

AugerPrime

AB0325

AB0303

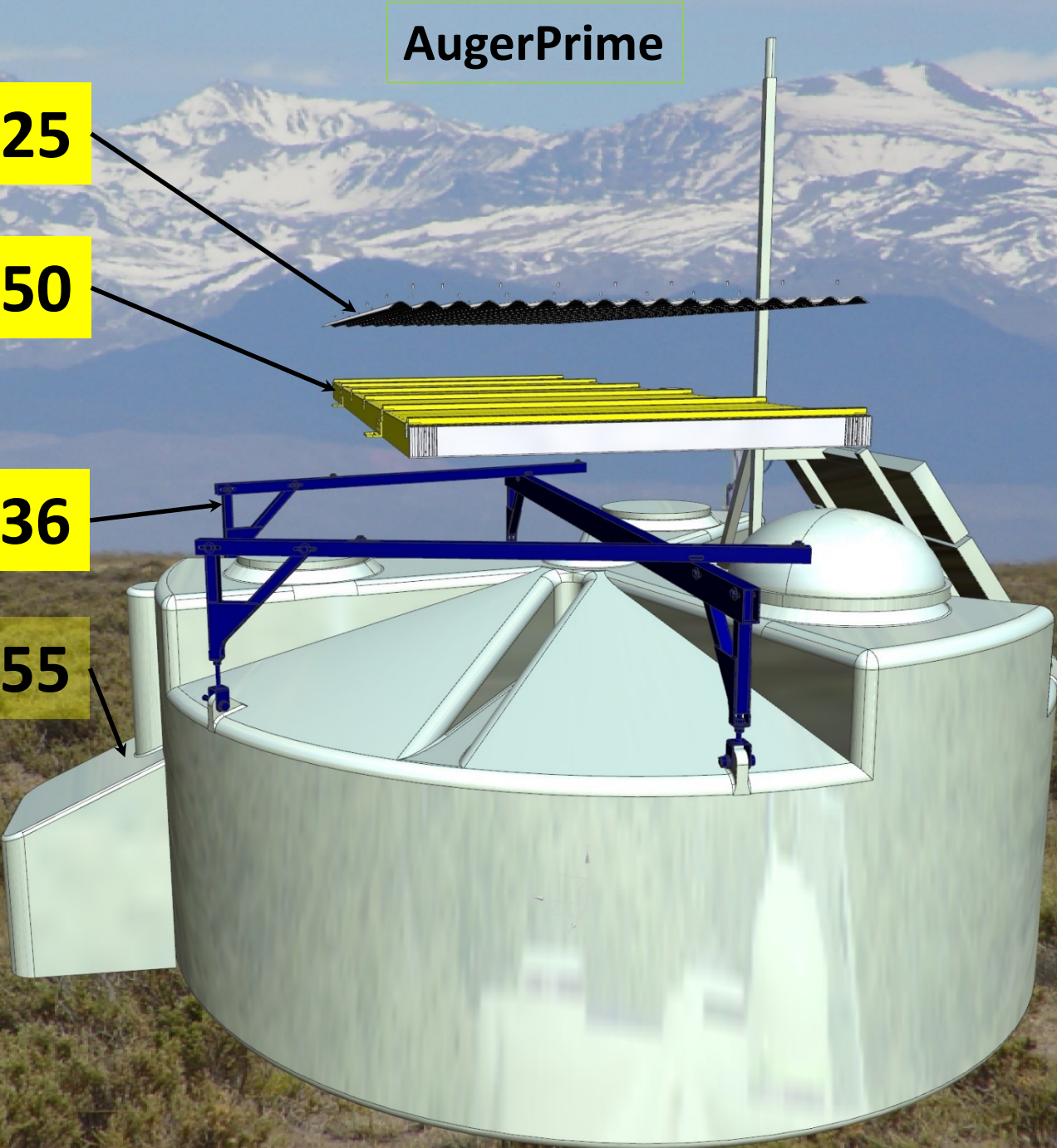
AB0250

AB0335

AB0330

AB0336

AB8955



### 3D-Cad model and (production)drawings overview V1-Nov. 06-2017

Native files in Dassault ENOVIA-SmarTeam database@nikhef

AUTHOR: A.Korporaal ; March 25 2018 14:40PM

Drwg. Package: **SSD (Support incl.) on WCD Ass'y (Production)\_AB0335\_E\_06Nov2017\_ALLdwgs\_XTRA**

Step-214 format file: **SSD (Support incl.) on WCD Ass'y (Production)\_AB0335\_F\_06Nov2017.stp**

SmarTeam					
Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0335		E	F	1	Assembly
SSD Type D 83mm (Production - Roof incl.)	AB0303	F	F	1	Assembly
New support frame-rev6- weld on WCD Ass'y (Production)	AB0330	C	B	1	Assembly

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0303		F	I		Assembly
SSD Type D-83mm Ass'y (Production)	AB0250	J	I	1	Assembly
Pop Rivet 4.8x9.5 (ISO 15973-Al_St.Steel)	AB0282	NONE	A	54	Part
Corrugated Roof Panel C (18/1292_76mm)	AB0325	C	B	1	Part
Alternative/Replacement parts for: AB0325 (NOT present in Cad model)					
Corrugated Roof Panel A (76x18x1064_L3800)	AB0305	B	A	2	Part
Corrugated Roof Panel B (76x18x305_L3800)	AB0306	B	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0250		J	F		Assembly
SSD Type D-83mm Housing Ass'y (Production)	AB0248	G	F	1	Assembly
Filling Strip A	AB0240	A	A	4	Part
Fiber Router A ( Detector Ends)	AB0331	A	A	2	Part
Scintillator Type 8 (FNAL- 50x10-2holes_Bean Shape)	AA9739	A	B	48	Part
Crossbeam A Ass'y (Scintillator Clamp)	AB0257	C	A	4	Assembly
Bracket A (Scintillator Clamp)	AB0255	A	A	8	Part
Double side tape L1 (TESA 4970-25mm)	AB0310	NONE	A	2	Part
Double side tape L2 (TESA 4970-25mm)	AB0311	NONE	A	2	Part
Fiber Router B ( Central Part - LEFT)	AB0332	B	B	1	Part
Fiber 1mm (Saint Gobain BCF-91A) L= 5,90m	AB0300	NONE	D	96	Part
Fiber Router B1 ( Central Part - RIGHT)	AB0333	A	A	1	Part
Shielding Foil ( Central Part) 1220x380mm	AB0264	NONE	A	1	Part
EPS_Plate_1000x500x45mm	AB0291	C	A	6	Part
EPS_Plate_1000x220x45mm	AB0293	B	A	2	Part
EPS_Plate_220x500x45mm	AB0292	B	A	2	Part
EPS Plate 540x500x45mm	AB0294	B	A	1	Part
EPS Plate 540x500x45mm (Fiber Cookie)	AB0295	B	B	1	Part
EPS Plate 240x220x45mm	AB0296	A	A	2	Part
Roof Support Ass'y (SSD Production)	AB0309	C	B	6	Assembly
Pop Rivet 4.8x12.5 (ISO 15973-Al_St.Steel)	AB0283	NONE	A	40	Part
EPS Plate1000x44x40mm	AB0298	A	A	4	Part
EPS Plate 210x44x40mm	AB0299	A	A	4	Part
2K-Silicone Sealant (OTTOCOLL S 610-BLACK)	AB0284	NONE	A	1	Part
Top Cover Plate (SSD Type D-83MM)	AB0297	A	A	1	Part
Pop Rivet 4.8x9.5 (ISO 15973-Al_St.Steel)	AB0282	NONE	A	102	Part
PMT4920_assembly_LECCE_25Sept2017 (All parts/items on drawing)	AB0315	D	D	1	Part
EPS Plate 420x60x15mm (Center Part TOP)	AB0341	A	A	1	Part
Alternative/Replacement parts for: AB0291-AB0296 (NOT in Cad model)					
EPS_Plate_1220x1000x45mm	AB0338	A	A	2	Part
EPS_Plate_1220x500x45mm	AB0339	A	A	2	Part
EPS_Plate_1220x540x45mm (Central part)	AB0340	B	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0248		G	F		Assembly
SSD Type D-83mm Longbeam Ass'y (Production)	AB0247	G	E	1	Assembly
Al_tube_di47_LECCE_25Sept2017 ( present on dwg. AB0315-ITEM 1 )	AB0288	NONE	B	1	Part
Glued_flange_Lecce_15May2017 ( present on dwg. AB0315-ITEM 5 )	AB0287	NONE	A	1	Part
SSD_vs_Support Interface (Production)	AB0270	B	A	4	Part
Sintered Disc (GKN Sintermetals Filters GmbH SIKA-B12-D35-S3)	AB0281	A	A	1	Part

Pop Rivet 4.8x11.0 (ISO 15973-Al_St.Steel)	AB0290	NONE	A	6	Part
Pop Rivet 4.8 x14 (ISO 15973-Al_St.Steel)	AB0285	NONE	A	20	Part
2K-Silicone Sealant (OTTOCOLL S 610-BLACK)	AB0284	NONE	A	2	Part
Sealing Ring (Dichtring)	AB0337	A	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0247		G	E		
Longbeam Gluing Ass'y D-83mm (SSD Type D 83mm - Production)	AB0246	B	B	1	Assembly
Sandwich Panel (BOTTOM) (SSD Type D-83MM)	AB0275	D	D	1	Assembly
2K-Silicone Sealant (OTTOCOLL S 610-BLACK)	AB0284	NONE	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0246		D	B		Assembly
Longbeam D-83mm PMT Side (SSD Type D 83mm)	AB0245	C	B	1	Part
Longbeam D1-83mm (SSD Type D 83mm)	AB0244	C	B	1	Part
Longbeam D2-83mm SHORT Side (SSD Type D 83mm)	AB0243	B	A	2	Part
Corner Connector FOPPE&FOPPE 1104991601	AB0266	D	D	4	Part
Notched Pin (Alum. 5x18-Foppe&Foppe 13138158/Schuco 218858)	AB0271	NONE	A	16	Part
2K-Silicone Sealant (OTTOCOLL S 610-BLACK)	AB0284	NONE	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0275		D	D		Assembly
Skin Plate 3A (Sandwich Panel 3A SSD Type C-83MM)	AB0274	NONE	B	1	Part
Foam Core 4A (Sandwich Panel 4A SSD Type D 83MM)	AB0273	NONE	D	1	Part
Skin Plate 4A (Sandwich Panel 4A-Cut Out SSD Type C-83MM)	AB0272	NONE	B	1	Part

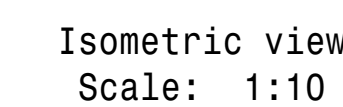
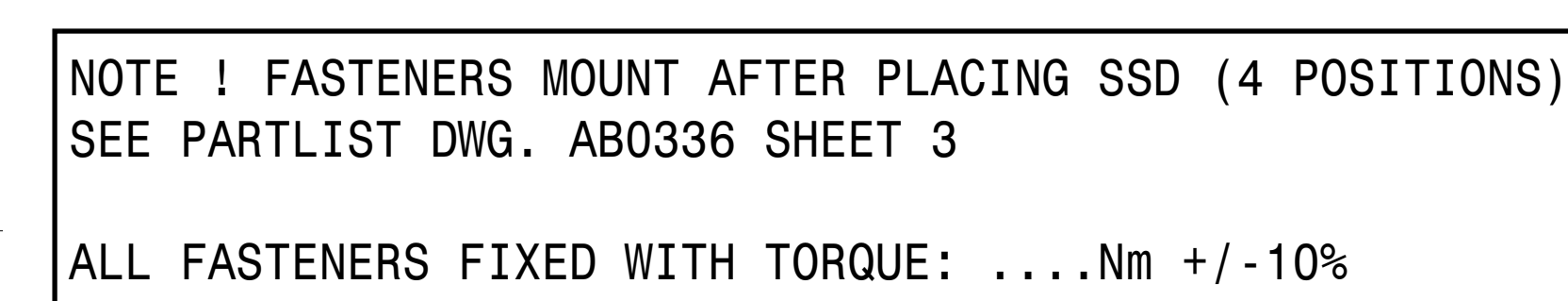
Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0257		C	A		Assembly
Crossbeam A (Scintillator Clamp)	AB0256	A	A	1	Part
Foam Tape TESA 4957-25mmx1100mu	AB0258	NONE	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0309		C	B		Assembly
Bracket V3	AB0308	A	A	2	Part
Roof Support Beam	AB0307	A	A	1	Part

Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AB0330		NONE	C		Assembly
LSD Tank F Ass'y	AA8955	NONE	C	1	Assembly
New support frame-rev6- weld_TC-Aug 04-2017 (All parts on drawing)	AB0336	B	A	1	Part


Definition	Part Number	Dwg. Rev.	3Dmodel. Rev.	Quantity	Type
Bill of Material: AA8955					Assembly
Tank_F	AA8956	NONE	C	1	Part
Kabelanschluss	AA8957	NONE	A	1	Part
PMT	AA8958	NONE	A	3	Part
Deckel_650	AA8959	NONE	A	1	Part
Deckel_540	AA8960	NONE	A	2	Part
Mast	AA8954	NONE	A	1	Part
Solar Panel	AA8952	NONE	A	1	Part
Halter	AA8951	NONE	A	1	Part



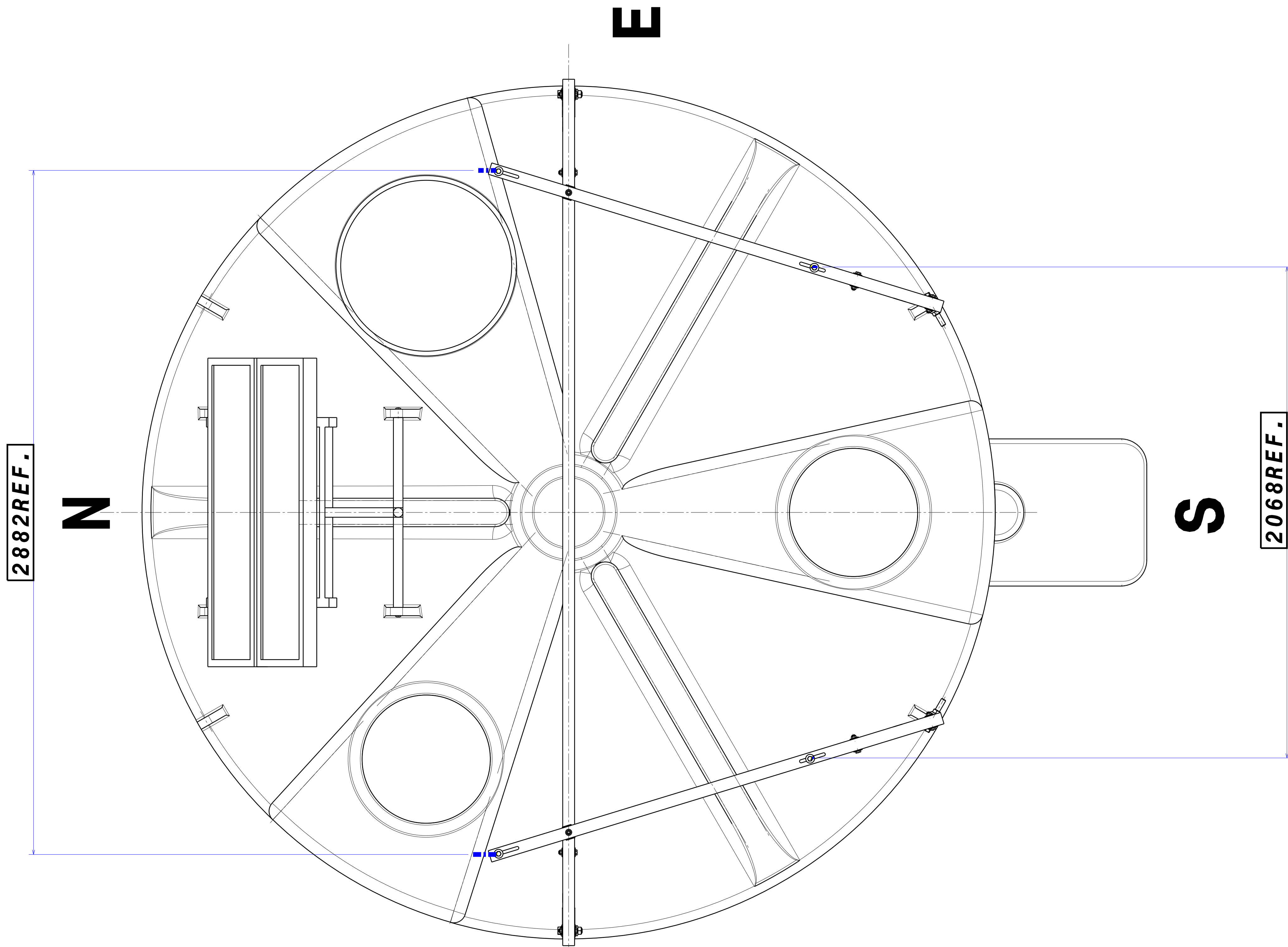


2	1	SSD Type D 83mm (Production - Roof incl.)	AB0303	F
1	1	New support frame-rev6- weld on WCD Ass'y (Production)	AB0330	B
Pos Nr	Qty.	Definition	Item No	Rev

DS-SMARTEAM® - Editor V5-6R2015 Service Pack 3 Product/Part Revision  
(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !

General information unless otherwise stated according to 120-3746-01		120-3746-01	
Essential information unless otherwise stated according to 801-815-2		801-815-2	
Request unless otherwise stated according to 120-3560		120-3560	
<b>Project: Astroparticle Physics Auger</b>			
Top folder: SSD Production		DATES: <b>an</b> 07/01/2017 07/01/2017 07/01/2017	Revision: <b>E</b> A. Korporal A. Korporal
Name:		 Item number: <b>AB0335</b> Released	
<b>SSD Type D-83mm (Support incl.)</b> <b>on WCD Assy (Production)</b> National Institute for Subatomic Physics Source: Part 100, 10000		NIKHEP number: <b>45500-MT-00757</b>	
This drawing may not be used for commercial purposes without written authorization.			



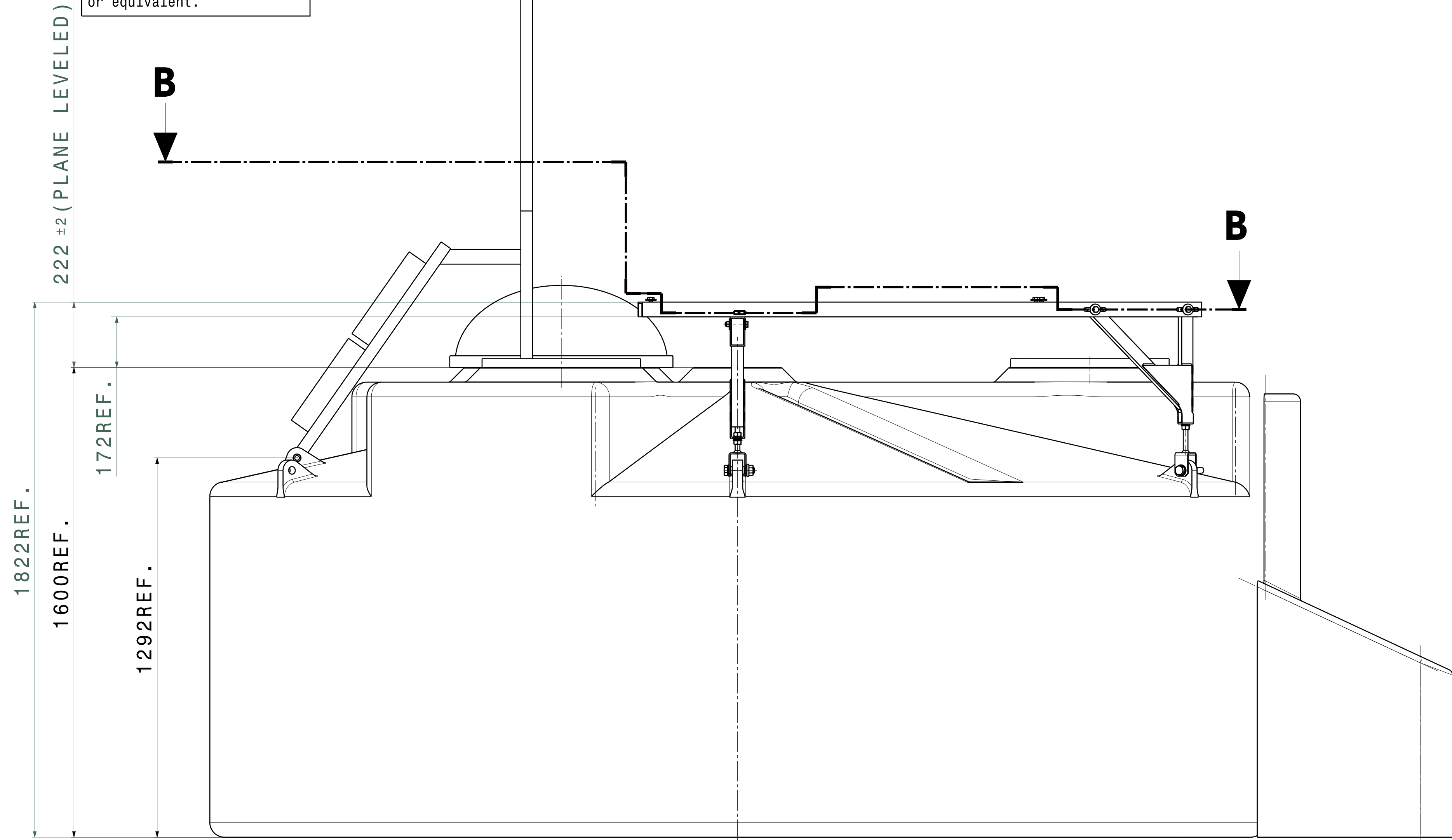


Top view  
Scale: 1:10

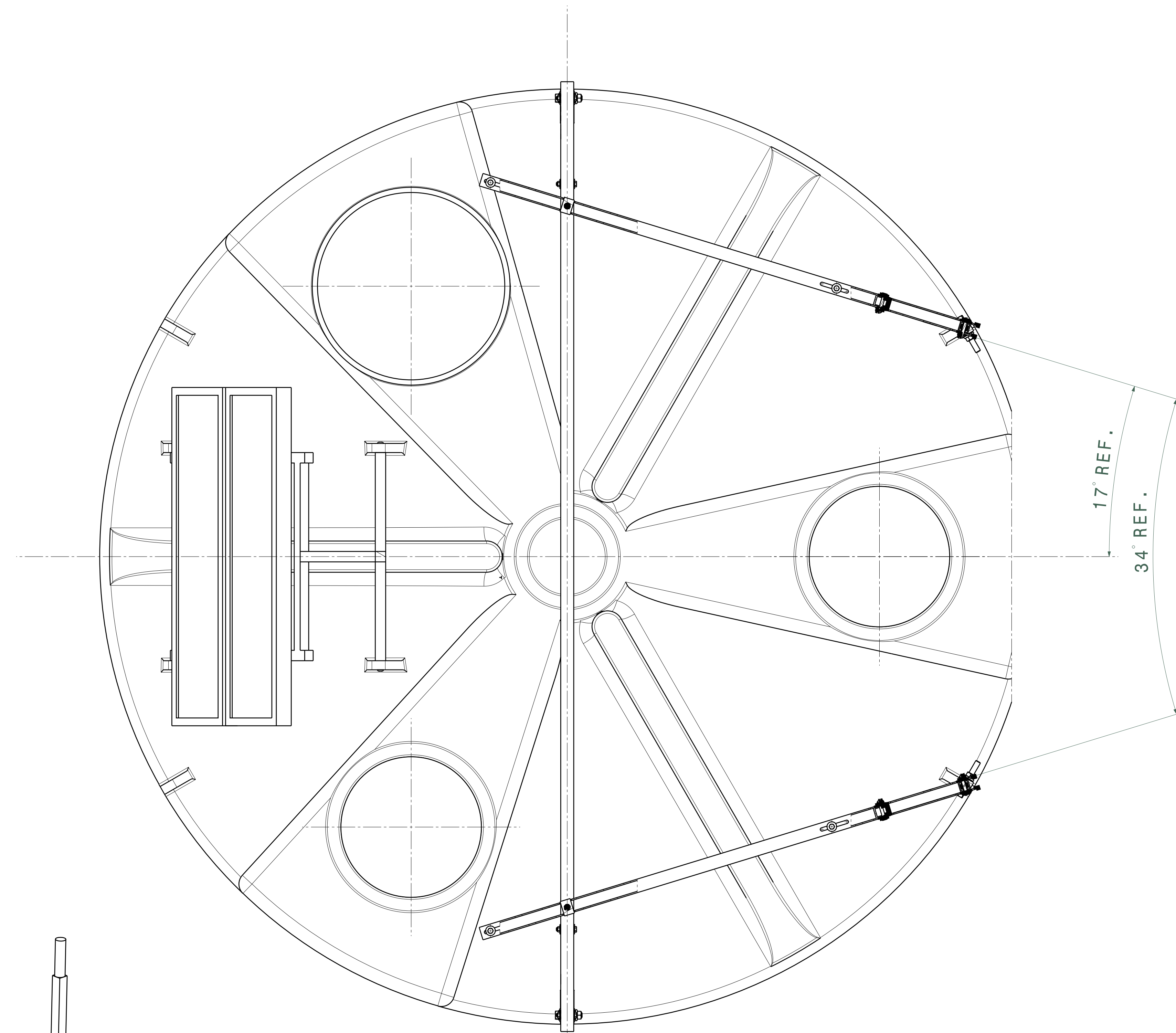
W

DIRECTIONS VALID FOR:  
AUGER SOUTH (MENDOZA-ARGENTINA) LOCATION

APPLY PLUMB RULE  
Stabila STB70P2278 70P-2-2  
Level 2000mm (2m or 78inch)  
Part no. : 02422  
Barcode : 4005069024222  
or equivalent.



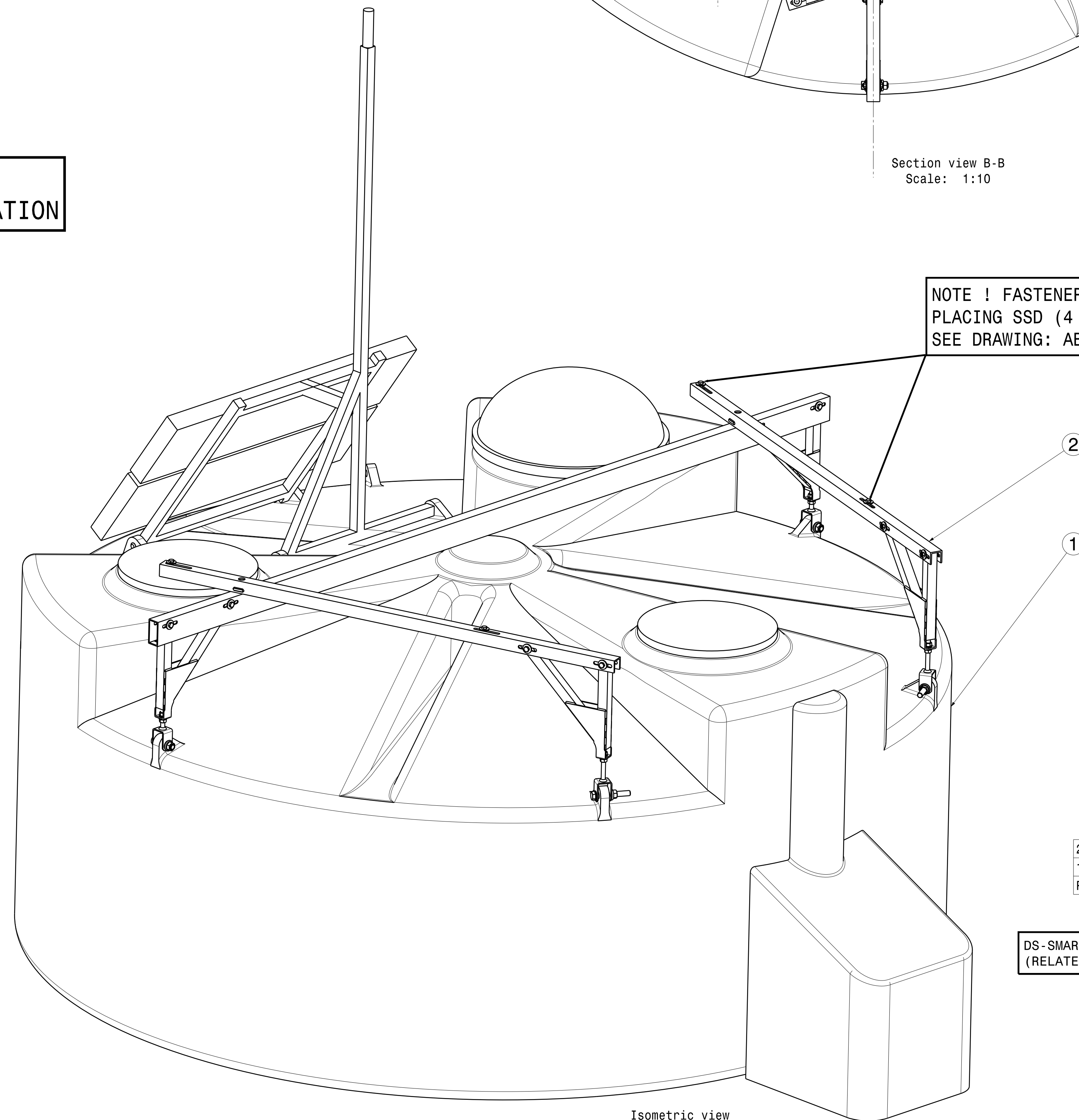
Front view  
Scale: 1:10



Section view B-B  
Scale: 1:10

NOTE ! FASTENERS MOUNT AFTER  
PLACING SSD (4 POSITIONS)  
SEE DRAWING: AB0335

and AB0336



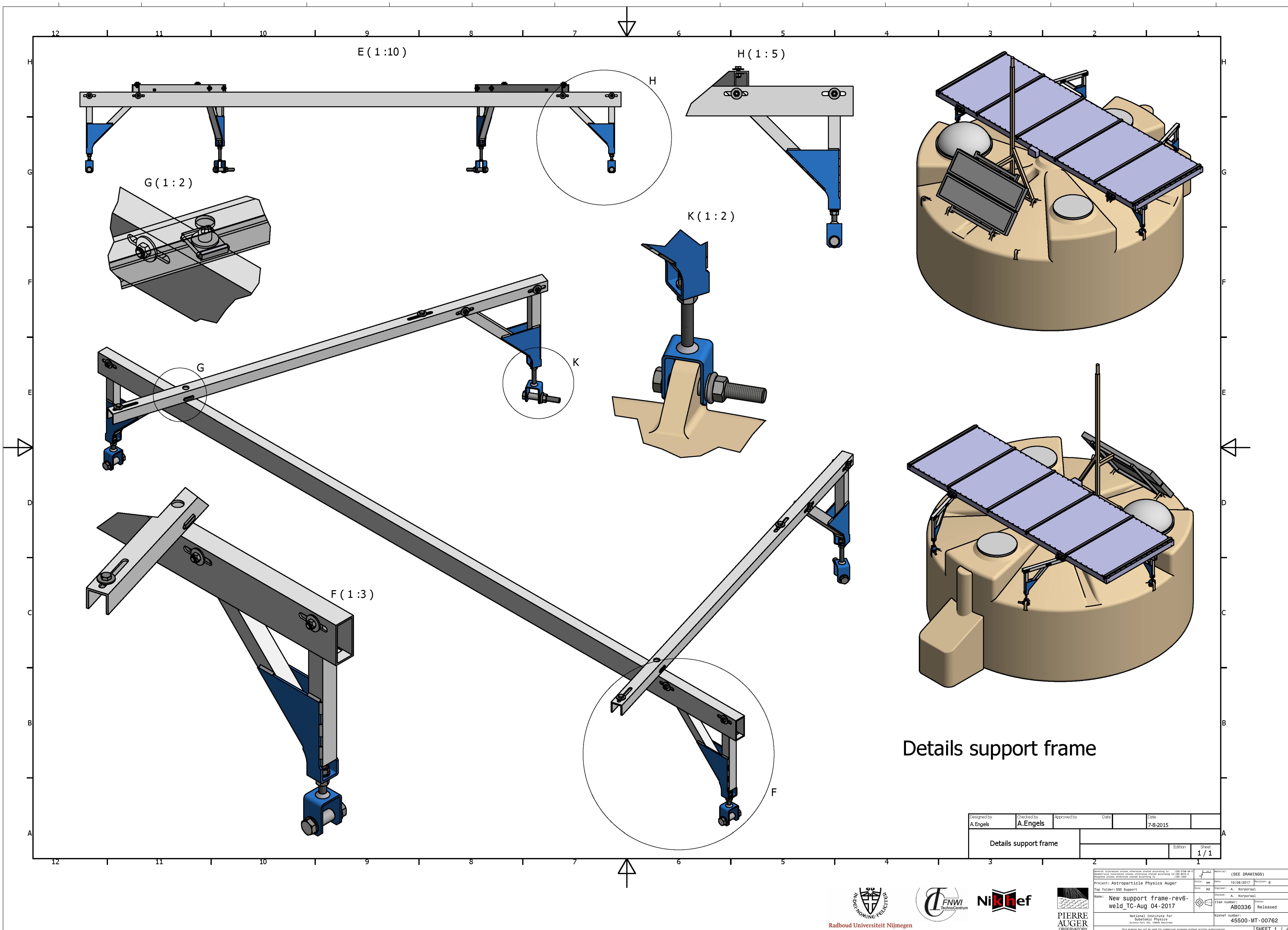
Isometric view  
Scale: 1:10

2	1	New support frame-rev6- weld_TC-Aug 04-2017	AB0336	A
1	1	LSD Tank F Ass'y	AA8955	C
Pos	Nr	Qty.	Definition	Item No

DS-SMARTEAM® - Editor V5-6R2015 Service Pack 3 Product/Part Revision  
(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !

General tolerances unless otherwise stated according to ISO 2768-MK-6 Geometrical tolerances unless otherwise stated according to ISO 1101-2 Surface finish unless otherwise stated according to ISO 13565-1					
Project: Astroparticle Physics Auger Top folder: SSD Production		Issue	Date: 10/08/2017	Revision: C	
		Drawn: AD	Engineer: A. Korporaal		
Name: New support frame-rev6- weld on WCD Ass'y (Production)		Checked: A. Korporaal			
		Item number: AB0330	(Item number: AB0330)	Status: Released	
National Institute for Subatomic Physics Science Park 107, Theoretical Division		Nikhef number: 45500-MT-00748			
This drawing may not be used for commercial purposes without written authorization.					

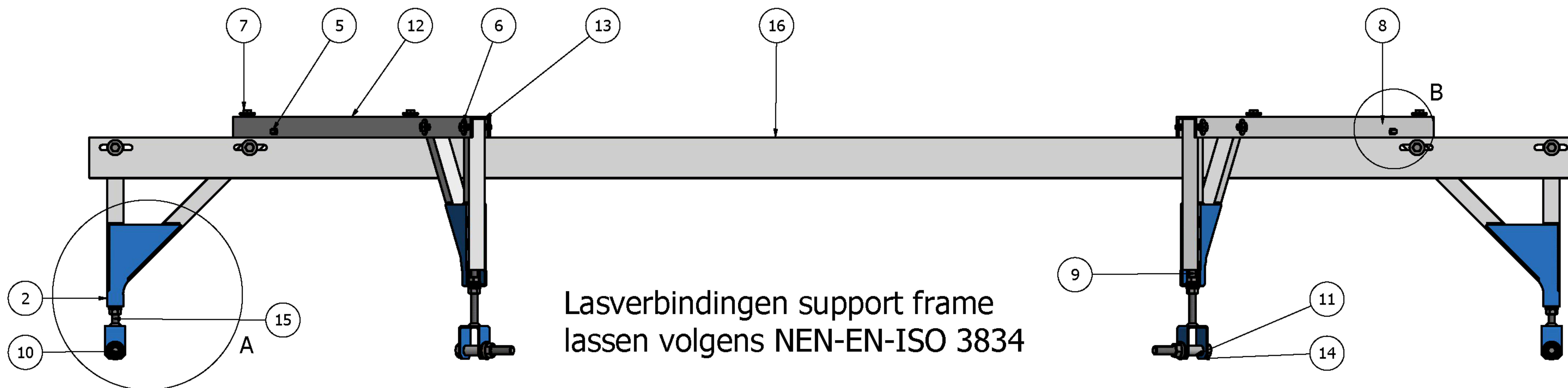




Designed by A. Engels	Checked by A. Engels	Approved by	Date 7-8-2015	Sheet 1 / 1
Details support frame				

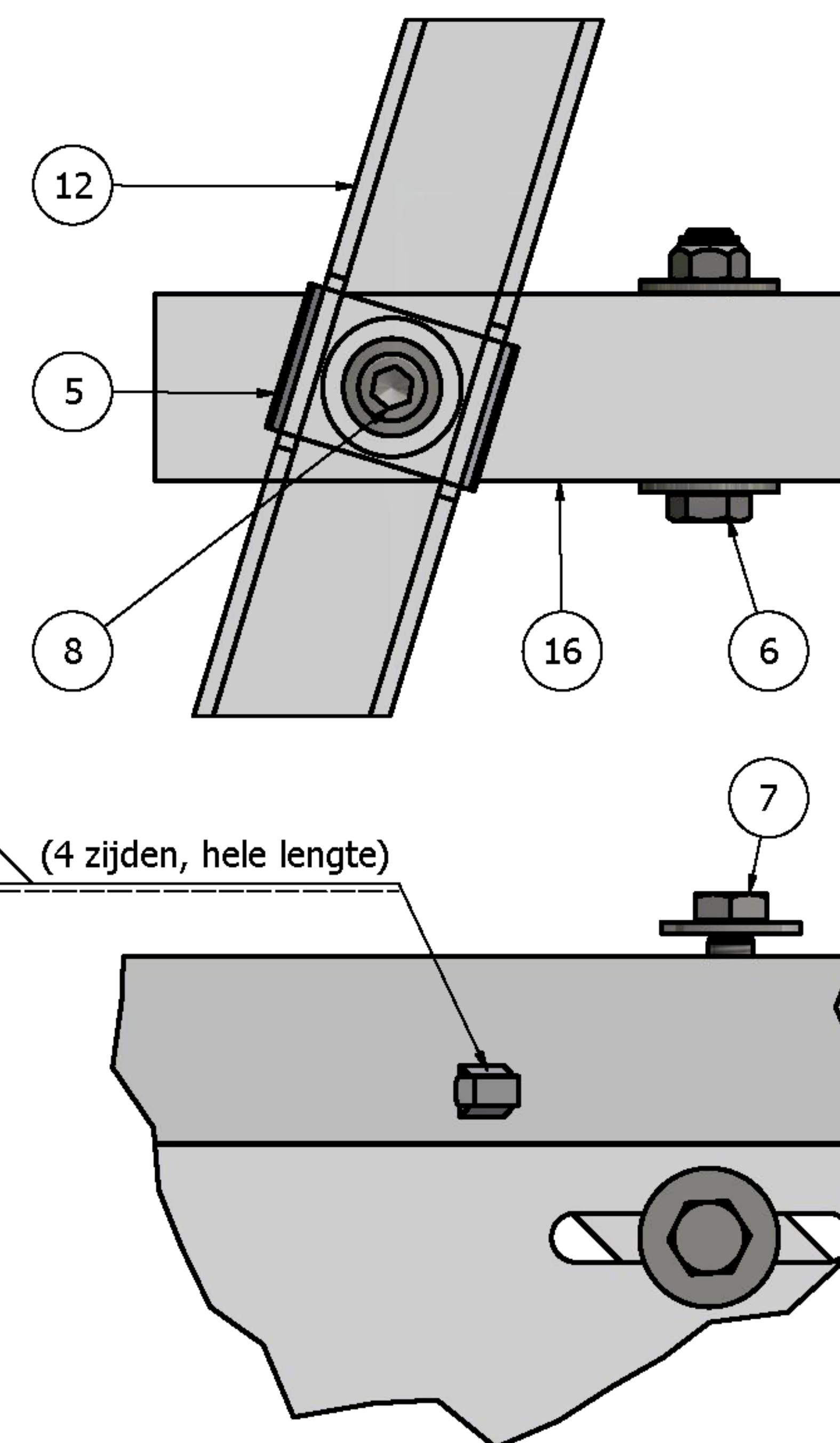
General tolerances unless otherwise stated according to ISO 2768-MC Dimensional tolerances unless otherwise stated according to ISO 8015-2 Progress unless otherwise stated according to ISO 1000		Material: (SEE DRAWINGS)	
Project: Astroparticle Physics Auger		Revision: B	
Top folder: ISO Support		Drawing: A. Korpelaar	
Name: New support frame-rev6-weid_TC-Aug 04-2017		Drawing: A. Korpelaar	
Item number: AB0336		Drawing: Released	
Nikhef number: 45500-MT-00762			



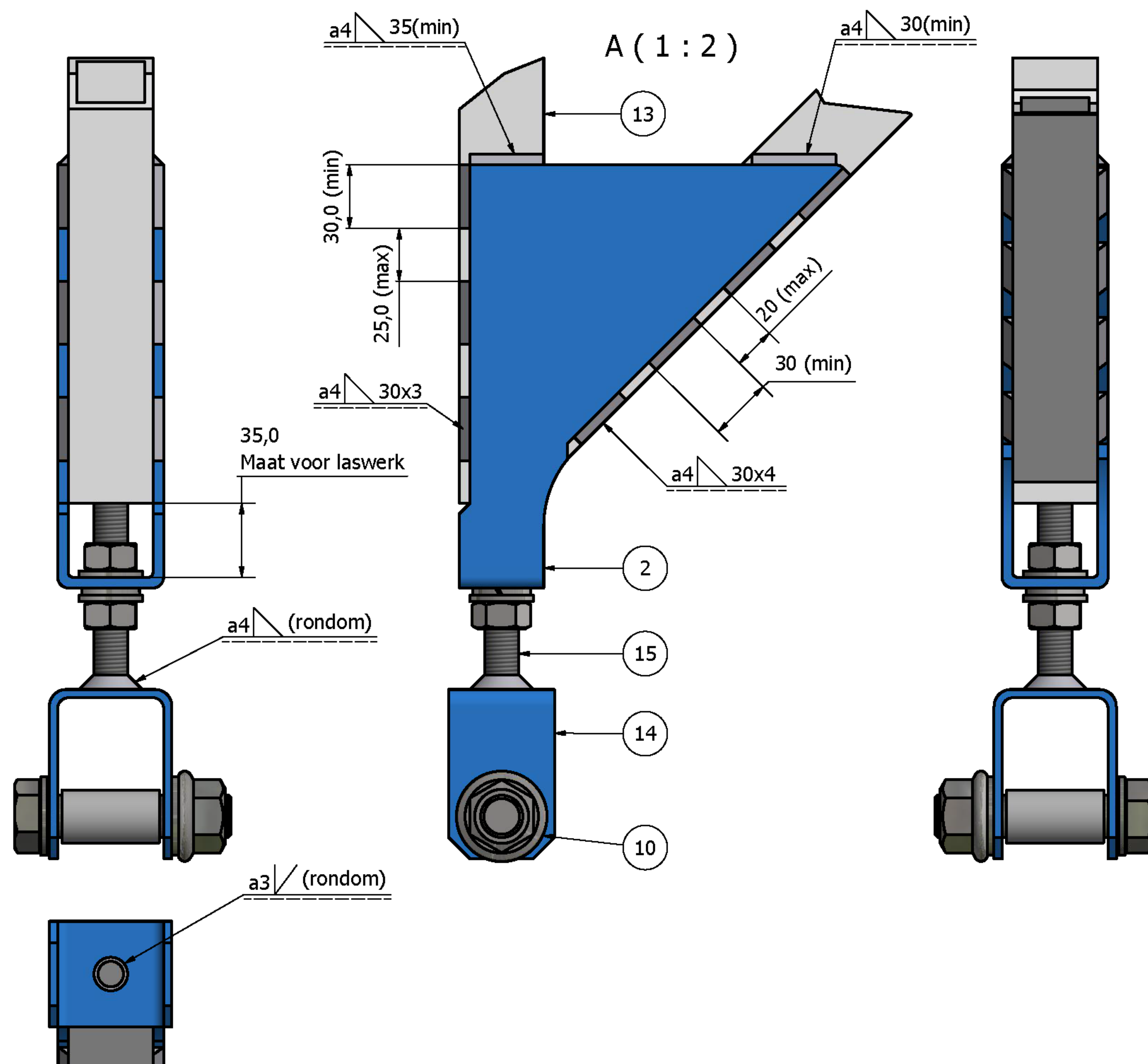


Lasverbindingen support frame  
lassen volgens NEN-EN-ISO 3834

B ( 1 : 2 )



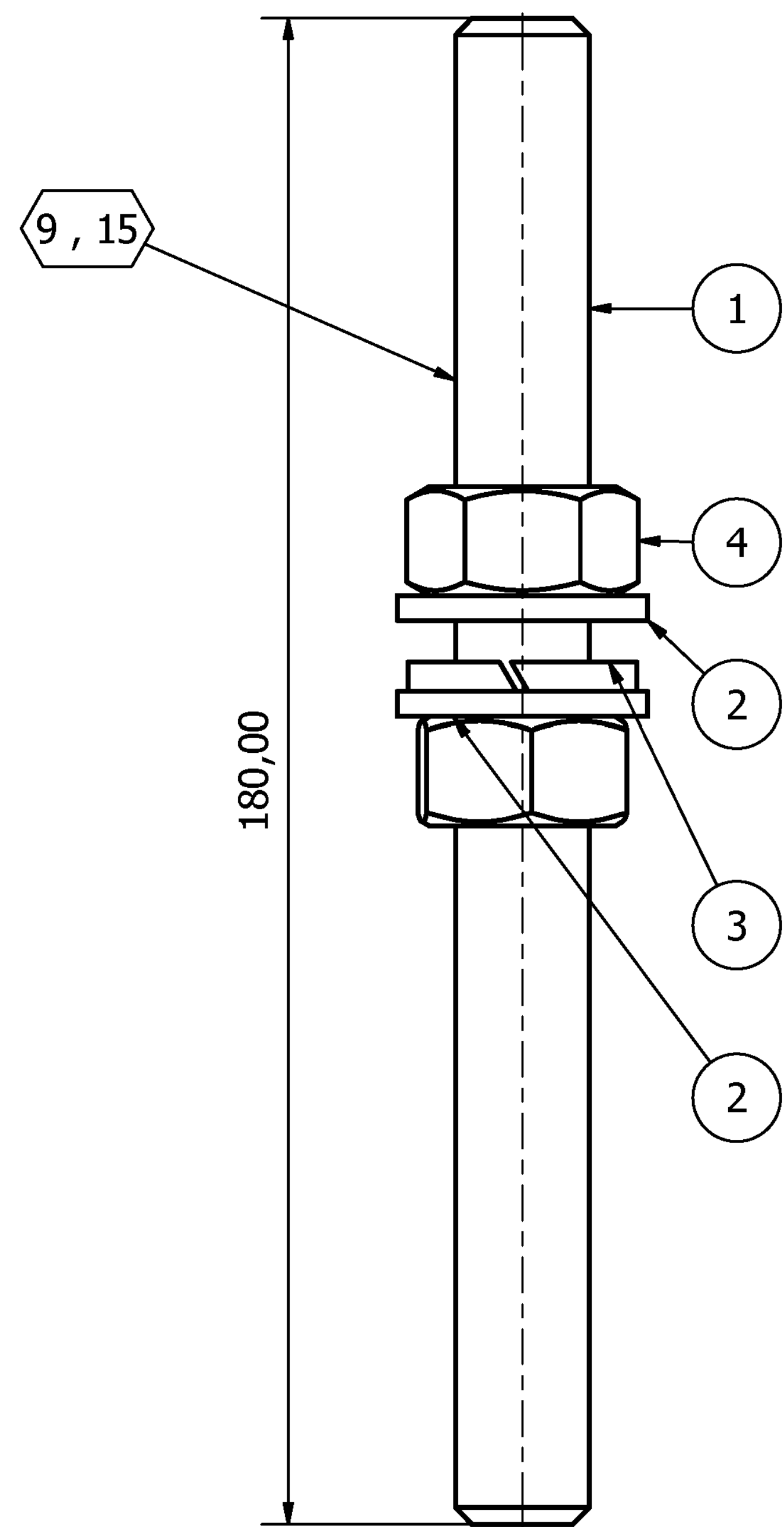
Alle blank stalen  
delen beschermen  
tegen corrosie:  
gecoat of verzinkt



