K-500

KONSTRUKCJE FOTOWOLTAIKA

TÜVRheinland CERTIFIED

Factory Production Control EN 1090-1

www.tuv.com ID 9000016644

CE

K502 MAX NORTH
K502 XL NORTH

GLOBAL VERSION

INSTALLATION MANUAL

TECHNICAL SPECIFICATION

SYSTEM TYPE:	**RAMMED INTO THE GROUND**
MODULS LAYOUT:	**PORTRAIT**
PER ROW:	**2**
ANGLE OF THE STRUCTURE:	**30° (27° FOR K502 XL NORTH)**

HELTH AND SAFETY INSTRUCTION

Before starting PV system installation works, **the installer should be equipped with individual protective measures** such as:

- Personal fall protection equipment consisting of a full-body harness with an attached internal shock lanyard;
- A ladder, scaffolding, or lift;
- put on work clothes, footwear, and protective gloves;
- remove all unnecessary items from a workplace;
- prepare equipment and check its efficiency (ladders, power tools needed during the work, etc.);
- make sure, the commencement of work does not any threats to people present near the workplace or its immediate vicinity;
- allowed to start performing the tasks if there are no signs of danger in a workplace
- make sure there are no collisions in the place of installation (cables in the ground) before structure installation

Additional notes

In the event of being in immediate danger because of non-compliance with health & safety regulations and rules by people staying near a workplace or in its immediate vicinity, the person who installs PV systems has the right to suspend performing work.

TOOLS NEEDED FOR INSTALLATION

SCREWDRIVER, SCREWDRIVER BITS, SIZE6	SIZE 13, 17	SET SQUARE,CORD,RODS (TO DESIGNATE OF TABLE)	TORQUE WRENCH
			

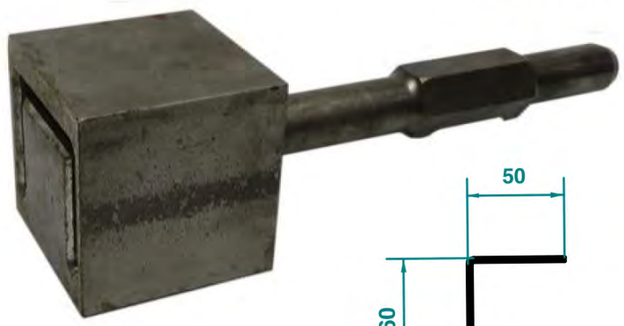
TOOLS ENABLING CORRECT INSTALLATION OF CONSTRUCTION RAMMED INTO THE GROUND

We suggest purchasing a special die on quick couple SDS HEX to the demolition hammer toward correct installation of support structure

DIE K500

SDS HEX

K-500 KONSTRUKCJE FOTOWOLTAIKA

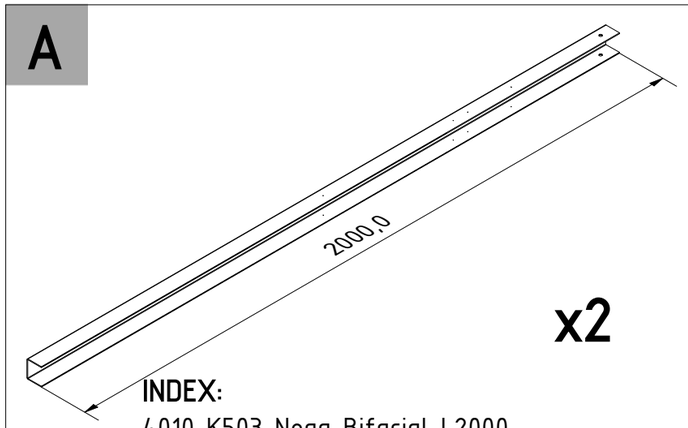


K502 K503

DEMOLITION HAMMER

LIST OF PARTS PER SUPPORTING COLUMN OF SUPPORTING STRUCTURE

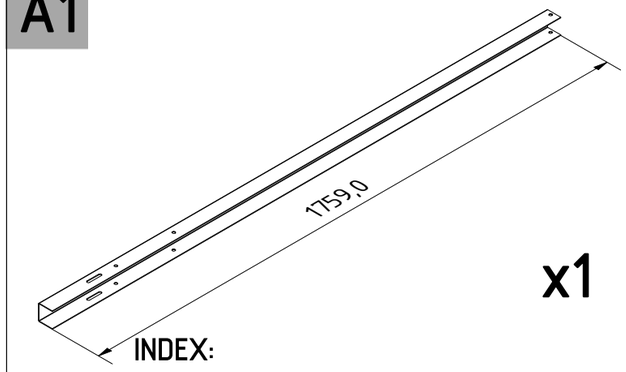
A



x2

INDEX:
4010 K503 Noga Bifacial L2000

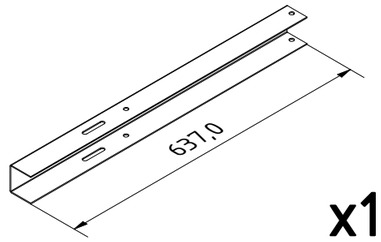
A1



x1

INDEX:
4003 K502_K503 Dostawiana noga tył L1759

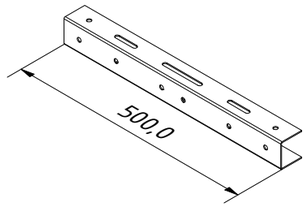
A2



x1

INDEX:
4002 K502_K503 Dostawiana noga przód L637

B

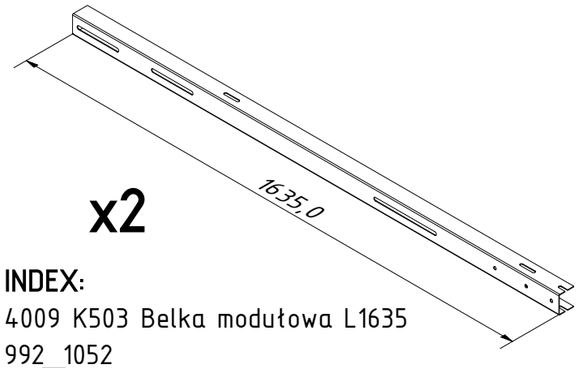


x1

INDEX:
4005 K502_K503 Łącznik

B1

Use to K502 MAX NORTH
max. module length 2020 mm

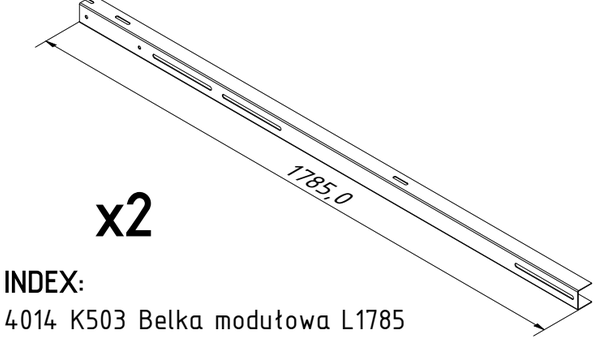


x2

INDEX:
4009 K503 Belka modułowa L1635
992_1052

B2

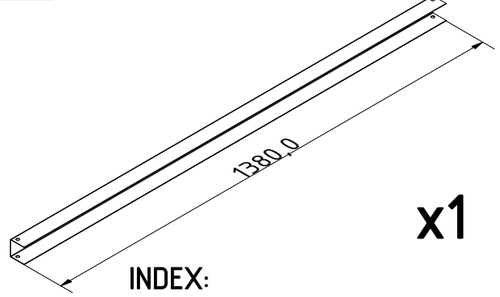
Use to K502 XL NORTH
max. module length 2280 mm



x2

INDEX:
4014 K503 Belka modułowa L1785
1052_1152

C



x1

INDEX:
4004 K502_K503 Zastrzał

D

x18

x20*

INDEX:

