

# CONSTRUCTION ASSEMBLY INSTRUCTIONS W-V2S1N



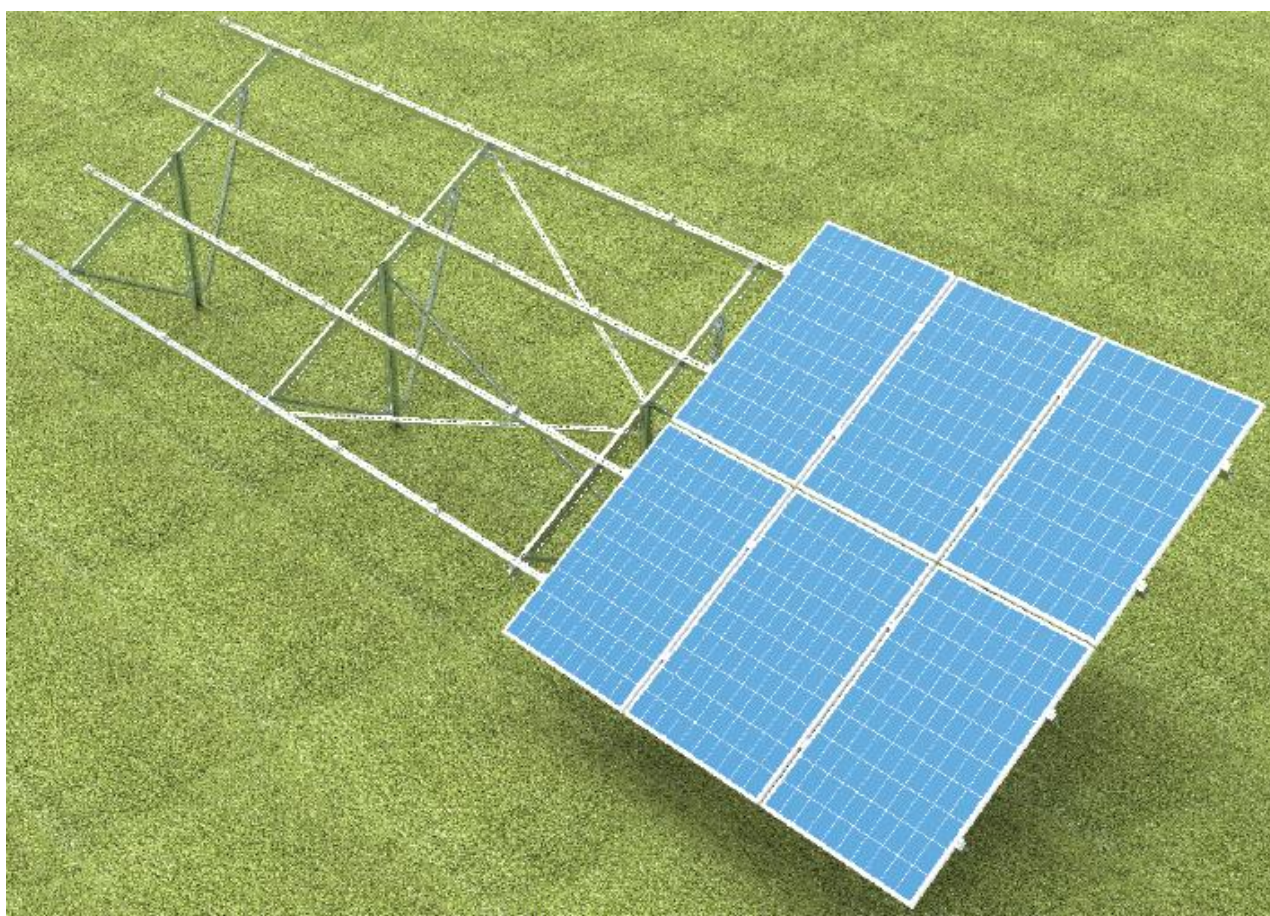
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W – free-standing steel structure

V – vertical arrangement of panels

2 – number of rows of panels

S – structure fixed to the ground with ground screws

1 – construction based on a single support

N – structure based on the new version of profiles



## 1. Essential tools for assembling the structure

- Allen spanner (ampoule spanner) size 6
- Cordless screwdriver with speed and torque control
- Hexagon socket wrench, size 6 for screwdriver head
- Open-end spanner, size 15 mm
- Ratchet spanner with socket size 15 mm
- Extension piece 100-120mm for socket spanners
- Rubber mallet
- Torque spanner, range 10-45 Nm