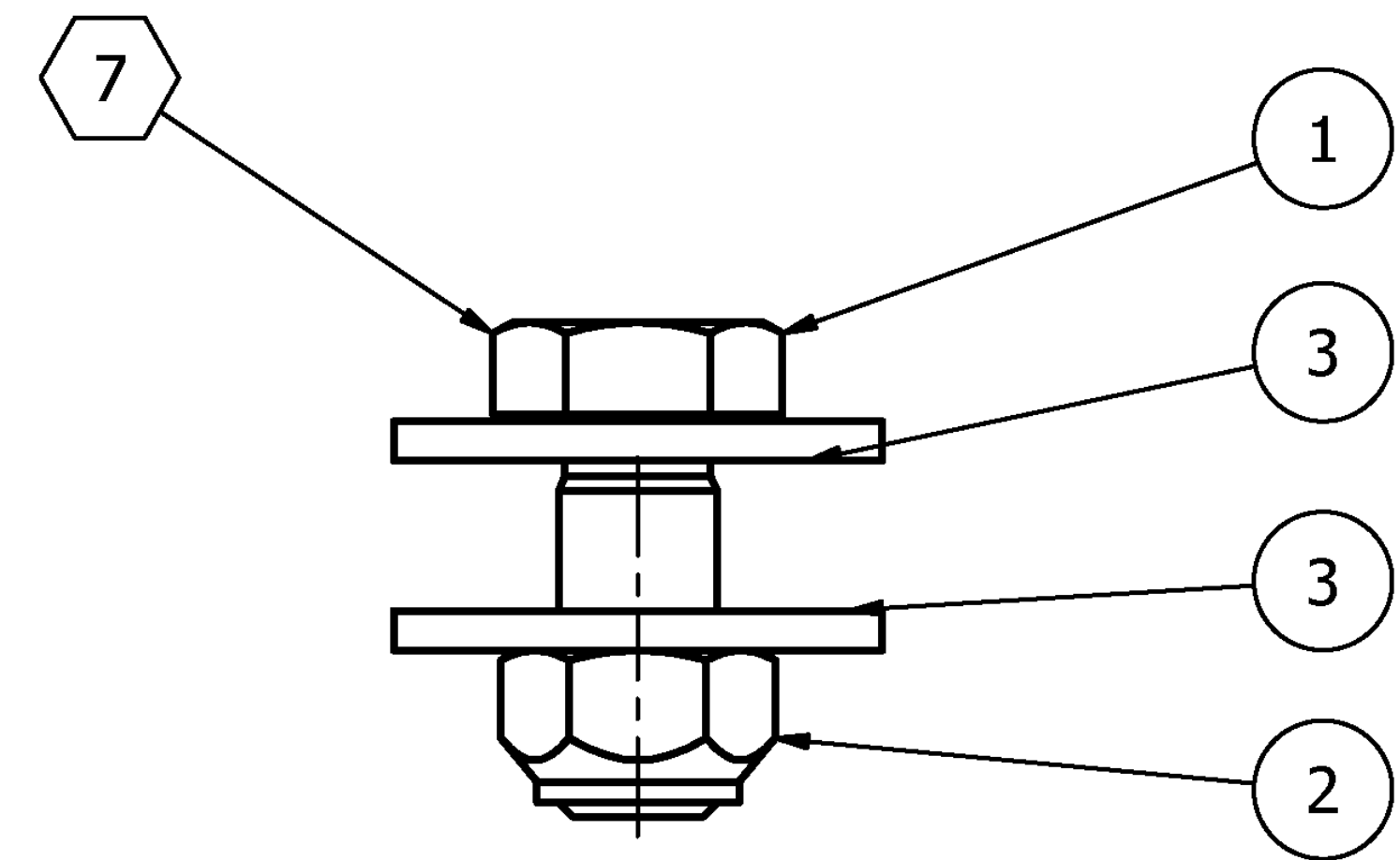
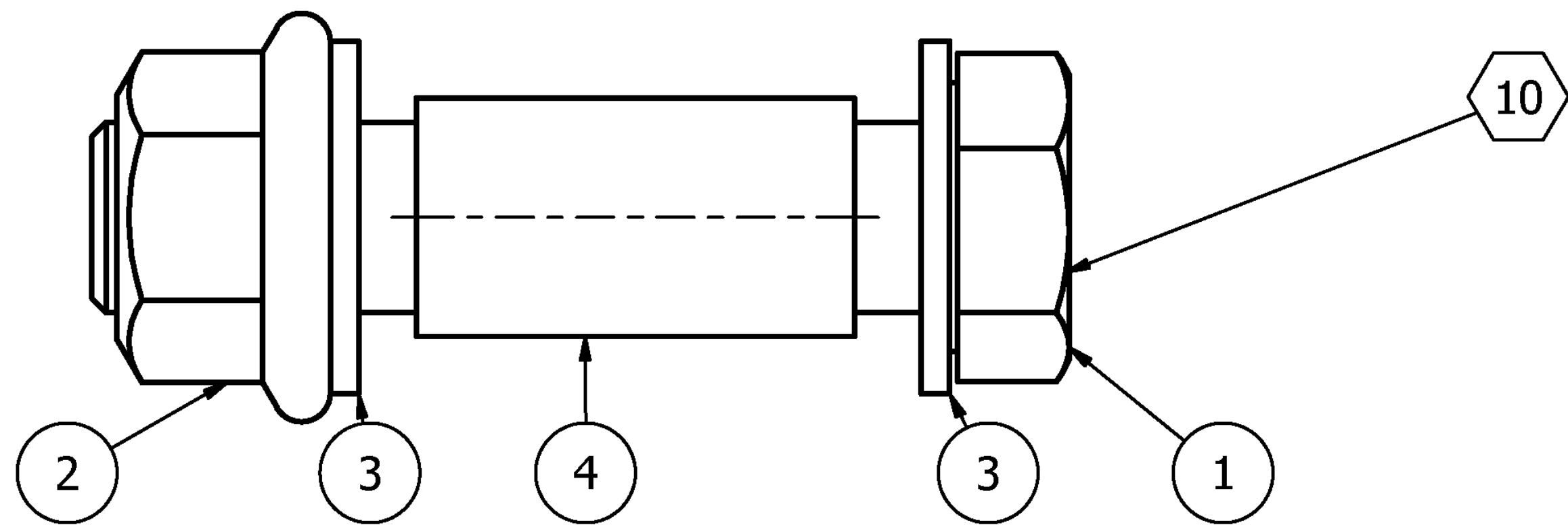
PARTS LIST		
ITEM	QTY	PART NUMBER
2	4	omzetplaat1 welded rev6
5	2	connection strip profielB
6	8	Bolted Connection driehoek
7	4	Bolted Connection SSD-support frame
8	2	Bolted Connection beams
9	2	Draadstang korte beam
10	2	boutverbinding tank lange zijde
11	2	boutverbinding tank korte zijde
12	2	new support profielB type3
13	4	triangle type3
14	4	U gaffel type3
15	2	Draadstang lange beam
16	1	Buis rechthoek 100x50x4

St.Nr.	Aant.	Benaming	Materiaal	Tek. Nr.	Opmerking
Ontw.		Schaal	Ruwheid	Maattolerantie	Vorm en Plaatstol.
Get.		Datum	NEN 3634	NEN-ISO-406	NEN-ISO-1101
 Faculteit Natuurkunde, Wetenschappen en Informatica Radoud Universiteit Nijmegen					
BB.					Wijz.



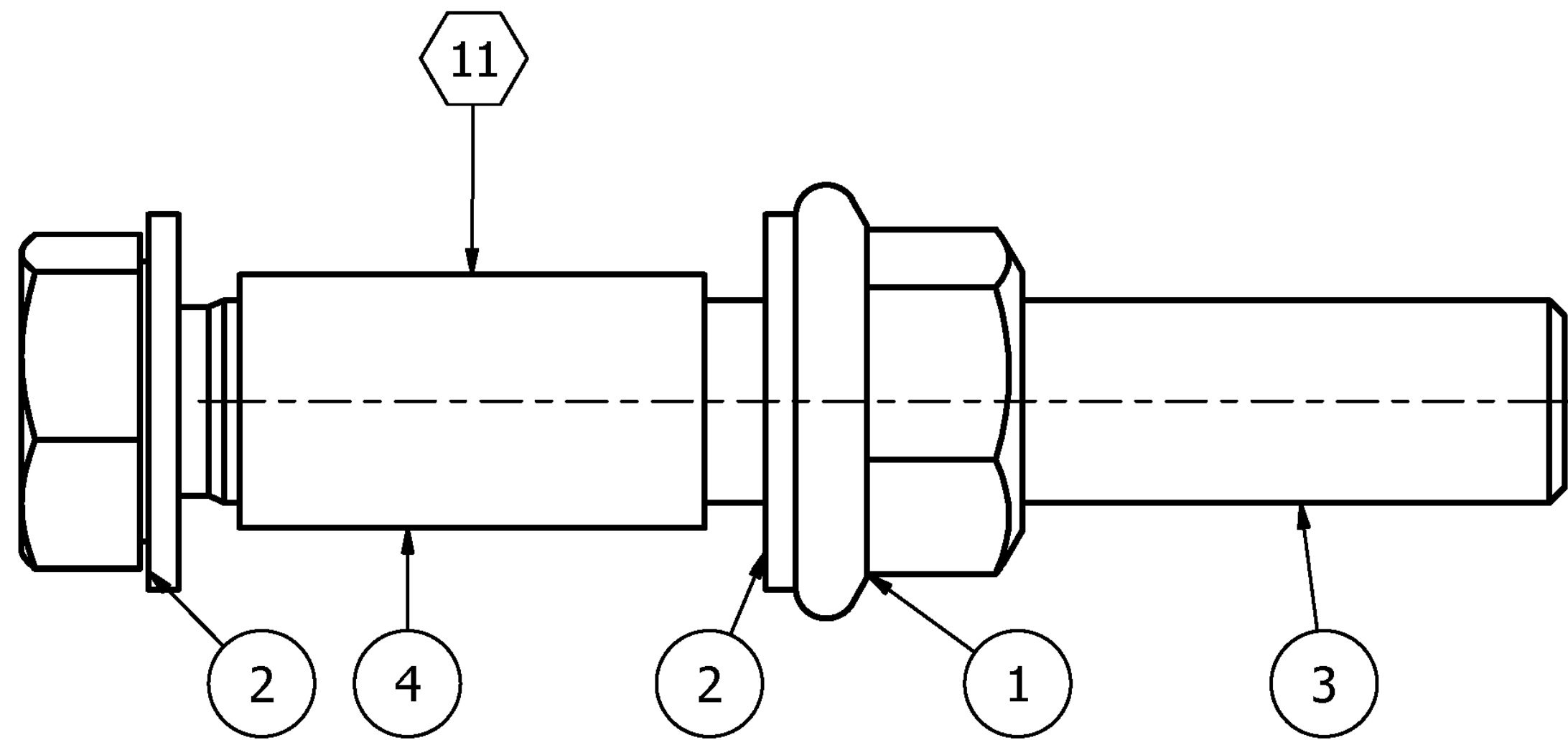


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	DIN 931-1 - M20 x 90	Hex-Head Bolt
2	2	ANSI B18.16.3M - M20 x 2.5 Metal Type	Prevailing Torque Type Hex Flange Nut - Steel - Metric
3	4	DIN 125 - A 21	Washer
4	2	bus tank type3	25x2x46 Aluminium AW 6060

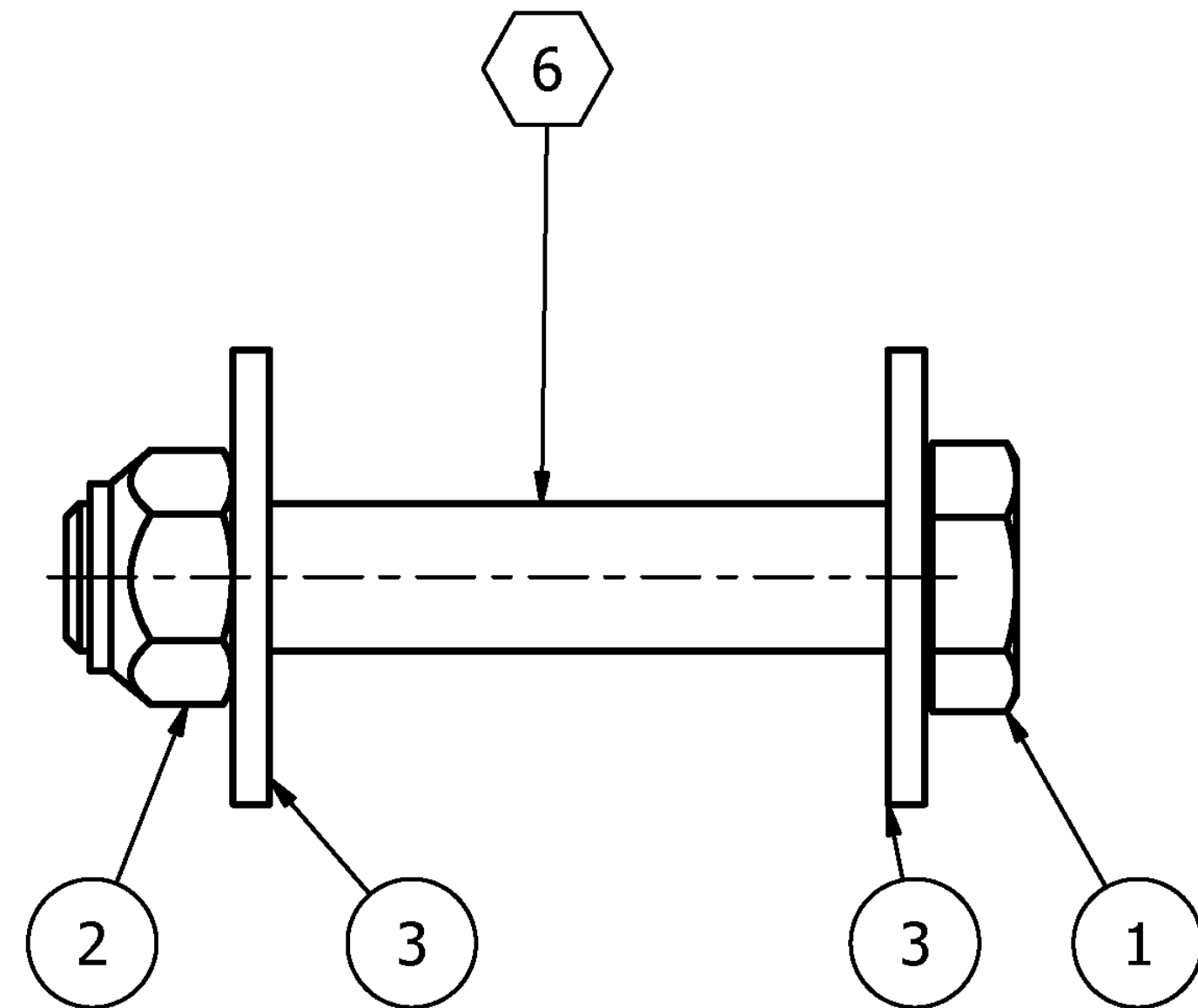


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	DIN 933 - M12 x 30	Hex-Head Bolt
2	4	ANSI B18.16.3M - Property Class 5 and 10 - Metric M12 x 1.75 Metal Type	Prevailing Torque Type Hex Nut - Steel Metric - Property Class 5,9 and 10
3	8	ISO 7093 A - ST 12 - 140 HV	Plain washers - Large series - Product grade A

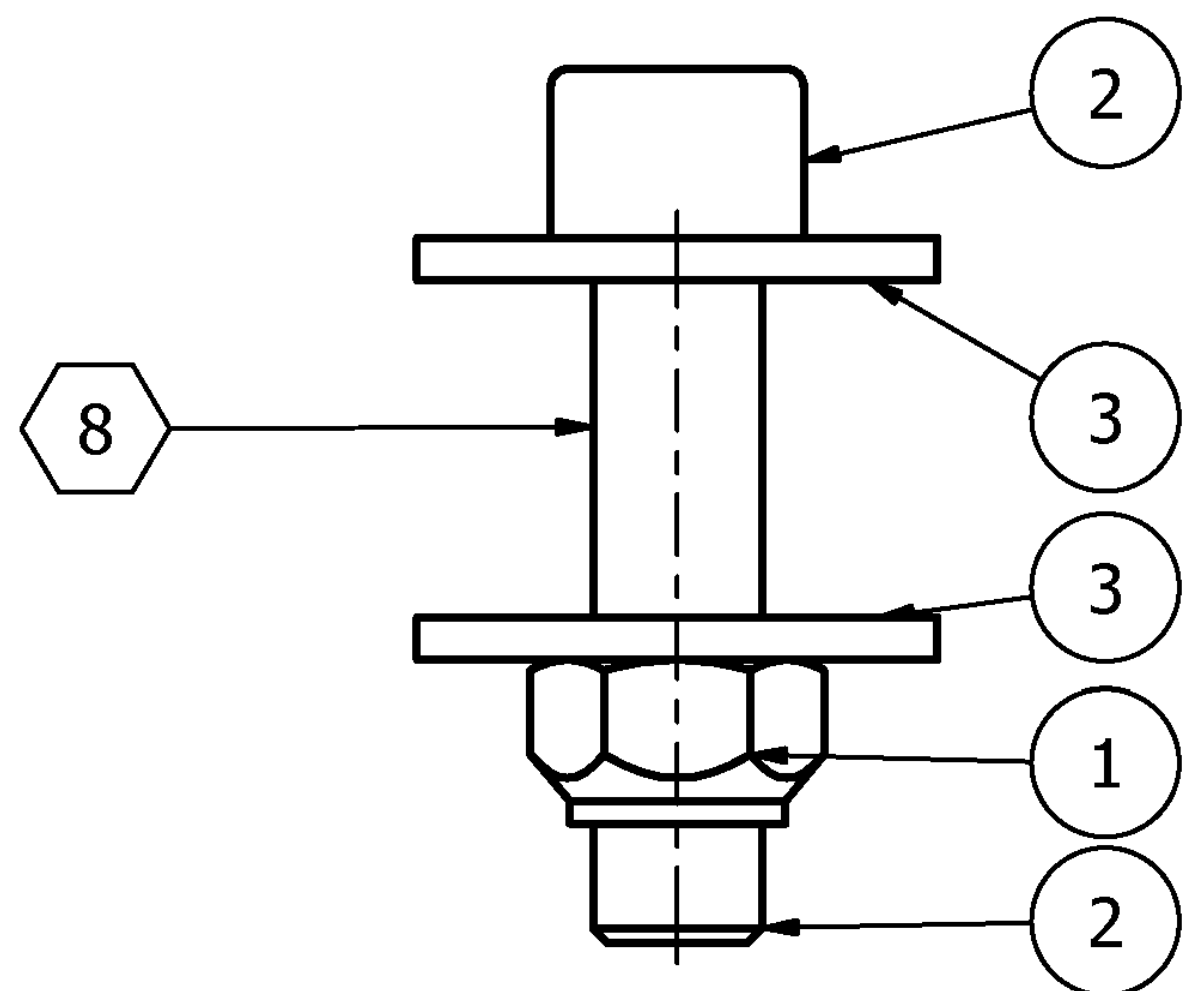
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	draadstang1 rev6	M16 x 180 verzinkt
2	8	DIN 125 - A 17	Washer
3	4	DIN 127 - A 16	Spring Washer
4	8	DIN 934 - M16	Hex Nut