2201 Hexagon socket button head screws M8x20 ISO 7380 A2

E

x18

x20*

INDEX:

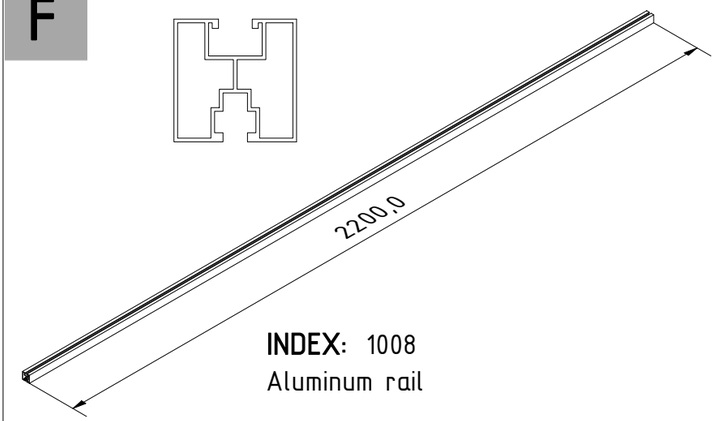
2611 Hexagon flange nut M8 DIN 6923 A2

NOTE

* only for K502 XL SYSTEM TYPE

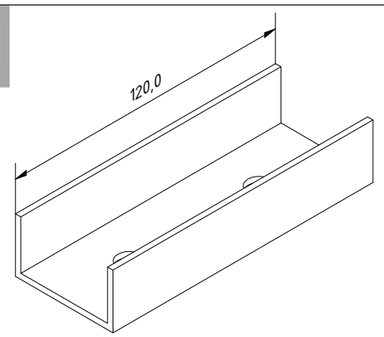
LIST OF PARTS PER SUPPORTING COLUMN OF SUPPORTING STRUCTURE

F



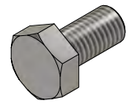
INDEX: 1008
Aluminum rail

F1



INDEX:
1024 Aluminum rails connector

G



x4

INDEX:

2004 Hexagon head screw
M10x20 kl.8,8 DIN 933

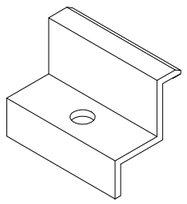
H

x4

INDEX:

2602 Hexagon flange
nut M10 DIN 6923

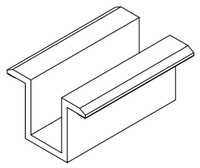
I



INDEX:

1135 End clamp

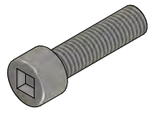
J



INDEX:

1522 Mid clamp h22

K



INDEX:

2102 Hexagon socket head cap screws M8x30 DIN 912 A2

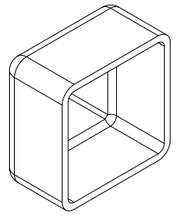
L

x5

INDEX:

2604 Hexagon flange
nut M10 DIN 6923 A2

M



INDEX:

1029 End protective cap

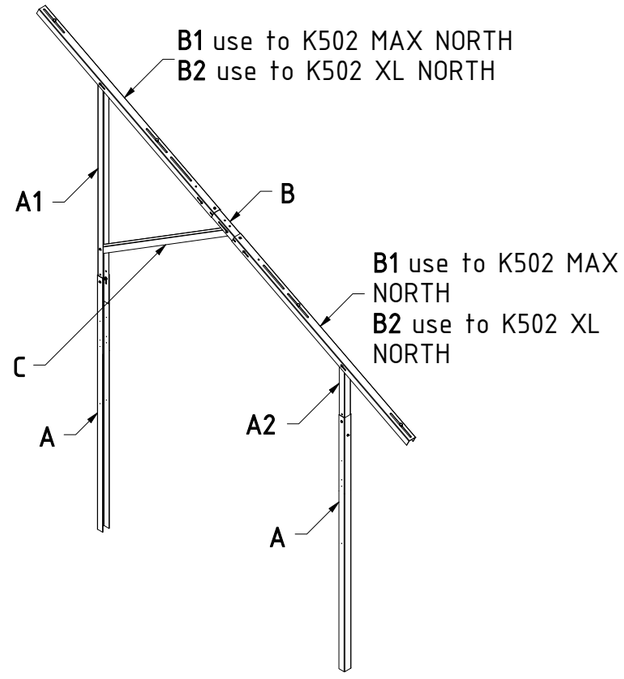
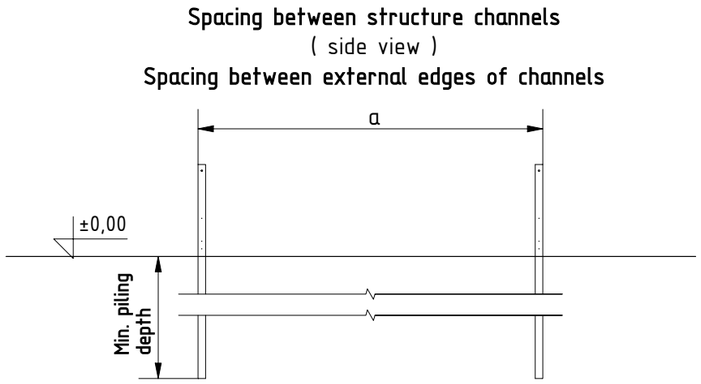
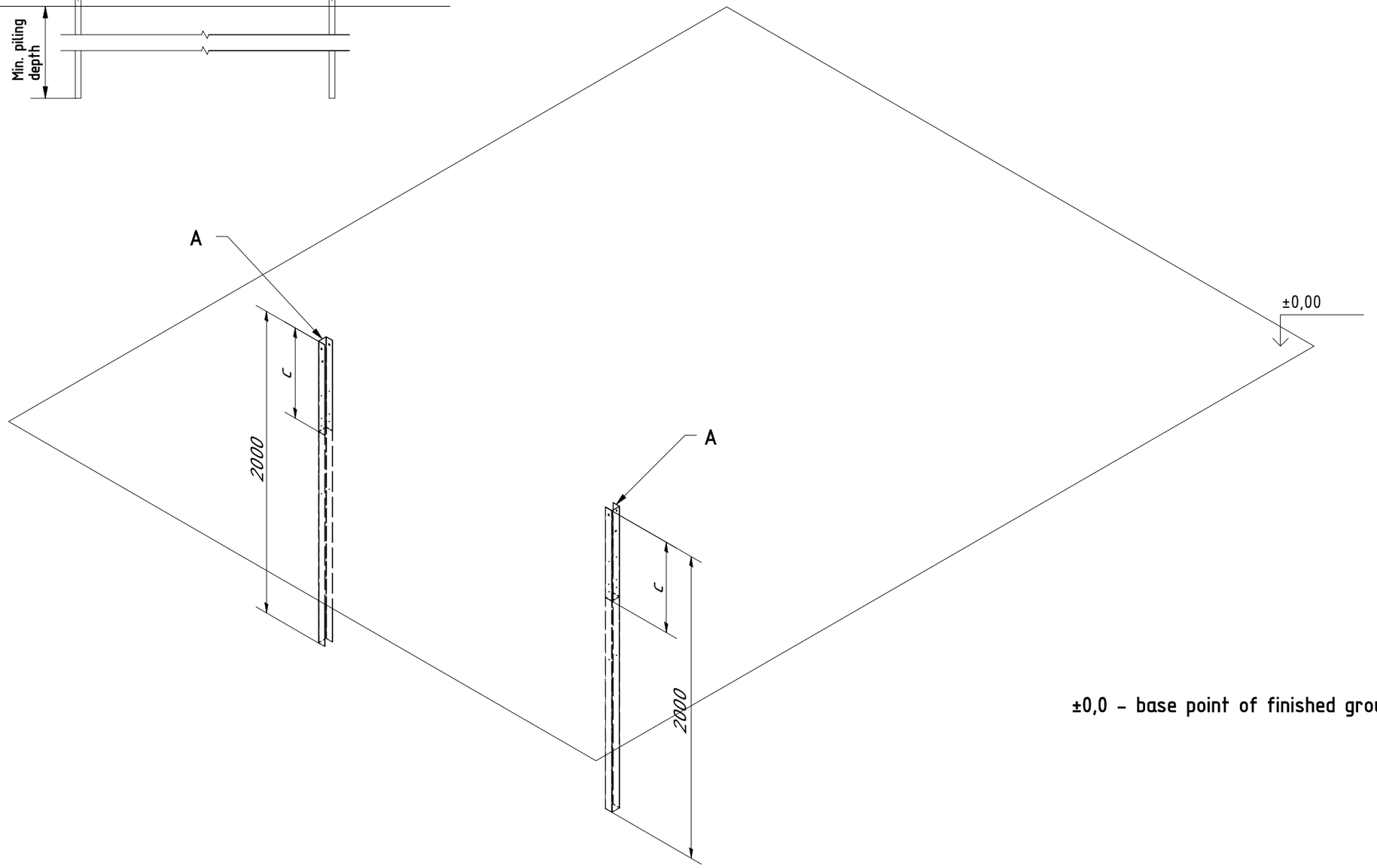