## 2. General Information

- Possibility of using the structure in wind and snow zones in accordance with the following standards: PN-EN 1991-1-3 and PN-EN 1991-1-4
- Before installing the structure, read the installation instructions for photovoltaic panels
- It is recommended that the connection of BDFCH... profiles with CWC100H50 profiles, CWCR100H50 profile with CWC100H50 profiles and BUF... with CWC100H50 profiles should not be located on the last (outermost) holes
- Each CWC100H50 and CWCR100H50 profile must have at least 2 support points
- The depth of piling the profiles into the ground, the dimensions of the hole for pouring concrete and the dimensions of the foundation for anchoring the structure should be determined by the authorized constructor for the given installation
- If the mounting zone of the panel does not coincide with the perforation of the profile, it is necessary to make an adjustment on the channel connector or use an intermediate bracket of the type UPP...MC
- The panel grounding pad (PUP) is placed under the intermediate handles of the panels. A single washer has the ability to ground two adjacent panels.
- Cutting elements is allowed only with low-speed saber saws and hand saws with tools made of high-quality steel, which avoids excessive heating of the material
- Cut edges must be unconditionally protected – sanded with sandpaper, cleaned and degreased again, after drying, protect with zinc paste a minimum of three times layer.
- The concentrations connecting subsequent frames should be placed up to every 4th field of the structure
- SAM8x screws... E and NUTS NRM8PV should be tightened with a torque of 12-14 Nm
- When twisting the SGKFM10x20 screw, hold the screw head in such a position that the filling locks on the walls of the hole in which the screw is mounted, and then with the help of a screwdriver tighten the screw slowly until it is blocked in the hole. In the final phase, you need to tighten the screwdriver with a torque of 42 Nm



### 3. Specification of elements included in the structure W-V2S1N

(construction specification does not include tools)

Nr	Product	Name of product	Designation in construction
1	Support Channel	CWE100H50/...MC	Support pillar
2	Profile	BDFCH100/...NMC	Rafter
3	Support Channel	CMP41H41/...MC	Bracing
4	Base	PCS100	Support column mounting base
5	Śruba gruntowa	GSW76x...N	Bolt fixing the structure in the ground
6	Channel Connector	LCD100MC	Bracing connector
7	Support Channel	CWC100H50/...NMC	Purlin
8	Support Channel Connector	LCTW100H50MC	Purlin connector
9	Side Holder	BUF...	Lateral clamp for fixing panels
10	Middle Holder	PUF	Intermediate clamp for fixing panels
11	Grounding washer	PUP	Panel grounding
12	Screw	SAM8x...E	Panel fixing screw
13	Spring Washer	PS8E	Head washer for SAM8x...E
14	Screw set	SGKFM10x...PV	Screw + flange nut
15	Washer	PW10F	Washer
16	Channel Nut	NRM8PV	Clamp mounting nut

Table 1 List of structural elements

### 4. Installation order

- 1) Screwing in **GSW76x...N** ground screws according to table 3 and 4
- 2) Mounting the **PCS100** bases to the screwed-in ground bolts, taking into account their orientation with respect to the world directions shown in Figure 7.
- 3) Fixing support poles **CWE100H50/...MC** to base **PCS100** (detail 1), taking into account their orientation with respect to the world directions shown in Figure 7
- 4) Installation of **BDFCH100/...NMC** profile for support columns (detail 2)
- 5) Installation of bracing No. 1 (detail 3; 4)
- 6) Installation and joining of longitudinal profiles under the panels (detail 7; 8)
- 7) Installation of bracing No. 2 (detail 5)
- 8) Installation of bracing No. 3 (detail 6)
- 9) Installation of panel clamps (detail 9.1; 9.2 ; 10)