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	ANSI B18.16.3M - M20 x 2.5 Metal Type	Prevailing Torque Type Hex Flange Nut - Steel - Metric
2	4	DIN 125 - A 21	Washer
3	2	DIN 933 - M20 x 140	Hex-Head Bolt
4	2	bus tank type3	25x2x46 Aluminium AW 6060



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	DIN 931-1 - M12 x 70	Hex-Head Bolt
2	8	ANSI B18.16.3M - Property Class 5 and 10 - Metric M12 x 1.75 Metal Type	Prevailing Torque Type Hex Nut - Steel Metric - Property Class 5,9 and 10
3	16	ISO 7093 A - ST 12 - 140 HV	Plain washers - Large series - Product grade A

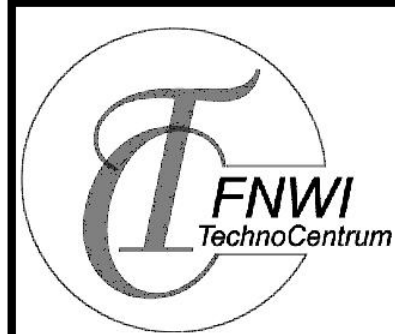


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	ANSI B18.16.3M - Property Class 5 and 10 - Metric M12 x 1.75 Metal Type	Prevailing Torque Type Hex Nut - Steel Metric - Property Class 5,9 and 10
2	2	DIN 912 - M12 x 50	Cylinder Head Cap Screw
3	4	ISO 7093 A - ST 12 - 140 HV	Plain washers - Large series - Product grade A

Standaard koop onderdelen  
Part lists geven totale hoeveelheid per  
frame weer

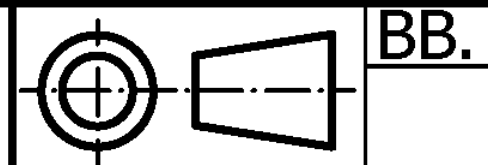
Alle blank stalen delen  
beschermen tegen corrosie:  
gecoat of verzinkt

St.Nr.	Aant.	Benaming	Materiaal	Tek. Nr.	Opmerking
Ontw.		Schaal 1:1	Ruwheid	Maattolerantie	Vorm en Plaatstol.
Get.		Datum	NEN 3634	DIN ISO 2768 T1 m	DIN ISO 2768 T2 K
Kooponderdelen					
Faculteit Natuurkunde, Wetenschapen en Informatica Radboud Universiteit Nijmegen					
Wijz.					



Kooponderdelen

Faculteit Natuurkunde, Wetenschapen en Informatica  
Radboud Universiteit Nijmegen



(SEE DRAWINGS)			
Project:	ASTROPARTICLE PHYSICS AUGER	Revision:	B
Top folder:	ISS Support	Drawn:	A. Korporaal
Name:	New support frame-rev6-we1d_TC-Aug 04-2017	Item number:	AB0336
Nikhef number:	45500-MT-00762	Released:	

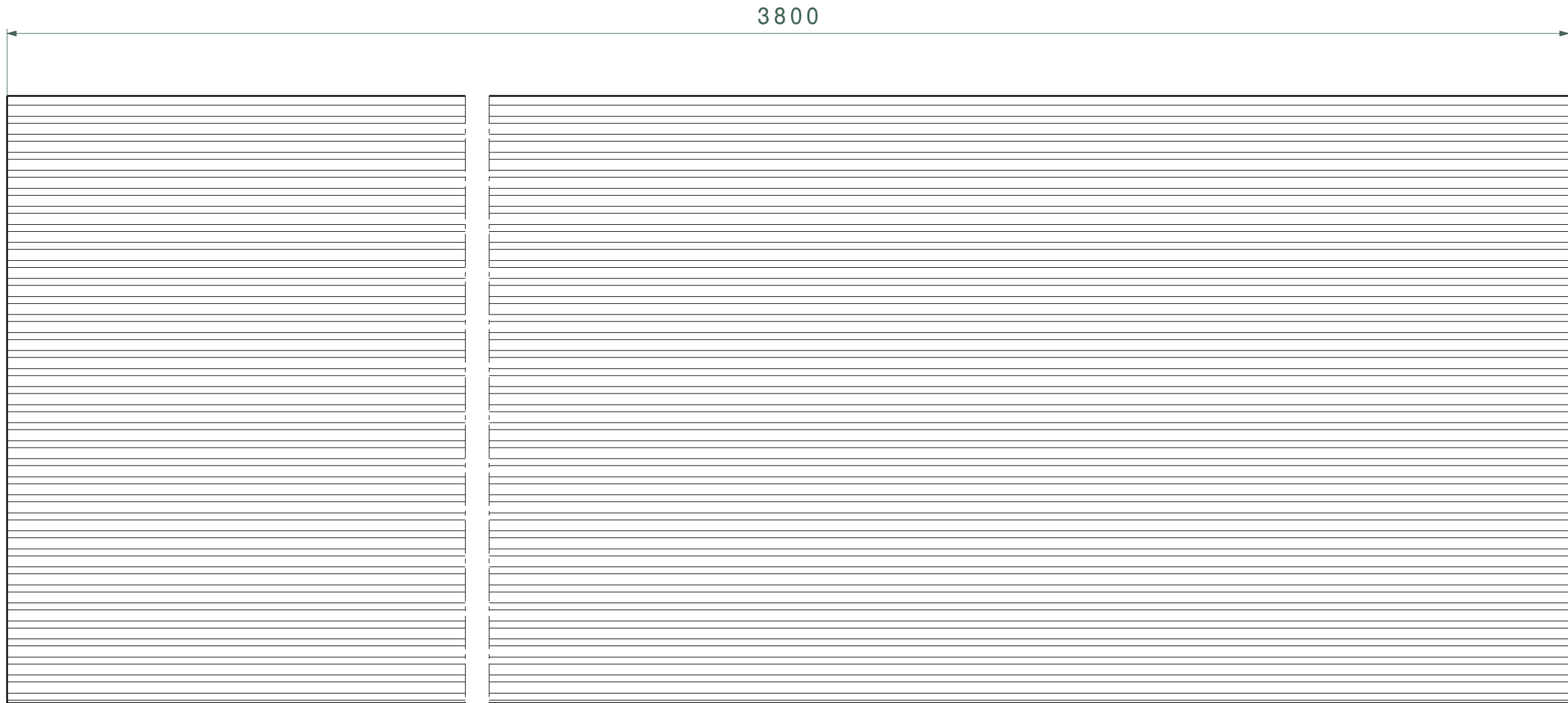




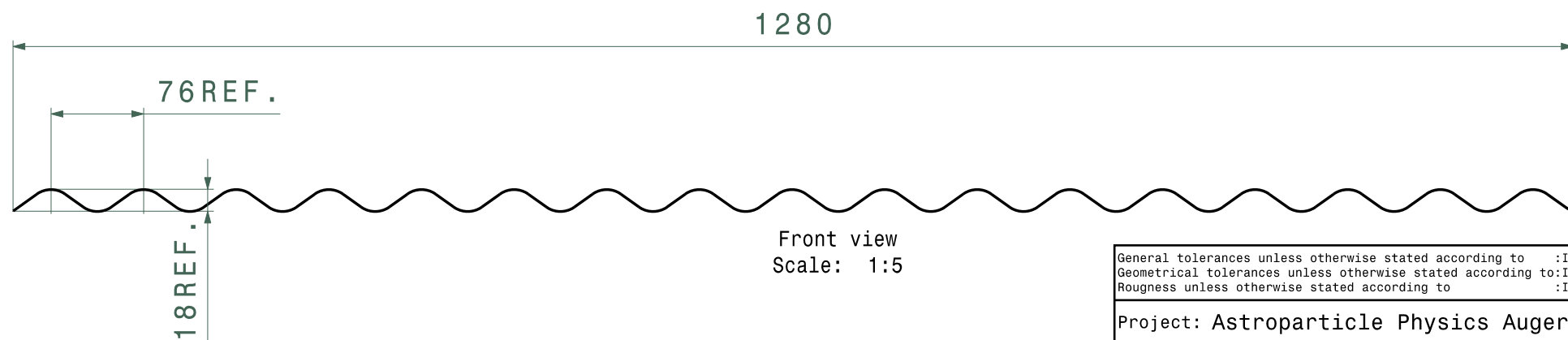








Top view  
Scale: 1:10



Front view  
Scale: 1:5

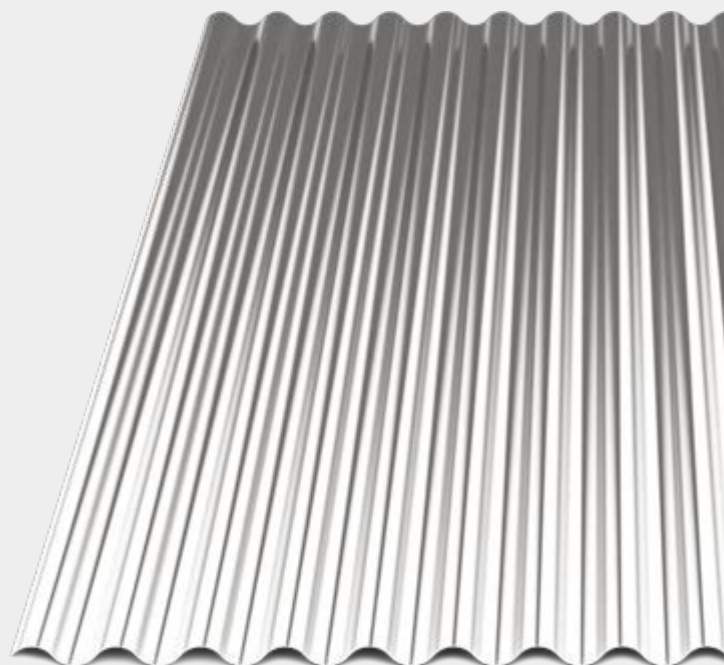
General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: Aluminum Sand 18/1292 (SANDRINI METALLI S.P.A. - Costa Volpino-Italy)	
Project: Astroparticle Physics Auger		Units: mm	Date: 09/08/2017	Revision: B
Top folder:SSD Production		Size: A3	Engineer: A. Korporaal	
Name:Corrugated Roof Panel C (18/1292_76mm)			Checked: A. Korporaal	
			Item number: AB0325	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00735	
This drawing may not be used for commercial purposes without written authorisation.				





# SAND18

Per un rivestimento prestigioso



L'aspetto estetico che dona questo prodotto è la caratteristica principale di questo profilo.



Nata in particolare per rivestimenti di facciate industriali ed edifici commerciali, coniuga l'aspetto estetico a quello tecnologico di una facciata ventilata e coibentata.

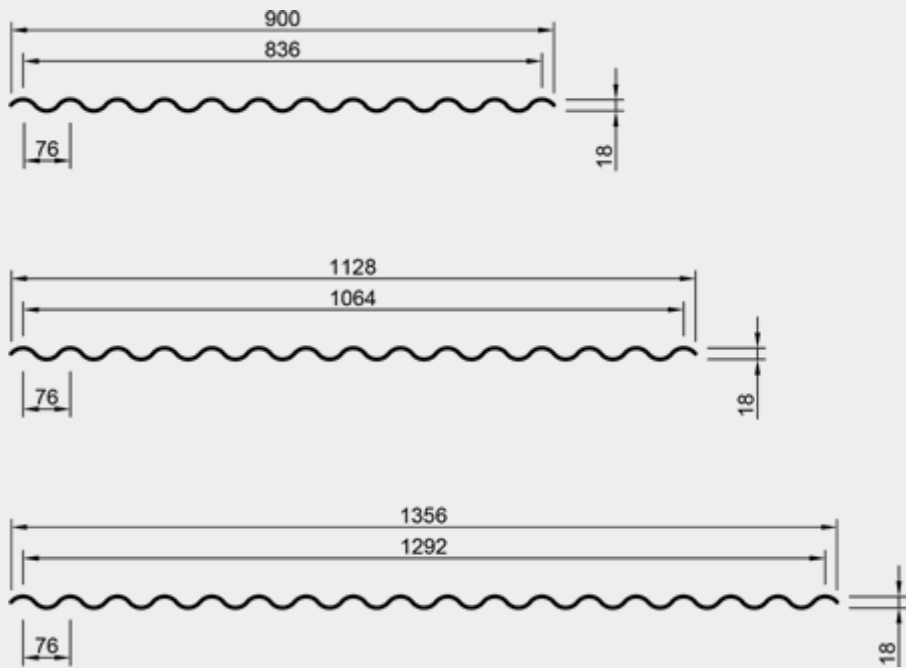
Nel caso di montaggio orizzontale rende morbide le forme creando giochi di riflessi e planarità.

Il nostro impianto ci consente di produrre la SAND 18 in 3 larghezze: 836, 1064, 1292 mm (riferite alle larghezze utili, comprensive di sormonto).

La lamiera grecata SAND 18 è disponibile sia nei materiali standard che nelle leghe e finiture più pregiate, per chi è alla ricerca di un aspetto unico.

Disponibile con tessuto anticondensa, guaina antirumore e anticondensa, oppure polietilene antirumore.