Fig.1 Supporting column – Assembly



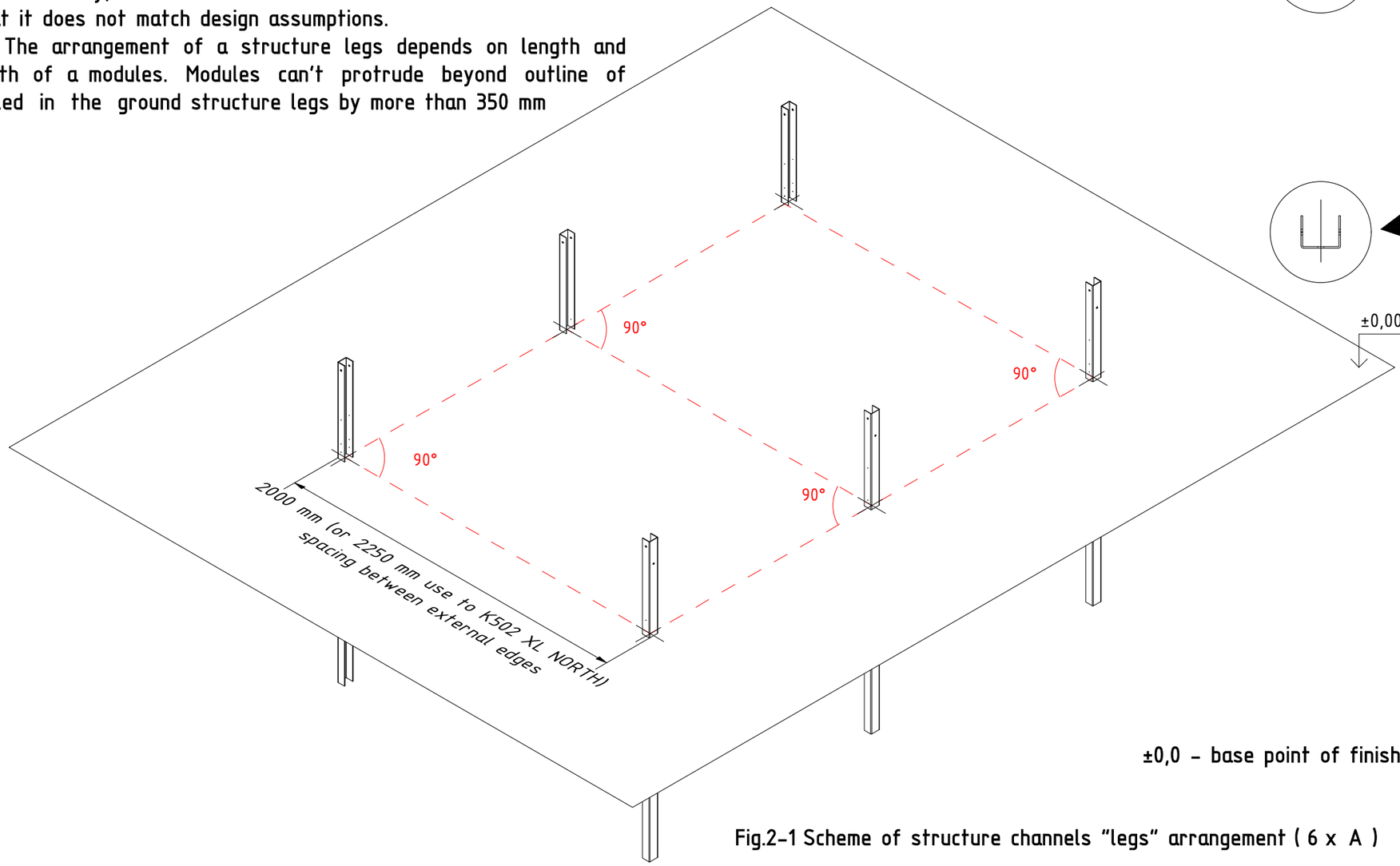
1. Minimum foundation depth of structure legs should be placed at least 1300 mm below the finished ground level
2. In the case of ground unevenness (Fig. 2-1) piling depth of structure legs depends on the landforms - all structure legs of one table should be leveled, keeping the minimum foundation depth for a structure legs.