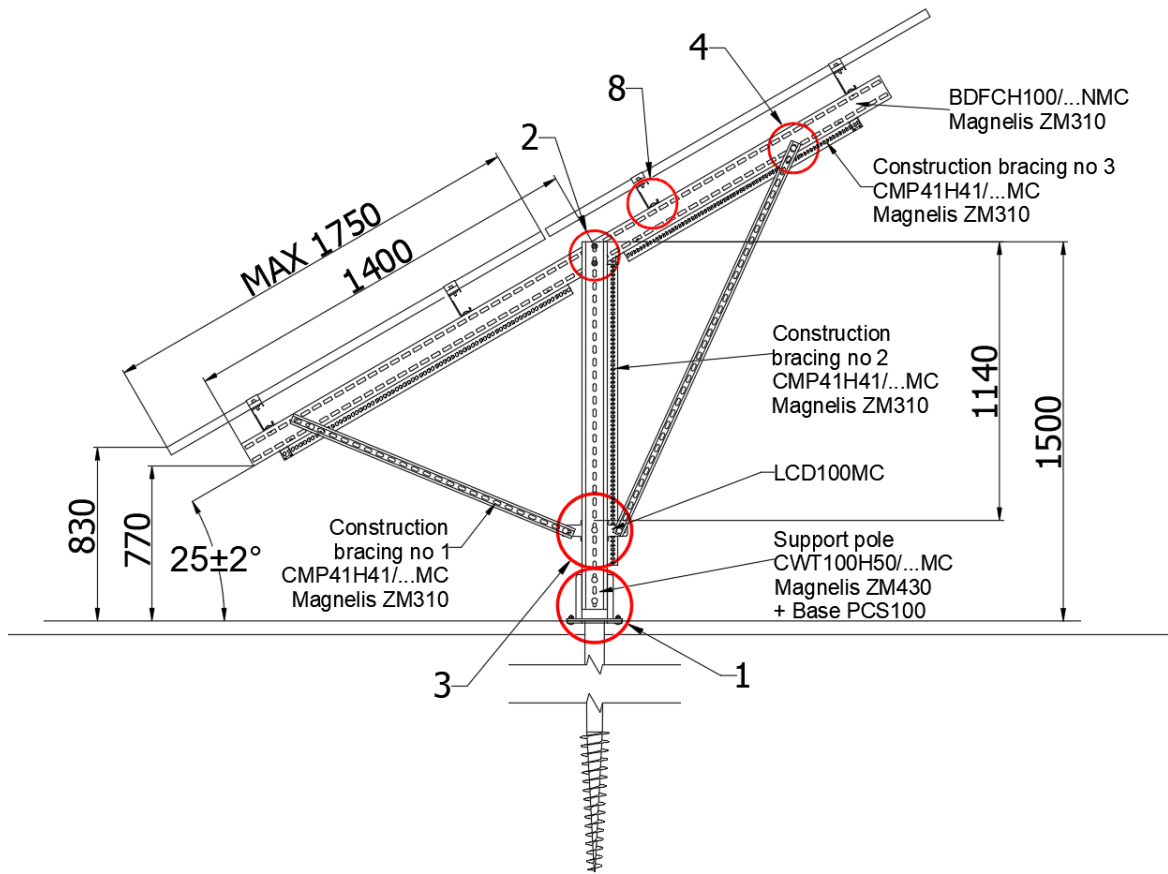


Fig. 1 Side view of the structure

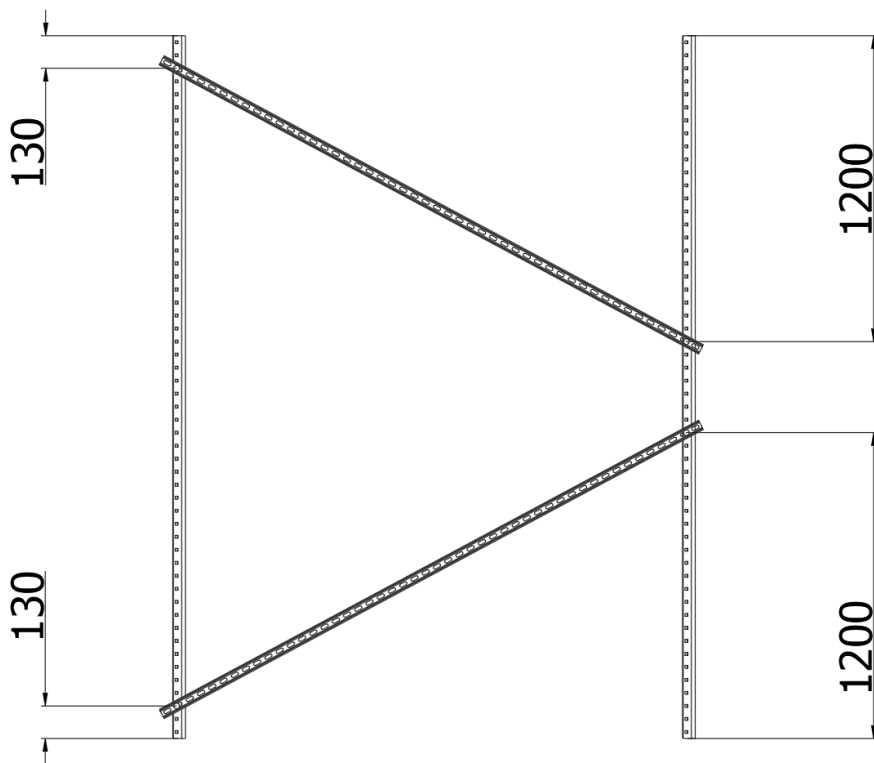


Fig. 2 diagram of concentration No. 3



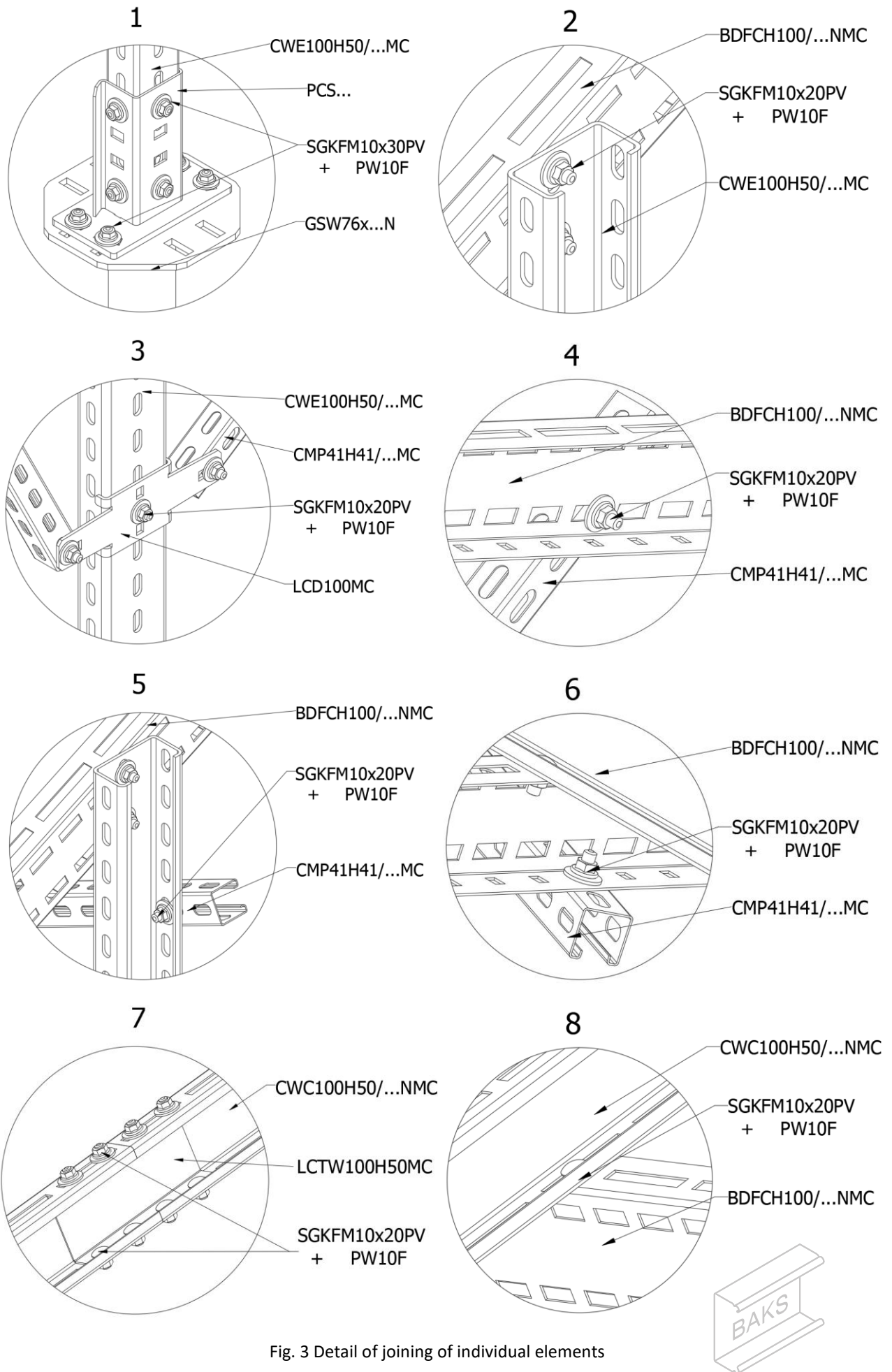


Fig. 3 Detail of joining of individual elements

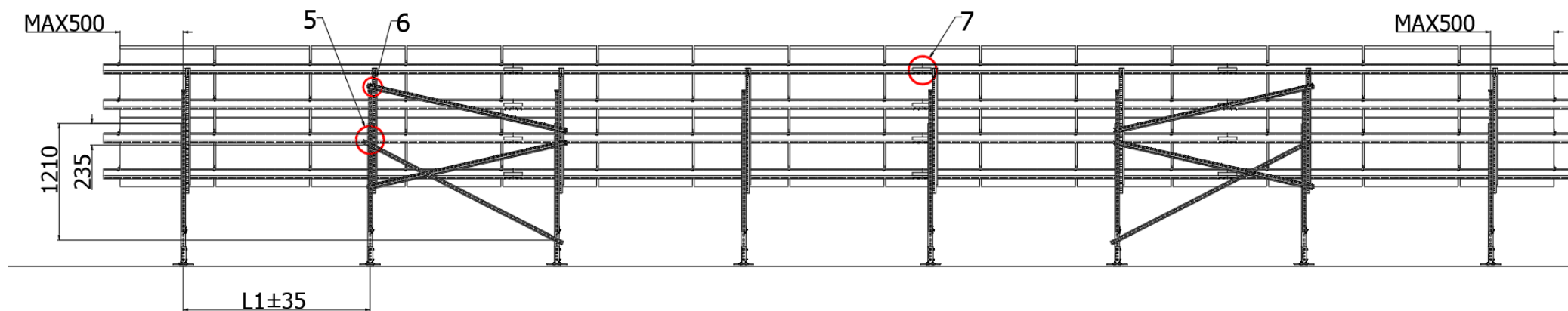


Fig. 4 View of the structure from the north side with bracing spacing No. 2

Combination of wind "W" and snow "S" * zones	Maximum distance of consecutive frames „L1”
1W-1S lub 3W-1S	2,0 m
1W-2S	
1W-3S lub 3W-3S	2,0 m
1W-4S	
2W-2S lub 2W-3S	1,0 m
Other zone combinations	No mounting options

Table 2 Installation distance of successive frames of photovoltaic structure according to the combination of wind and snow zones

\*1 wind zone below 300m above sea level; 3 wind zone below 500m above sea level;

1 and 3 snow zone below 300m above sea level; 5 snow zone below 500m above sea level