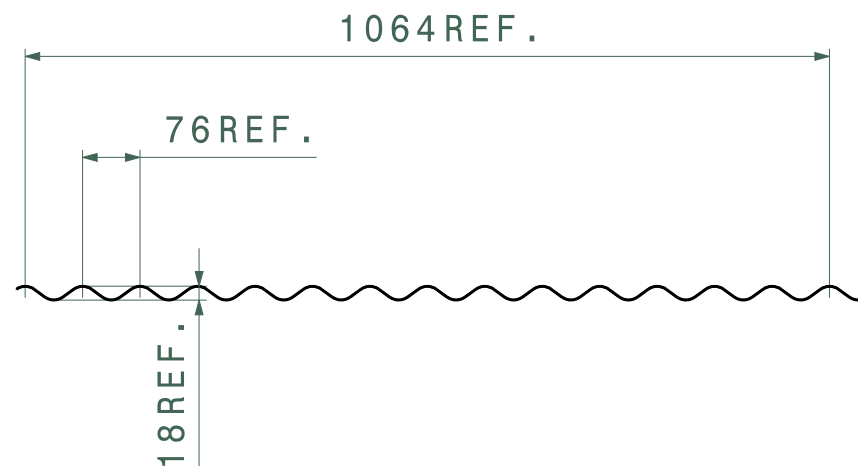
## Sezione quotata SAND18


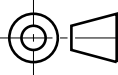


## Caratteristiche tecniche

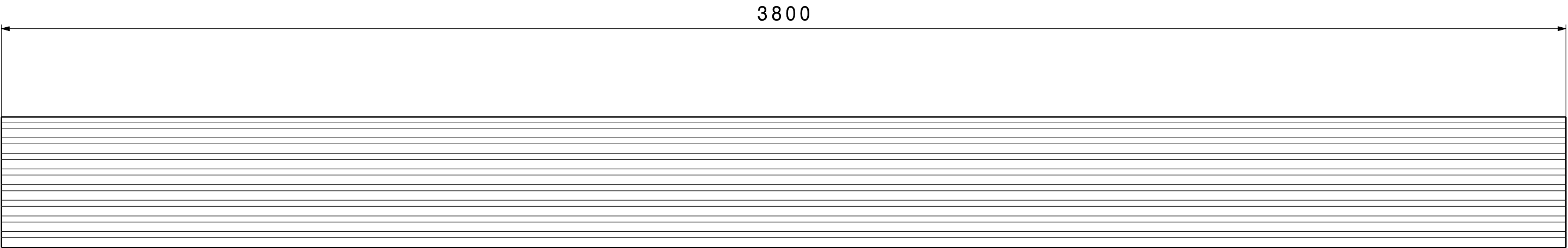
S	J ( cm4 / m )	Wp
( mm )		( cm3 / m )



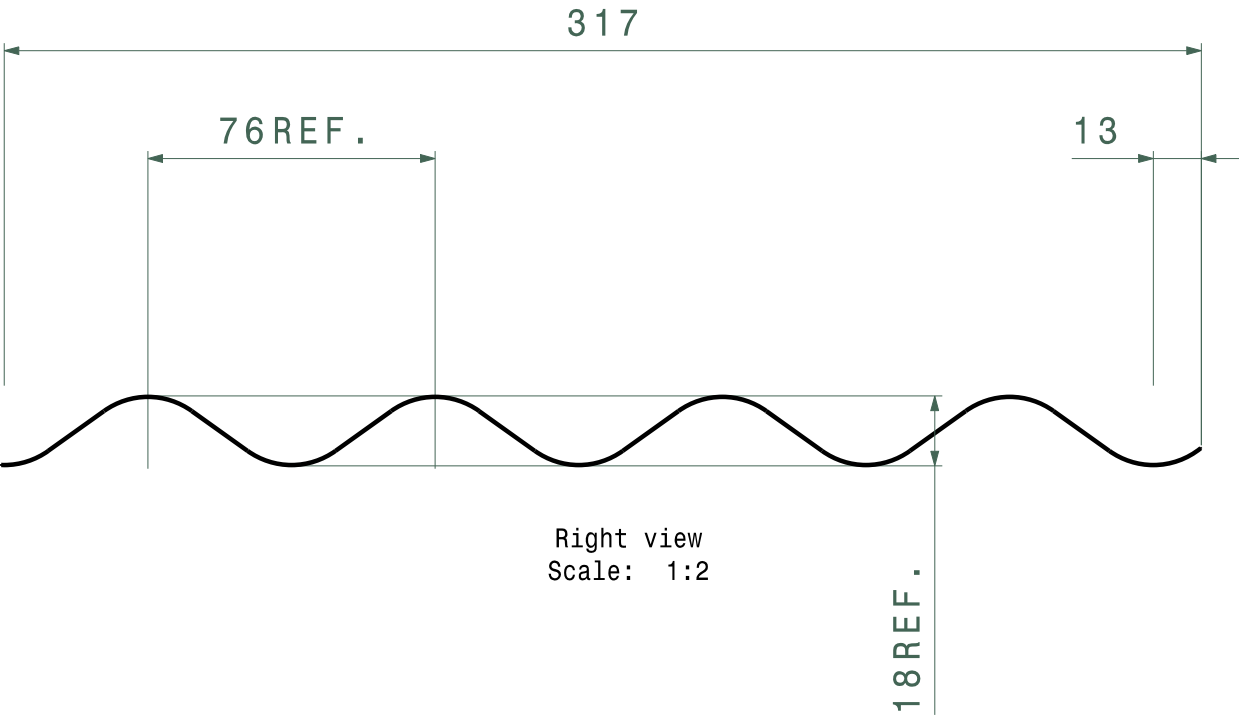
[illegible]


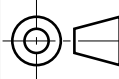
General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: EN AW-5005
Project: Astroparticle Physics Auger Top folder: SSD Production		Units: mm Size: A3	Date: 10/08/2017 Revision: B Engineer: A. Korpelaar Checked: A. Korpelaar
Name: Corrugated Roof Panel A (76x18x1064_L3800)			Item number: AB0305 Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam		Nikhef number: 45500-MT-00712	
This drawing may not be used for commercial purposes without written authorisation.			



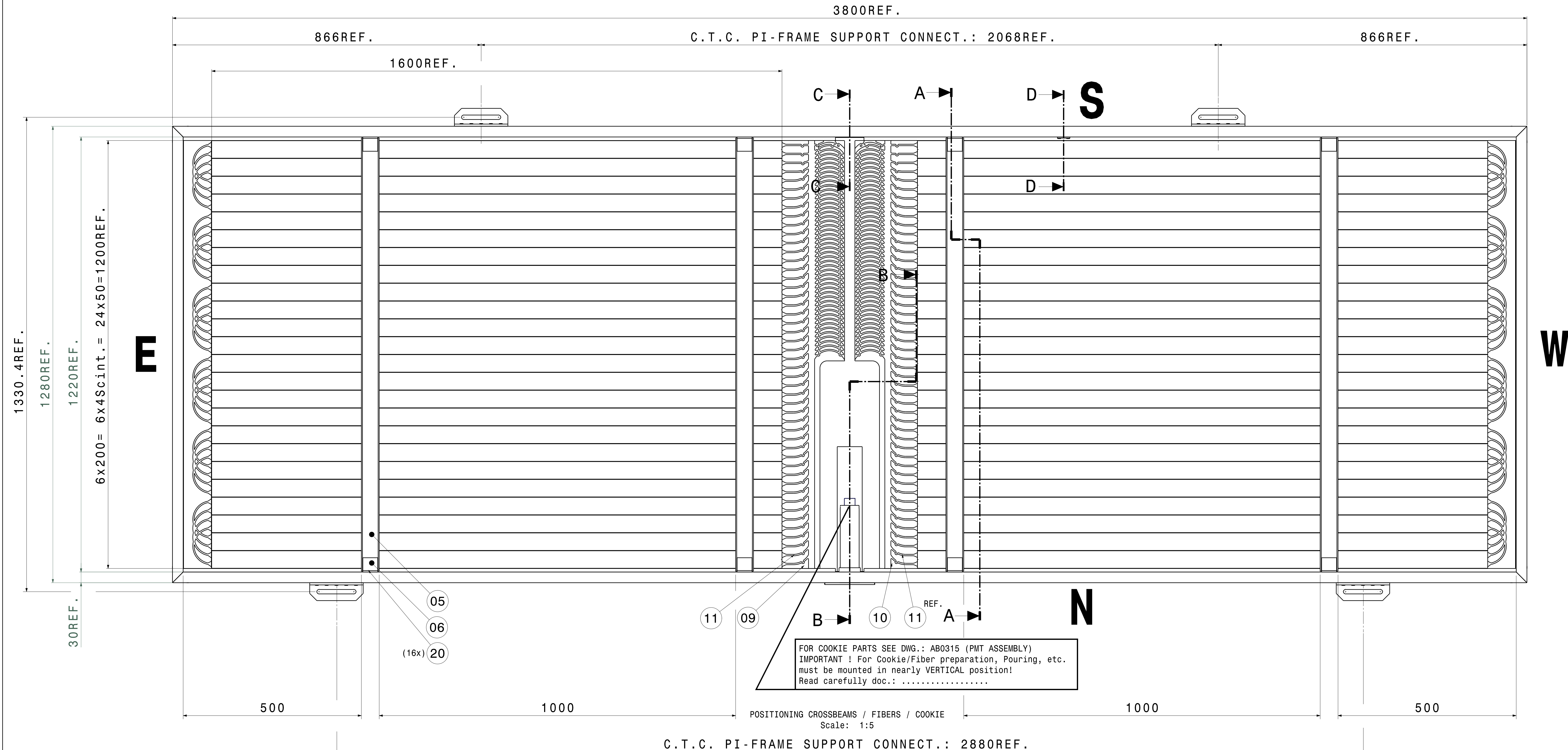
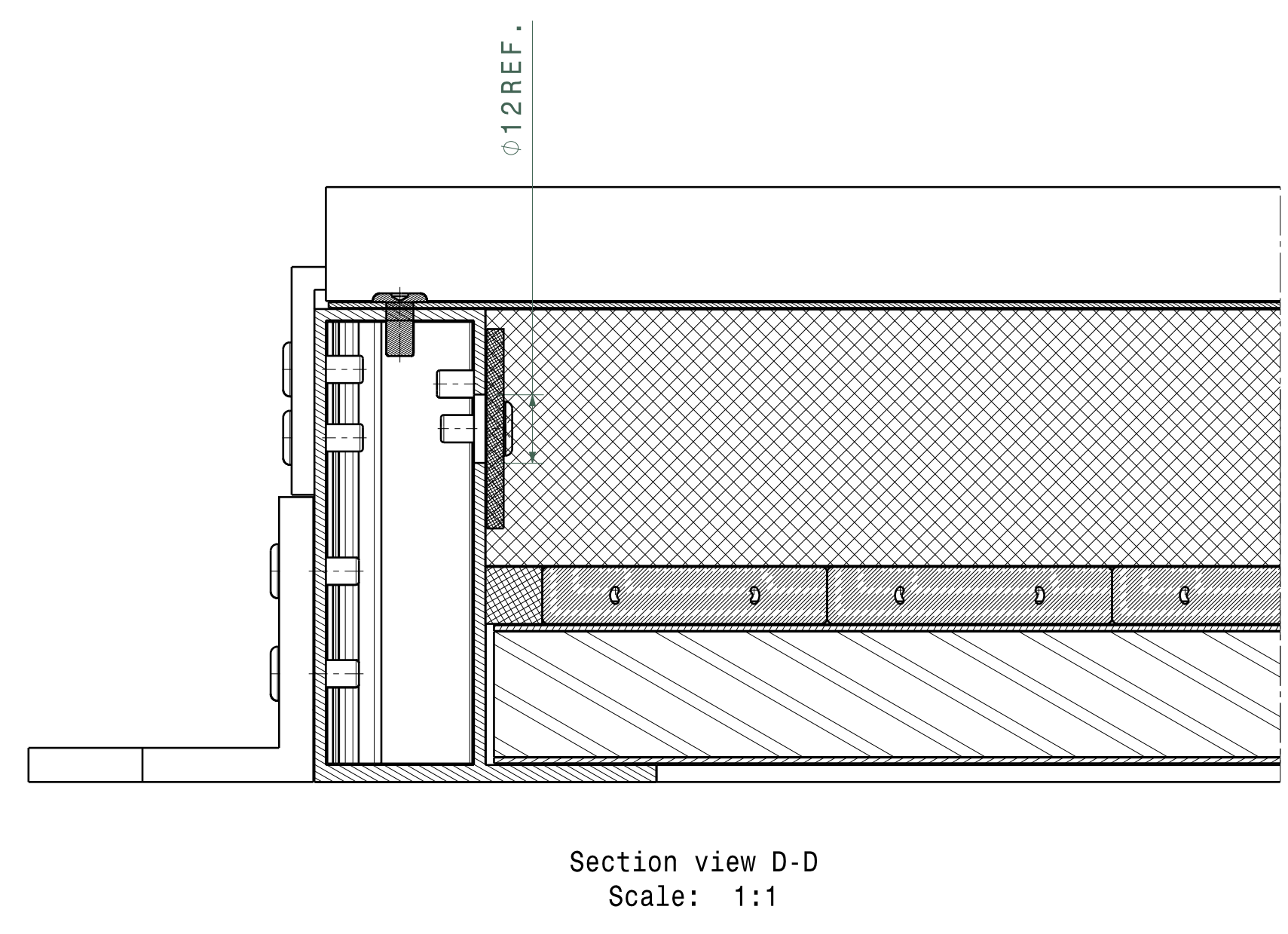
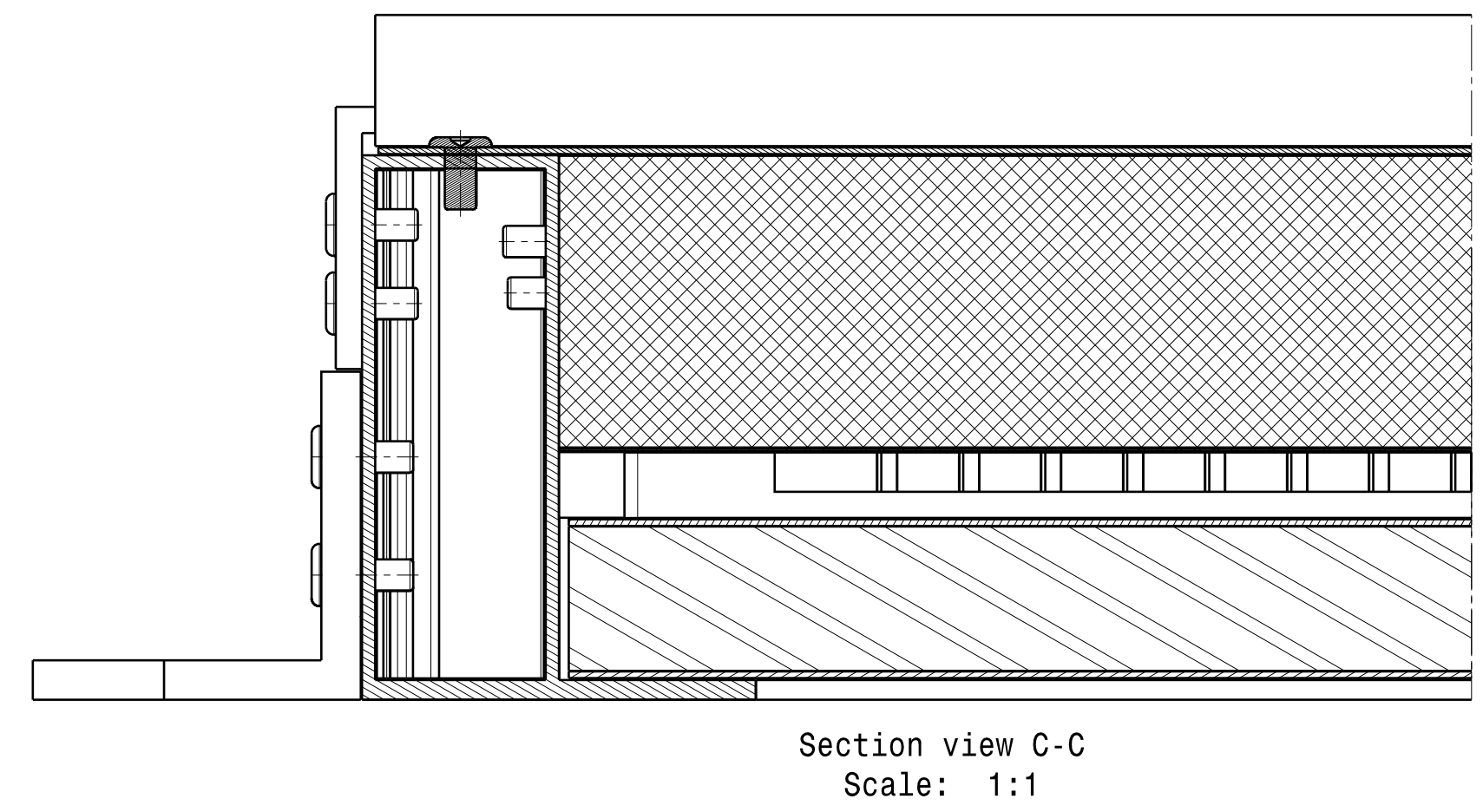
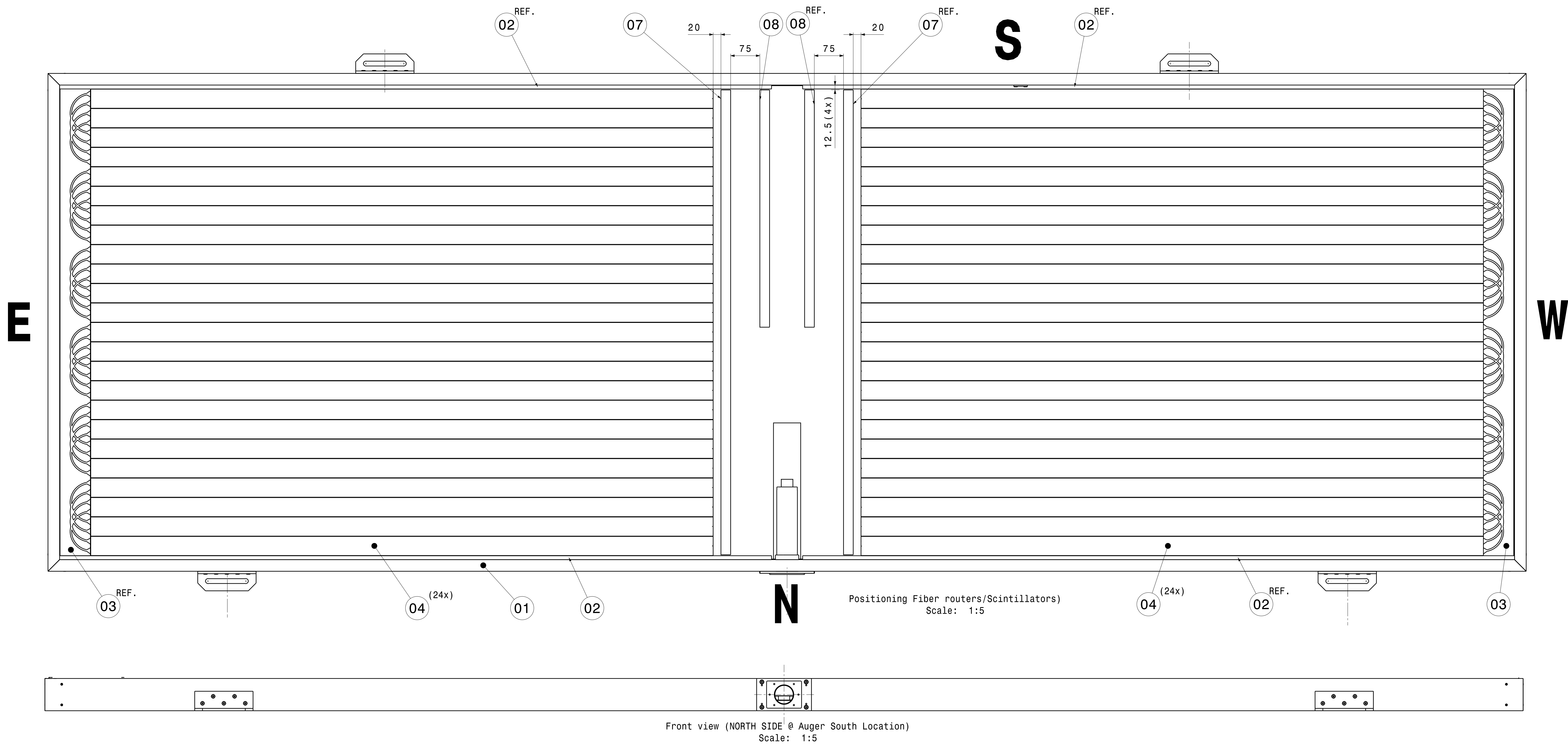