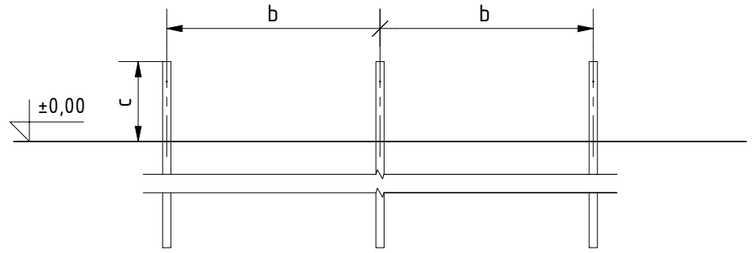
±0,0 - base point of finished ground level

Fig.2 Punching front and rear channels "legs" (A)

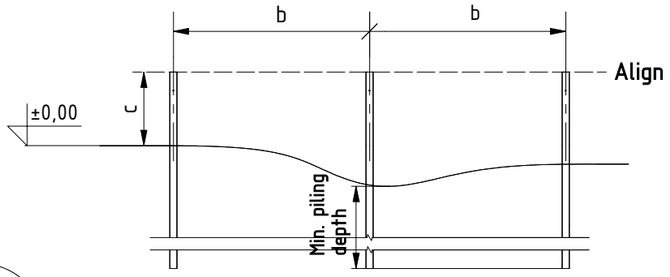
1. Check whether level of hammering structure legs required by the project allows to achieve the required angle of inclination of the modules and the lower edge of the lower module will be located above the ground level by approx. 550 mm. Adjustments should be made, if the required parameters are not achieved, e.g. among others by driving the front leg deeper, if the rear leg by reference to front leg at the point of lowering the ground and has been compacted to the required depth. This operation should be performed before serial hammering proceeding of entire rows of a structure legs. Operation should be repeated every time the terrain changes. Should be set a rule to position the structure in a way that ensures the minimum depth of driving a structure legs required by the project or model of a structure. Therefore better hammering elements deeper than too shallow. The whole structure legs hammering process should be scheduled in such a way, didn't turn out in the end of structure installation that it does not match design assumptions.
2. The arrangement of a structure legs depends on length and width of a modules. Modules can't protrude beyond outline of nailed in the ground structure legs by more than 350 mm

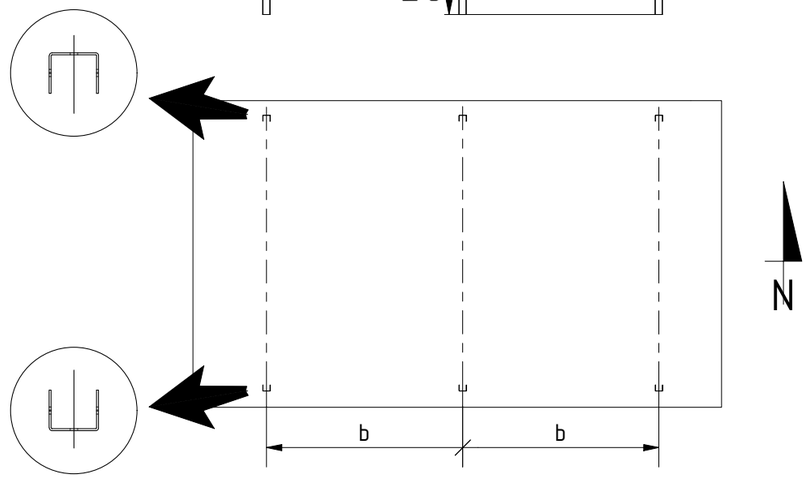


Spacing between structure channels
(front view)
Spacing between axis of channels



Spacing between structure channels
(front view)
Spacing between axis of channels





Parameter	Spacing, mm
a	2000; 2250 (use to K502 XL NORTH)
b*	1500 ... 1600
c	500
d**	0; 210 (use to K502 XL NORTH)

* Parameter "b" depend on PV modules width
** Parameter "d" see Fig. 3 (Sheet 9)

±0,0 – base point of finished ground level

Fig.2-1 Scheme of structure channels "legs" arrangement (6 x A)

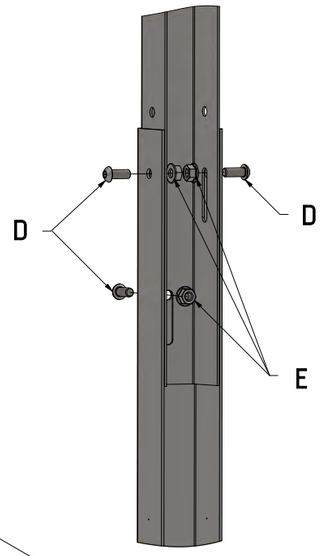
NOTE

Not allowed to tighten fasteners with wrenches or screwdrivers impact.

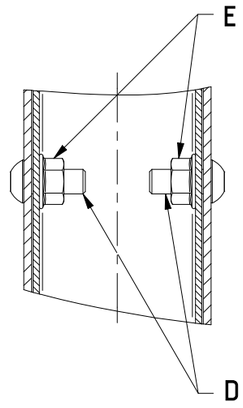
Bolt tightening torques during assembly:

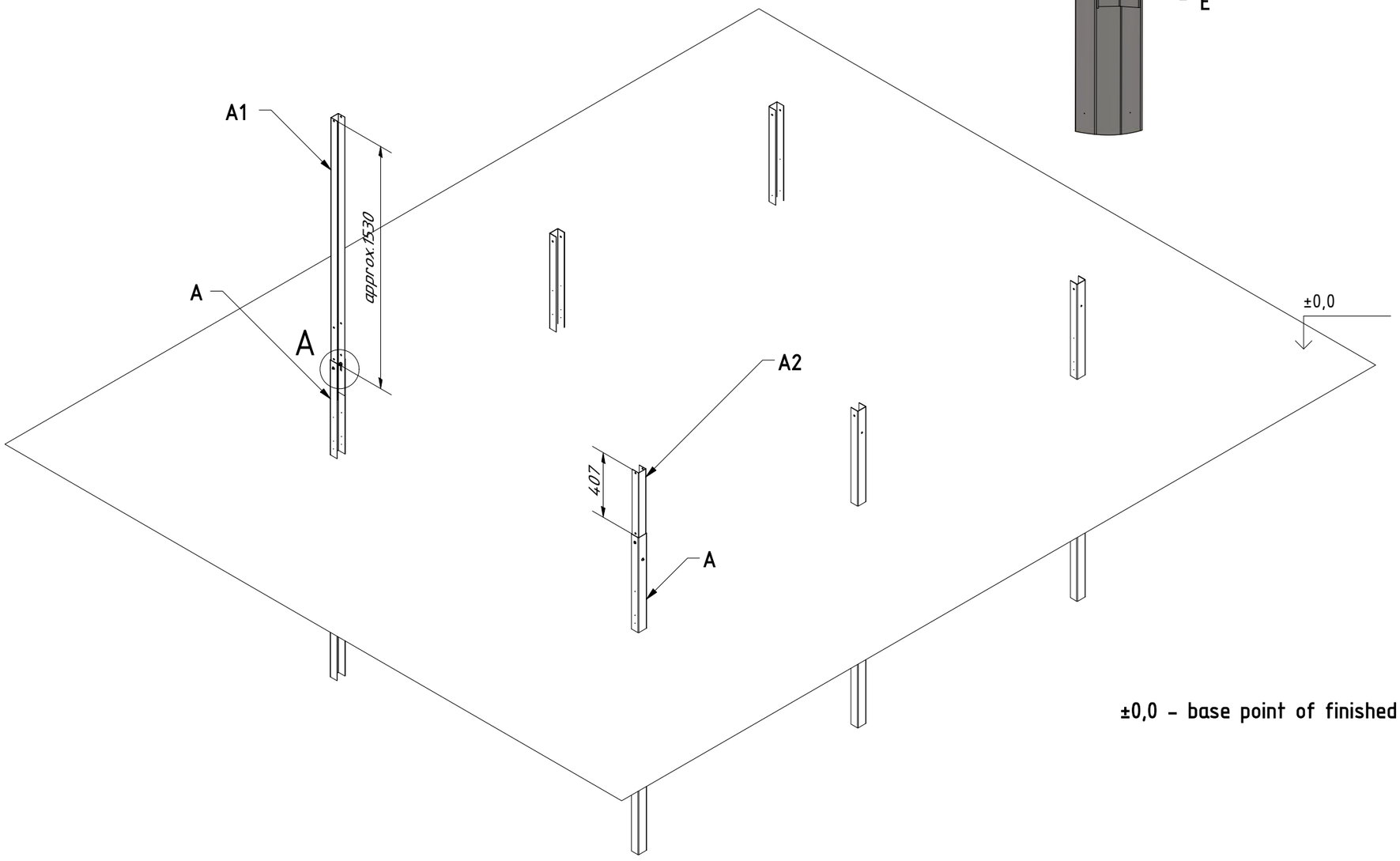
- middle and end clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm

A (1 : 3)



Bolted connection





±0,0 – base point of finished ground level

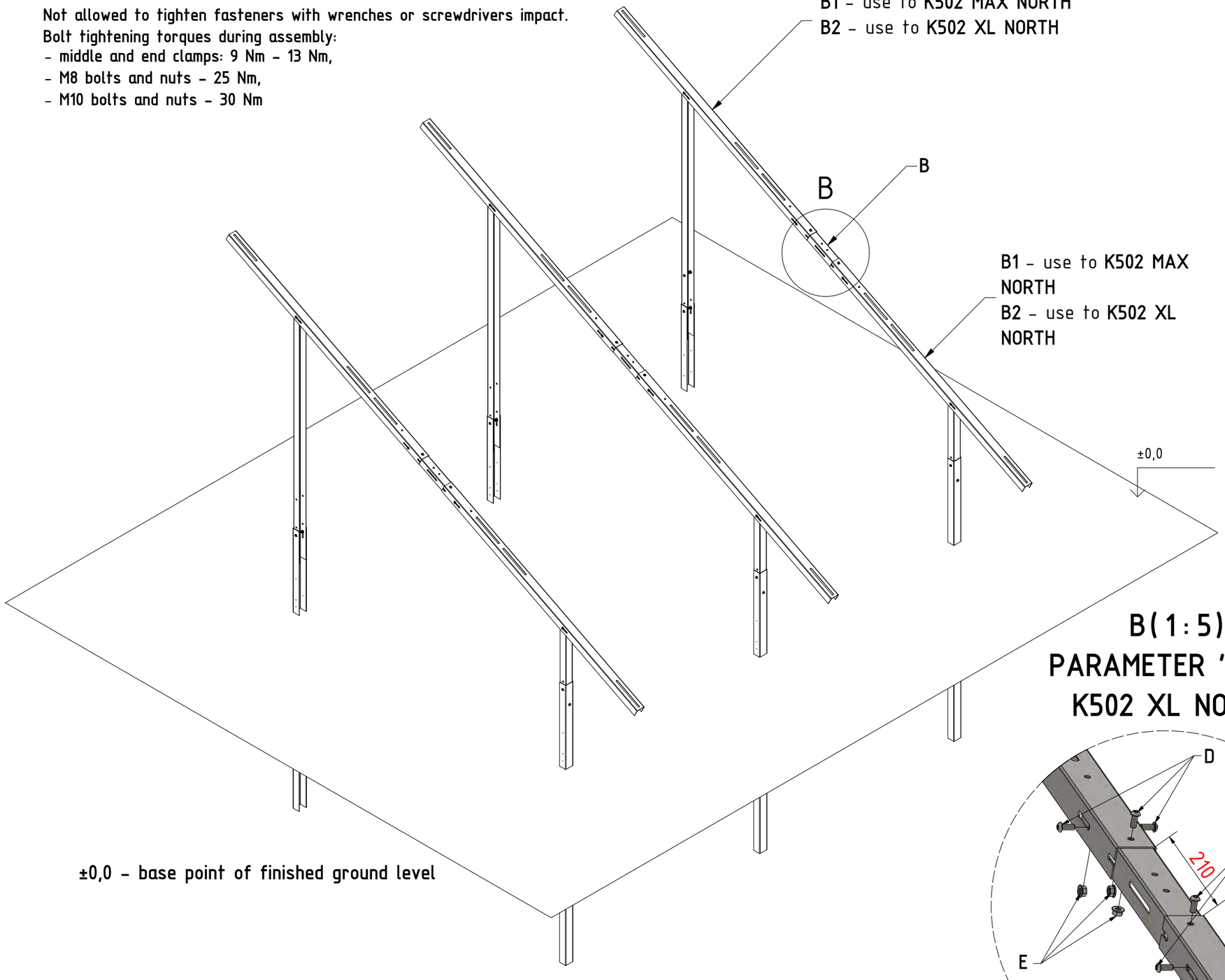
Fig.2-2 Joining structure channels "legs" (A) to add-on rear (A1) and front channels (A2)

NOTE

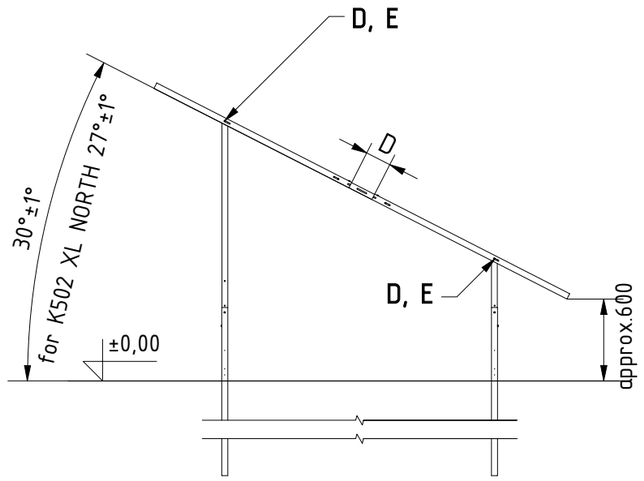
Not allowed to tighten fasteners with wrenches or screwdrivers impact.

