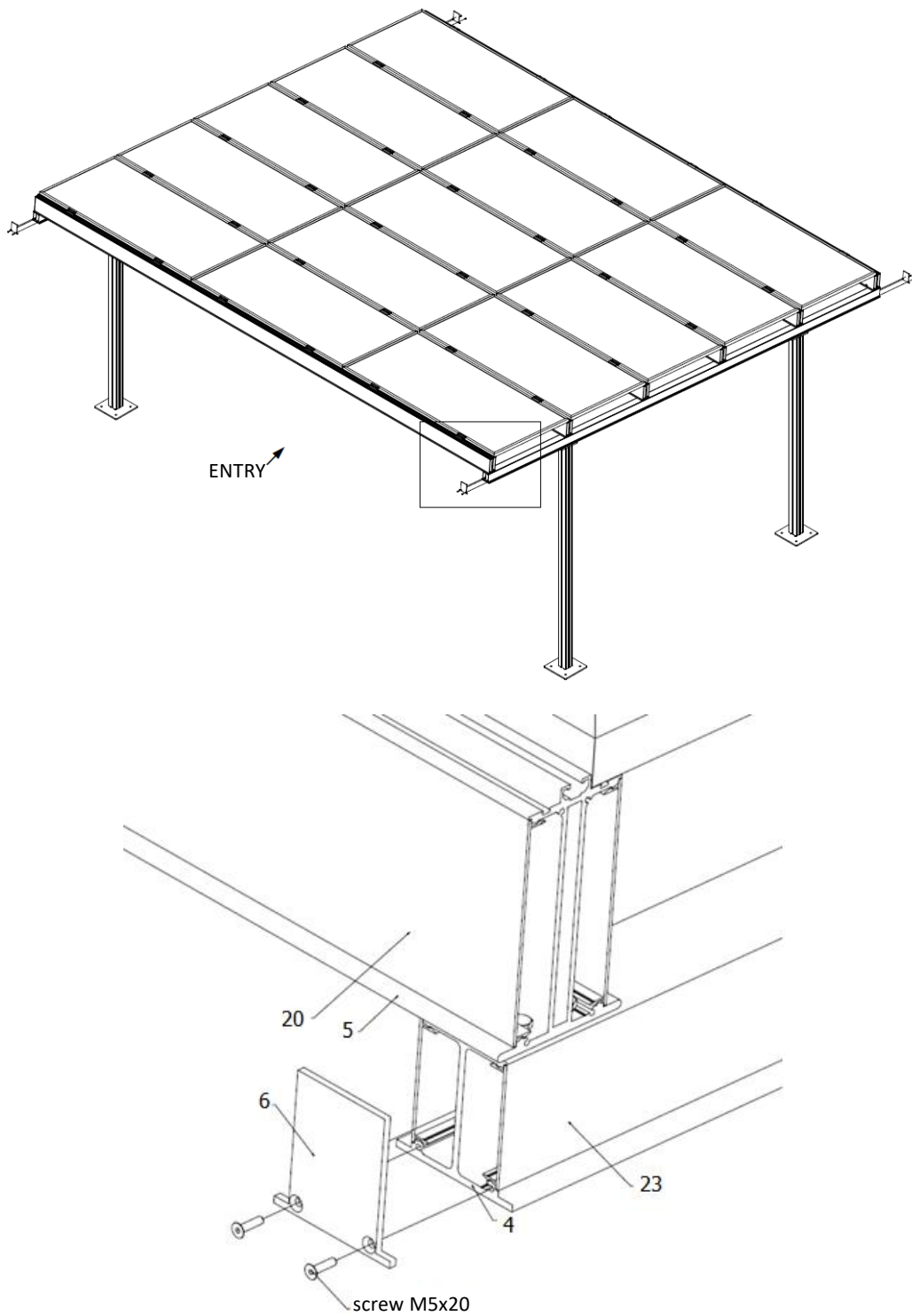


Figure 23. How to mount the main beam cap

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12. Fixing the purlin cap.

- To attach the purlin cap use mounting kit No. 8.

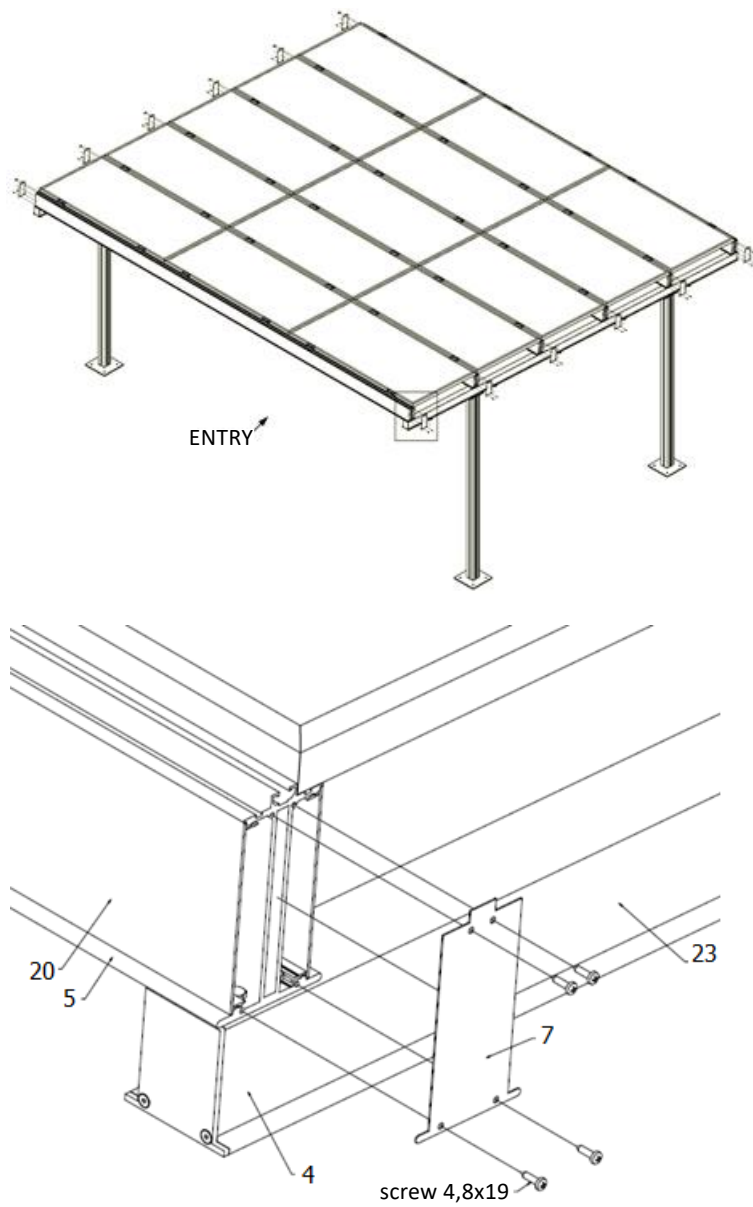


Figure 24. How to mount the purlin cap

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