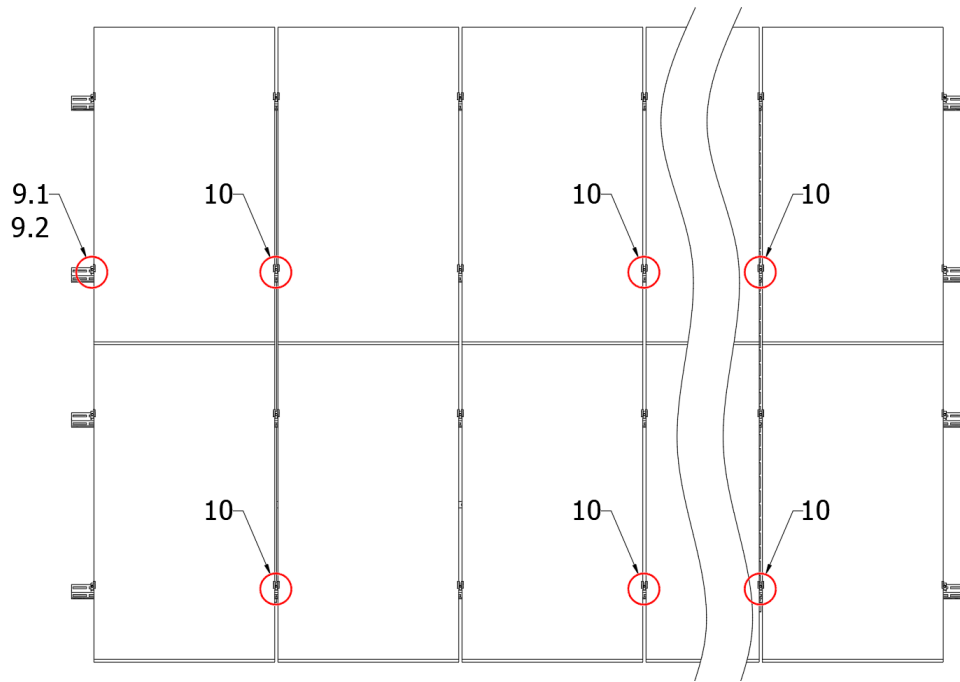


Fig. 5 View of the structure from the top

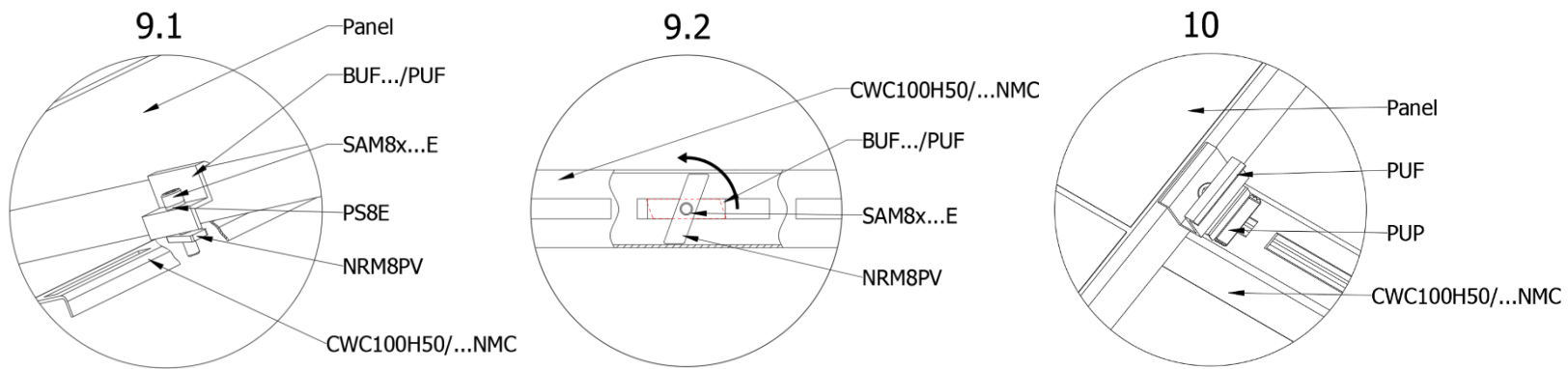


Fig. 6 Clamp mounting detail and nut locking preview

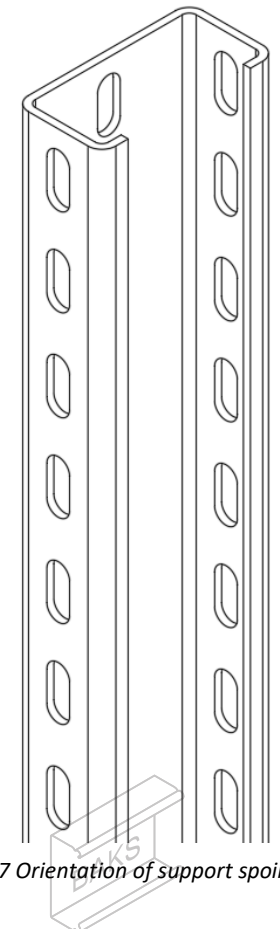
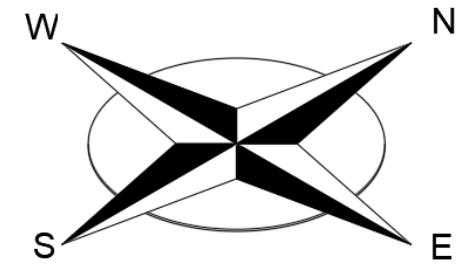


Fig. 7 Orientation of support spoils