Bolt tightening torques during assembly:

- middle and end clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm



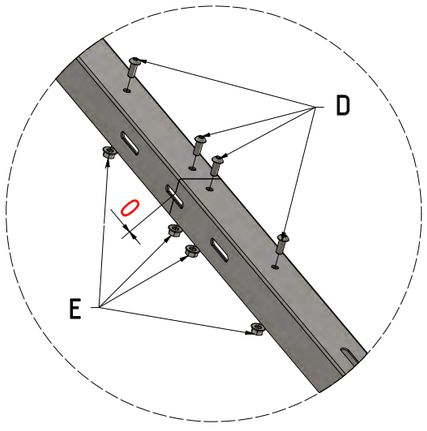
±0,0 – base point of finished ground level



NOTE

Parameter "d" to K502 XL NORTH – 210 mm,
to K502 MAX NORTH – 0 mm

B(1:5)
PARAMETER "d" TO
K502 MAX NORTH



B(1:5)
PARAMETER "d" TO
K502 XL NORTH

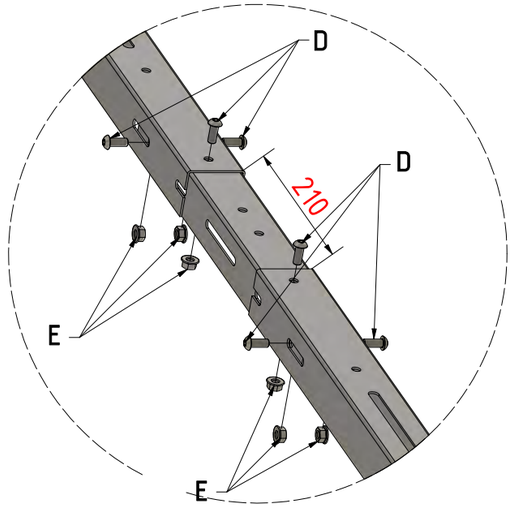


Fig. 3 Joining rear and front supports to inclined beam (depending on construction type: (B1), (B2))

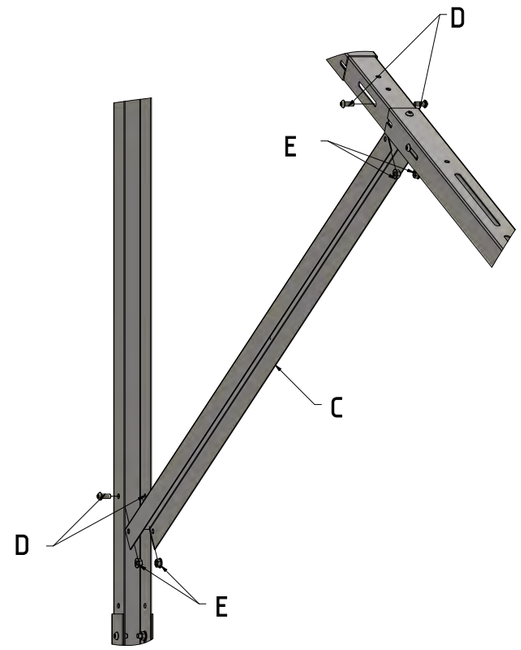
NOTE

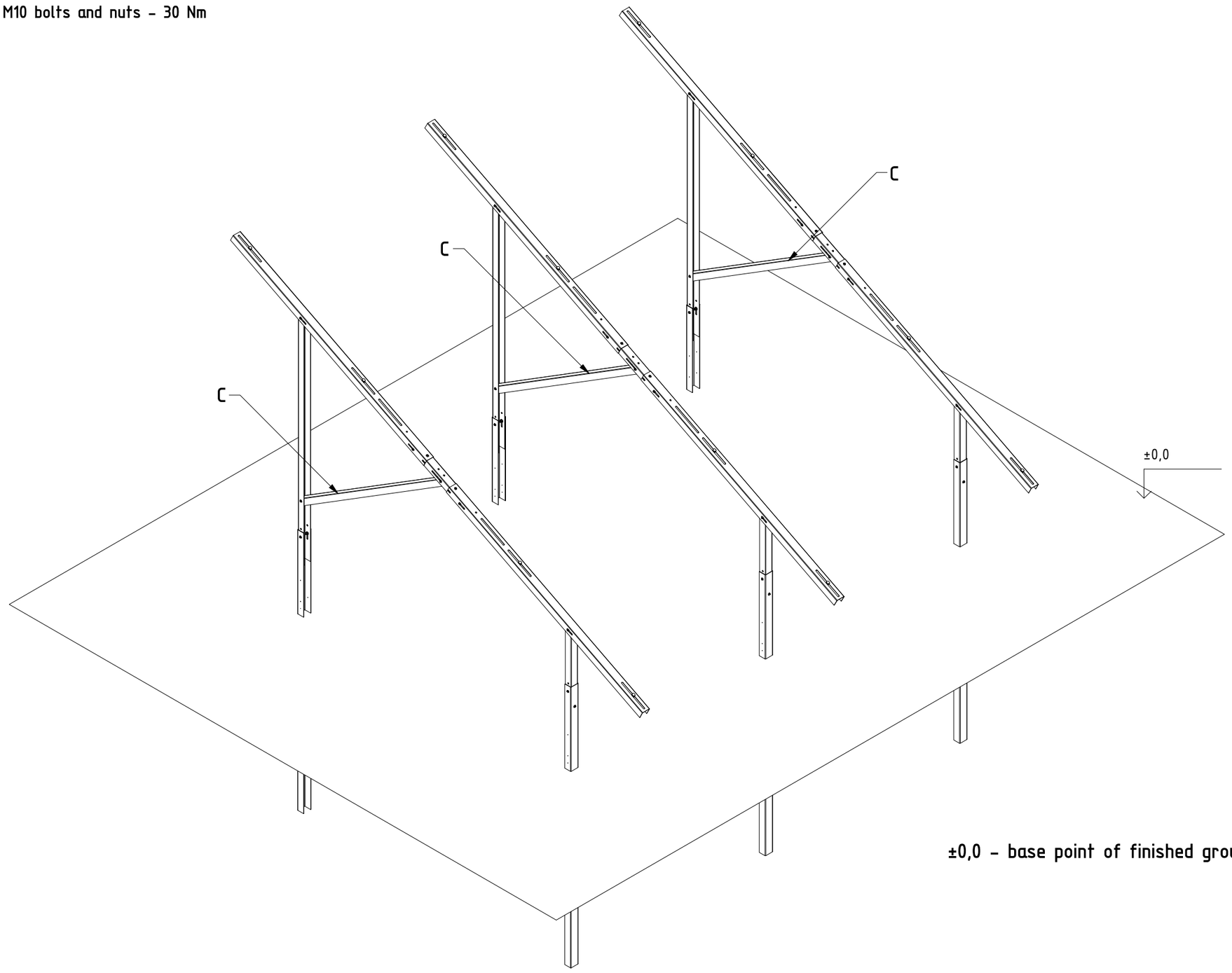
Not allowed to tighten fasteners with wrenches or screwdrivers impact.

Bolt tightening torques during assembly:

- middle and end clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm

Bolted connection





±0,0 – base point of finished ground level

Fig. 3-1 Joining brace (CPV773) to inclined beam

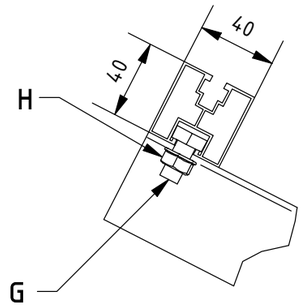
NOTE

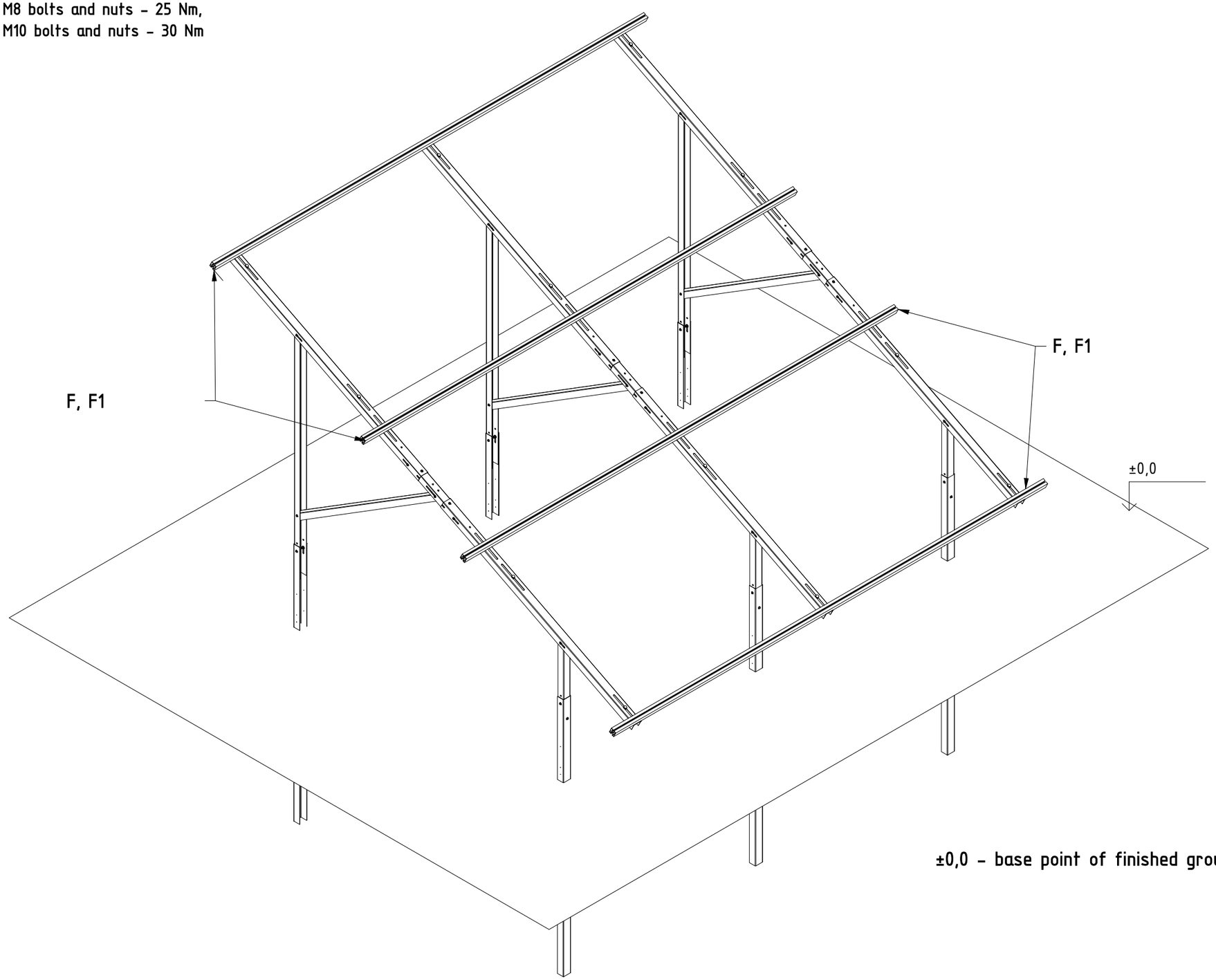
Not allowed to tighten fasteners with wrenches or screwdrivers impact.

Bolt tightening torques during assembly:

- middle and end clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm

Joining aluminum rails to inclined steel beam





±0,0 – base point of finished ground level

Fig. 4 Transverse aluminum rail (F, F1) installation (joining rails to inclined beam)

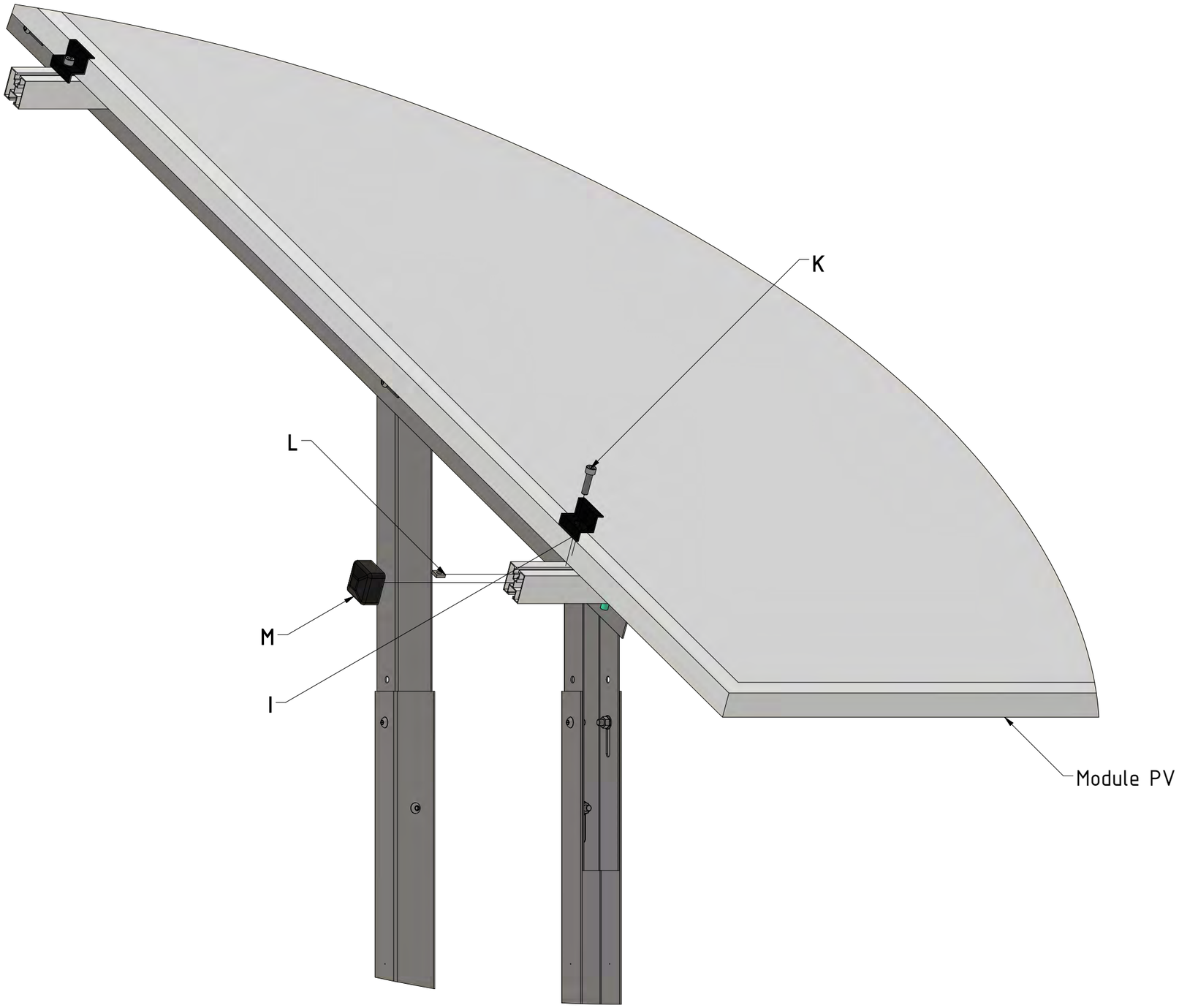
NOTE

Not allowed to tighten fasteners with wrenches or screwdrivers impact.

Bolt tightening torques during assembly:

- middle and end clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm

INSTALLATION OF MODULES



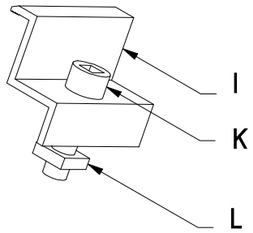
NOTE

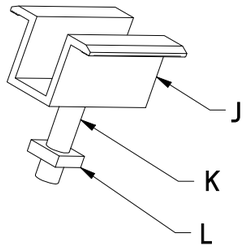
Not allowed to tighten fasteners with wrenches or screwdrivers impact.

Bolt tightening torques during assembly:

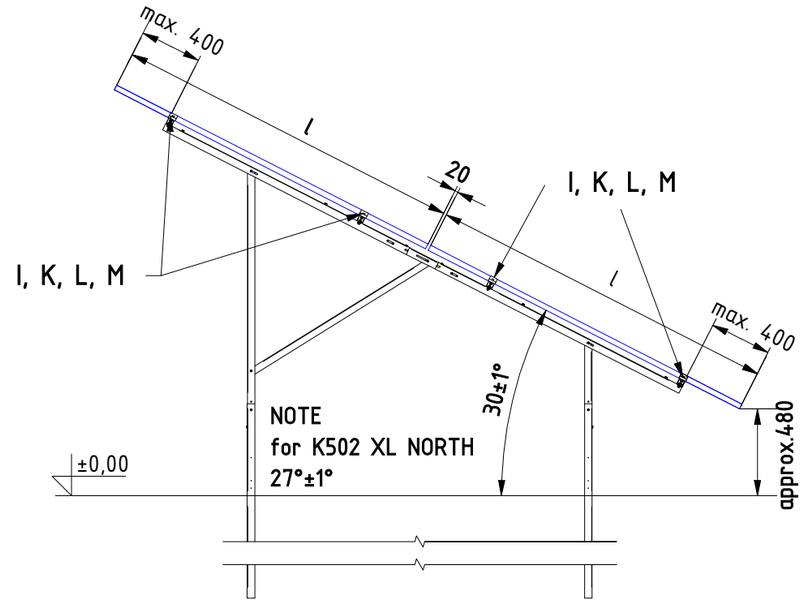
- middle and end clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm

Scheme of joining clamps
Compose end (I) and mid (J)
clamps according scheme

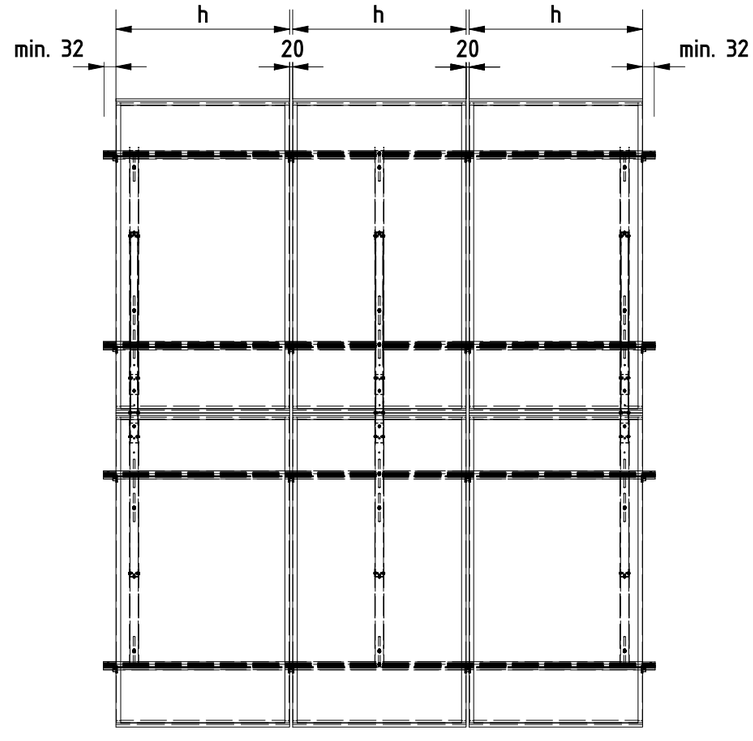




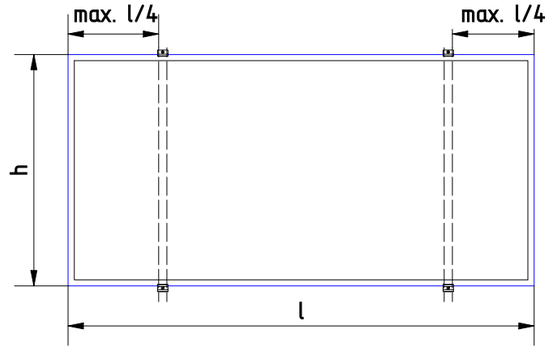
±0,0 – base point of finished ground level



TOP VIEW



Scheme of mounting clamps to PV module



h – module width, mm;
l – module length, mm

Fig. 5 Mounting of PV modules with end (I) and mid (J) clamps