Front view  
Scale: 1:10




General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 +0.1	Material: EN AW-5005	
Project: Astroparticle Physics Auger		Units: mm	Date: 10/08/2017	Revision: B
Top folder:SSD Production		Size: A3	Engineer: A. Korporaal	
Name: Corrugated Roof Panel B (76x18x305_L3800)			Checked: A. Korporaal	
			Item number: AB0306	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00713	
This drawing may not be used for commercial purposes without written authorisation.				







Note:  
For Bill of Material (Partlist) see AB0250 Sheet 5

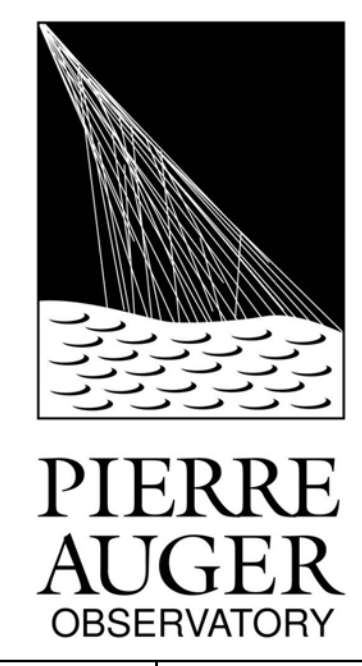


Karlsruhe Institute of Technology



Sezione di Lecce

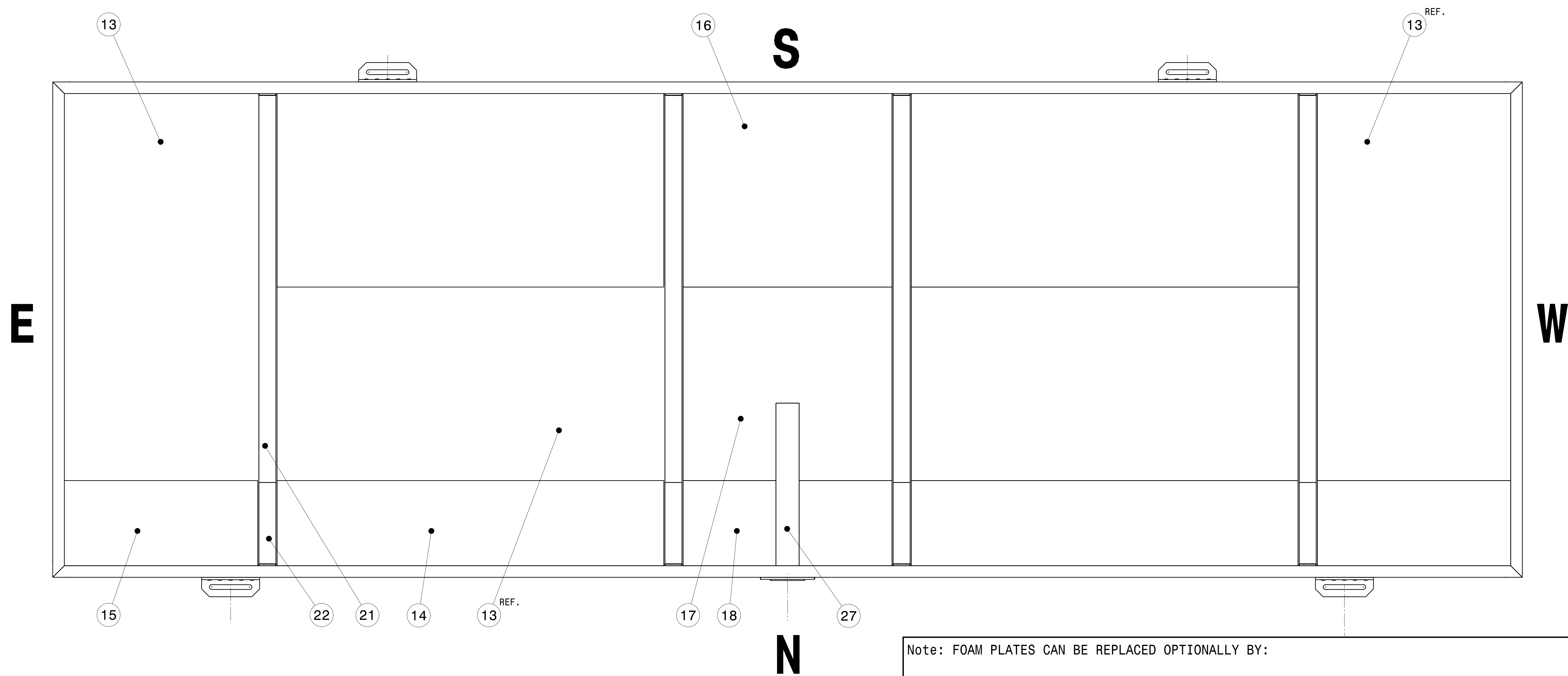
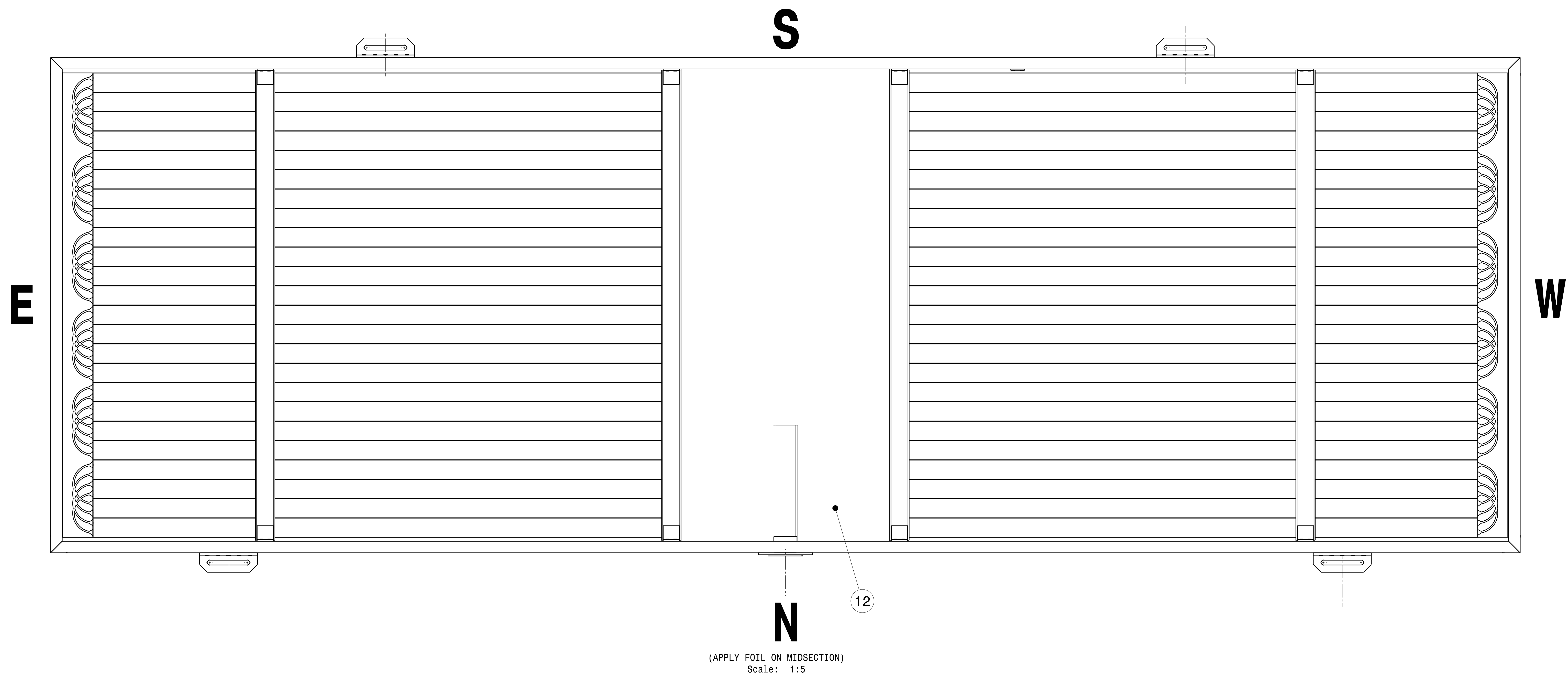





General tolerances unless otherwise stated according to ISO 2768-MS		Date: 02/11/2017		Revision: J	
Project: Astroparticle Physics Auger		Drawn: AG	Engineer: A. Körperaal		
Top folder: 880 Production		Checked: A. Körperaal			
Name: SSD Type D-83mm Ass'y (Production)		Item number: AB0250	Released		
National Institute for Subatomic Physics		Nikhef number: 45500-MT-00639			
Scale: 1:1 (1:1000 for details)		This drawing may not be used for commercial purposes without written authorization.			

SHEET 1 OF 5







Note:  
For Bill of Material (Partlist) see AB0250 Sheet 5

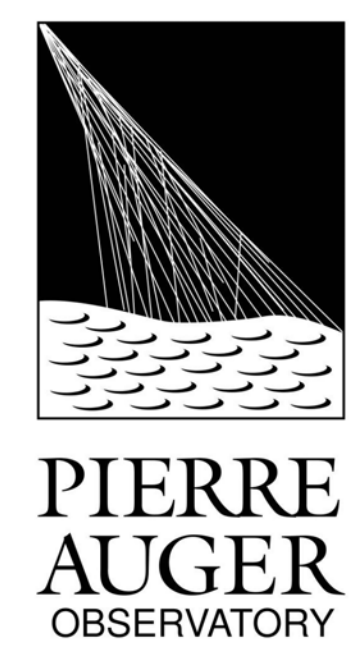


Karlsruhe Institute of Technology



Sezione di Lecce





General tolerances unless otherwise stated according to ISO 2768-MS		Date: 02/11/2017		Revision: J	
Project: Astroparticle Physics Auger		Drawn: AG	Engineer: A. Körberaal		
Top folder: 880 Production		Checked: A. Körberaal			
Name: SSD Type D-83mm Ass'y (Production)		Item number: AB0250	Status: Released		
National Institute for Subatomic Physics		Nikhef number: 45500-MT-00639			
Scale: 1:5, 1:10, 1:20, 1:50, 1:100, 1:200, 1:500, 1:1000		This drawing may not be used for commercial purposes without written authorization.			

SHEET 2 OF 5

ISOLATION ON SCINTILLATORS(SEVERAL PARTS NOT SHOWN !)  
Scale: 1:5

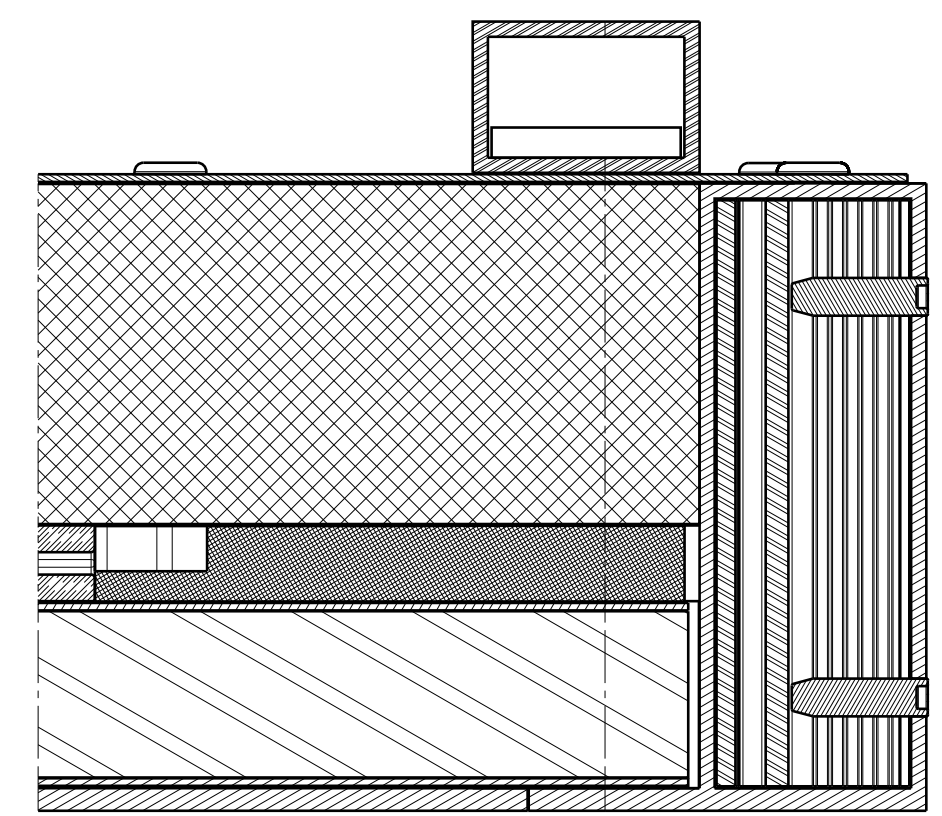
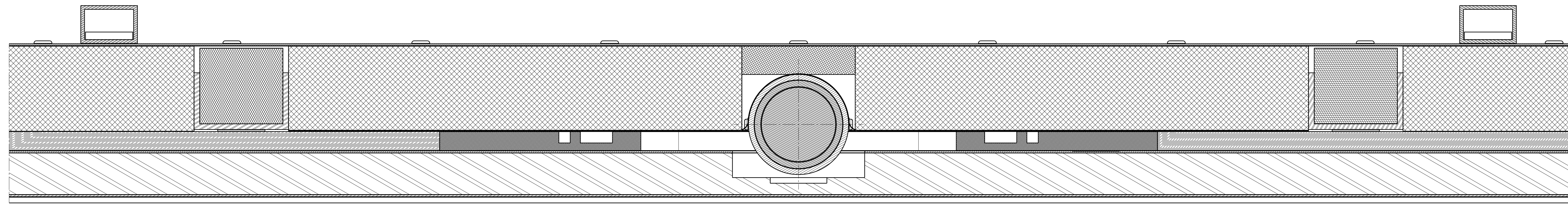
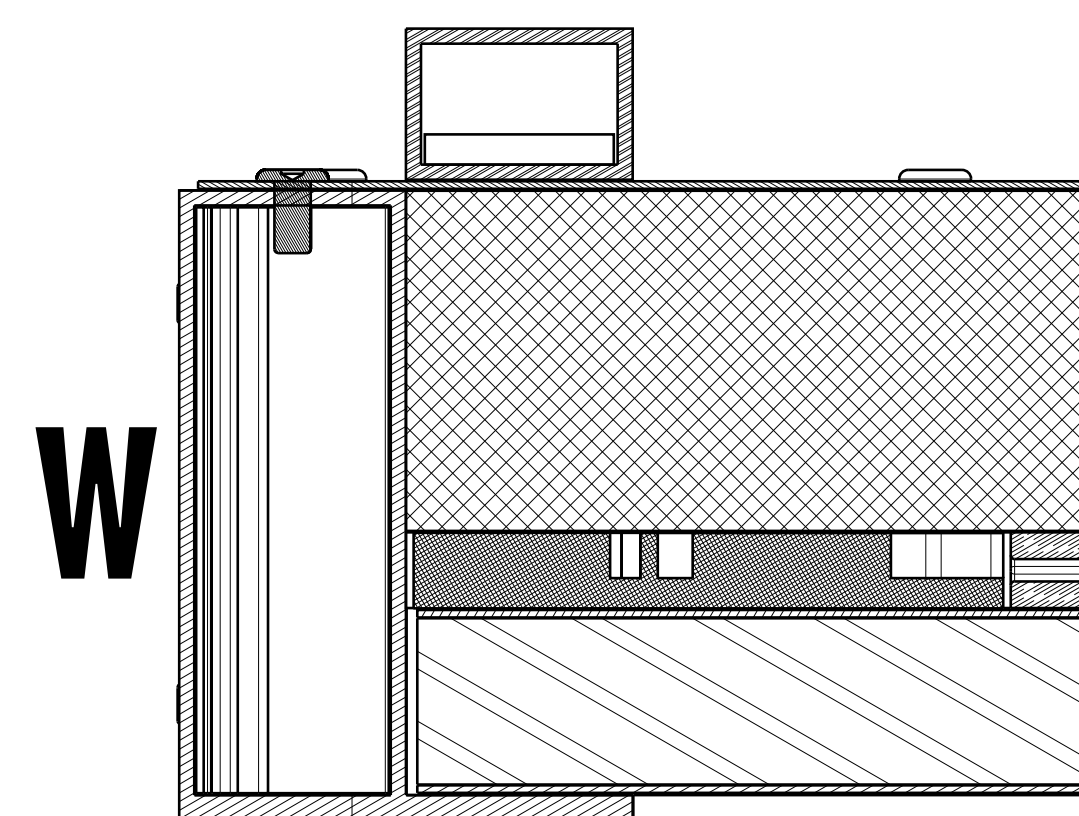
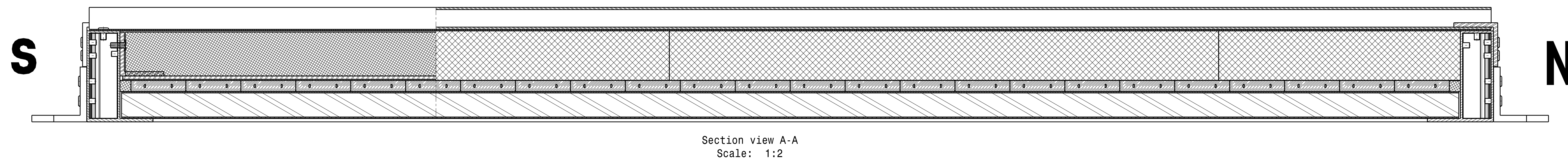
Note: FOAM PLATES CAN BE REPLACED OPTIONALLY BY:

PART 13(2x) and 15(2x)	-> 2x EPS Plate 1220x 500x45 (See dwg.: AB0339)
PART 13(4x) and 14(2x)	-> 2x EPS Plate 1220x1000x45 (See dwg.: AB0338)
PART 16(1x), PART 17(1x) and PART 18(2x)	-> 1x EPS Plate 1220x 540x45 (See dwg.: AB0340)



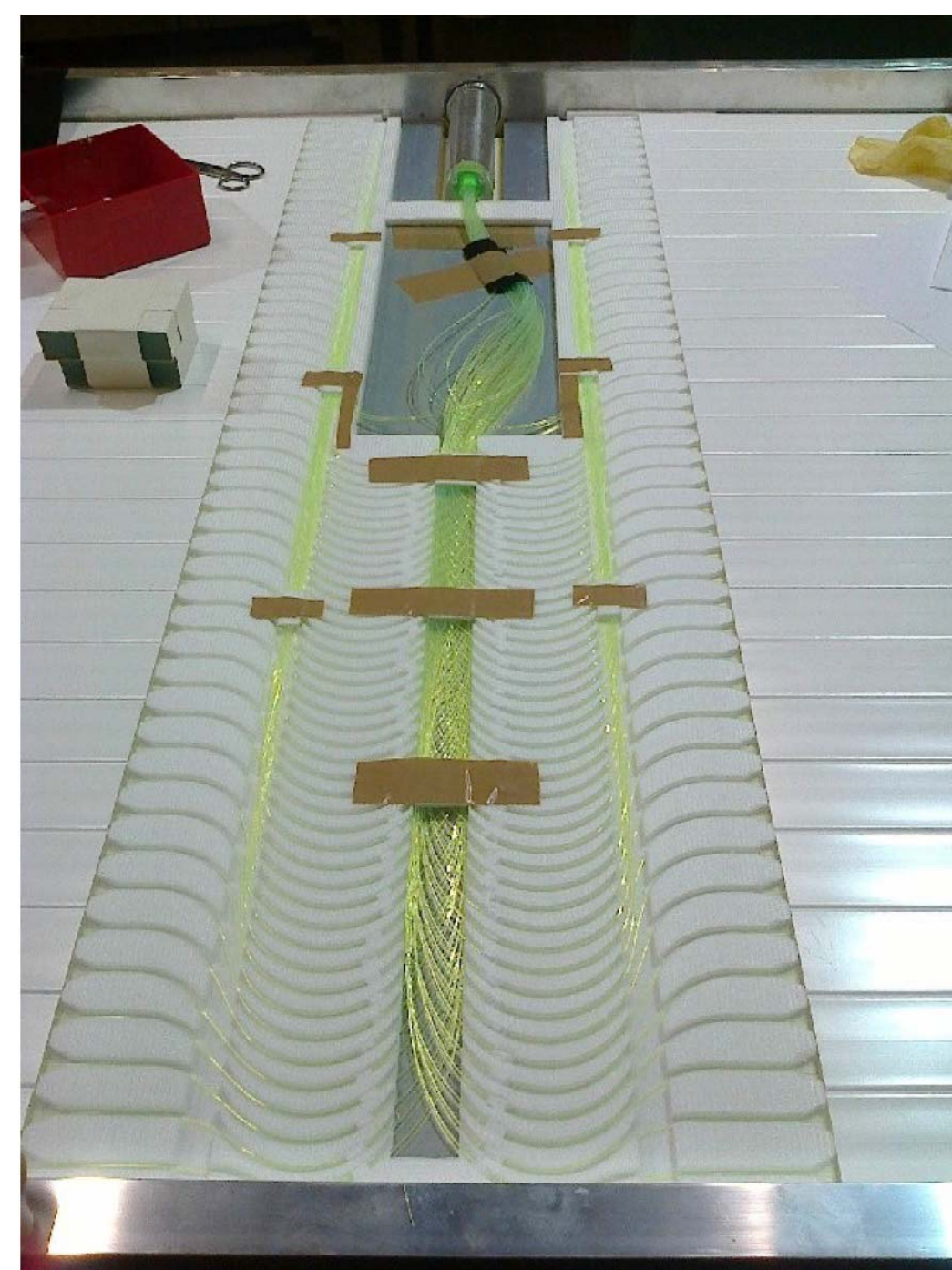
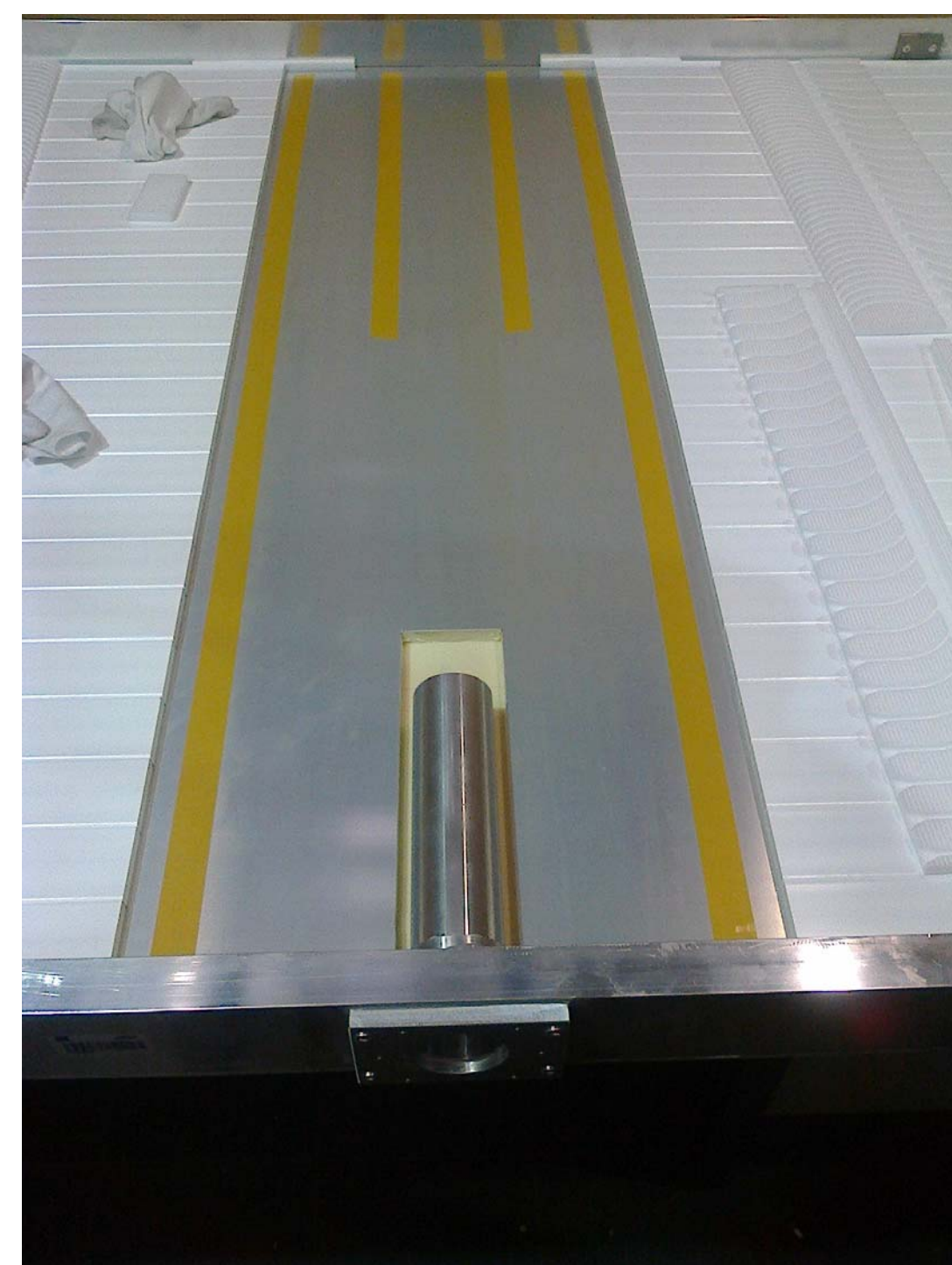
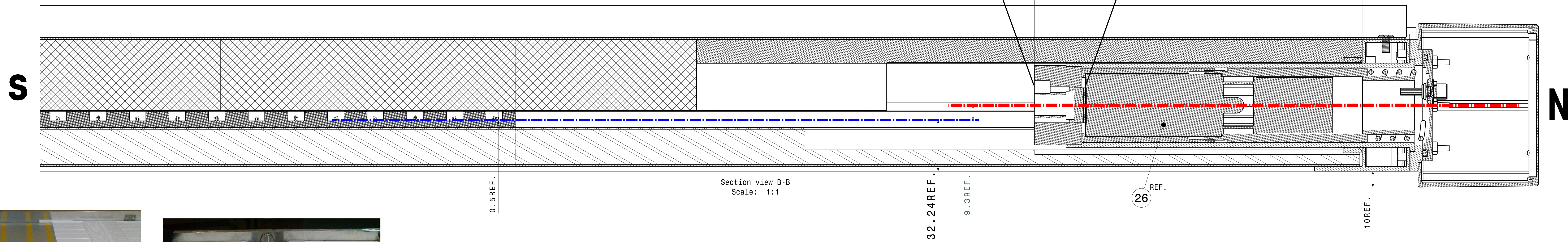






Apply Fiber vs. Cookie Adjustment Tool (IK14849 Justierhilfe)  
Smarteam Item ID: AB0328  
Fiber ends (96x) must be flattened and mounted in nearly VERTICAL position!  
READ INSTRUCTIONS BEFORE ! See DOC.: .....

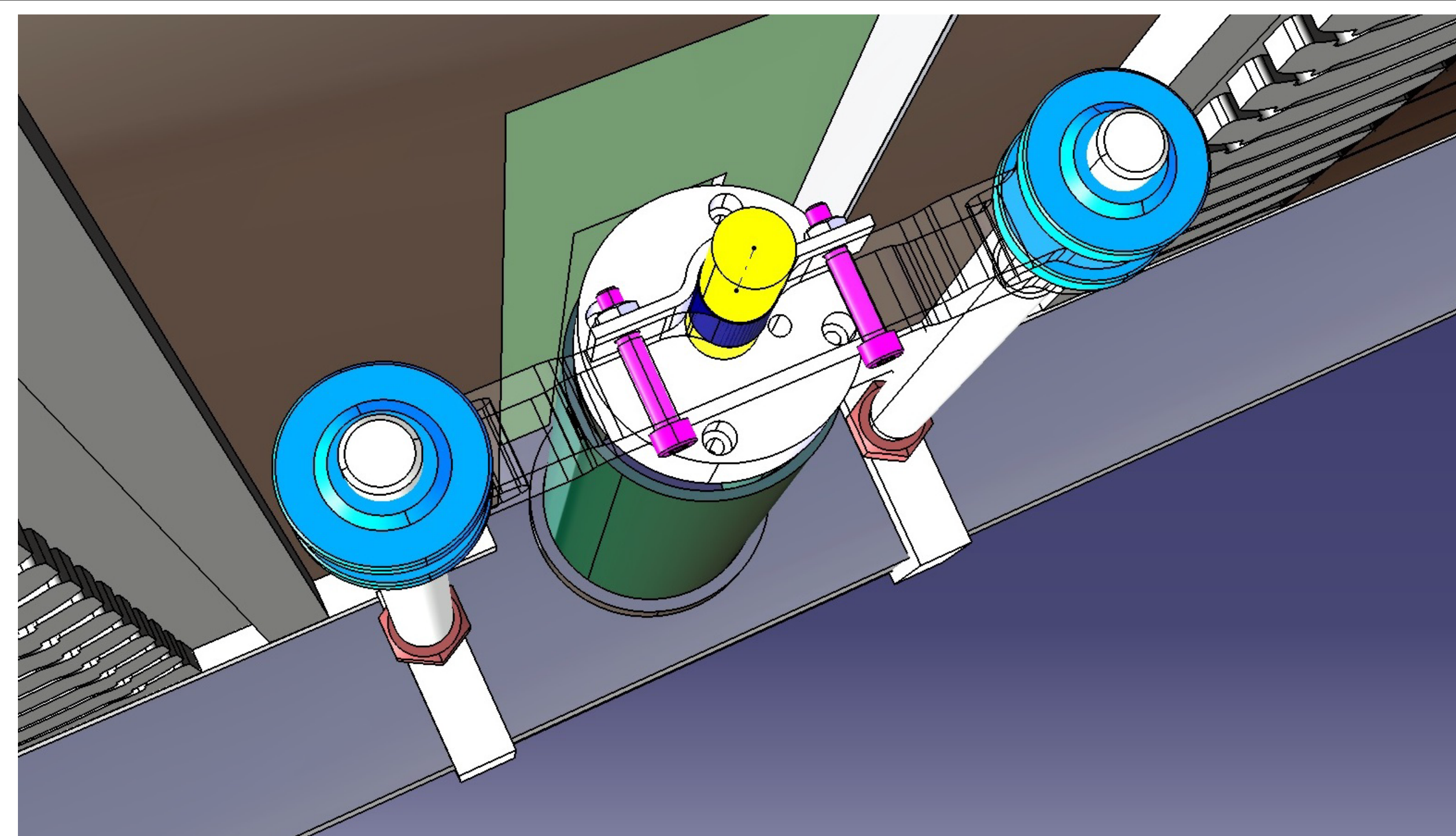
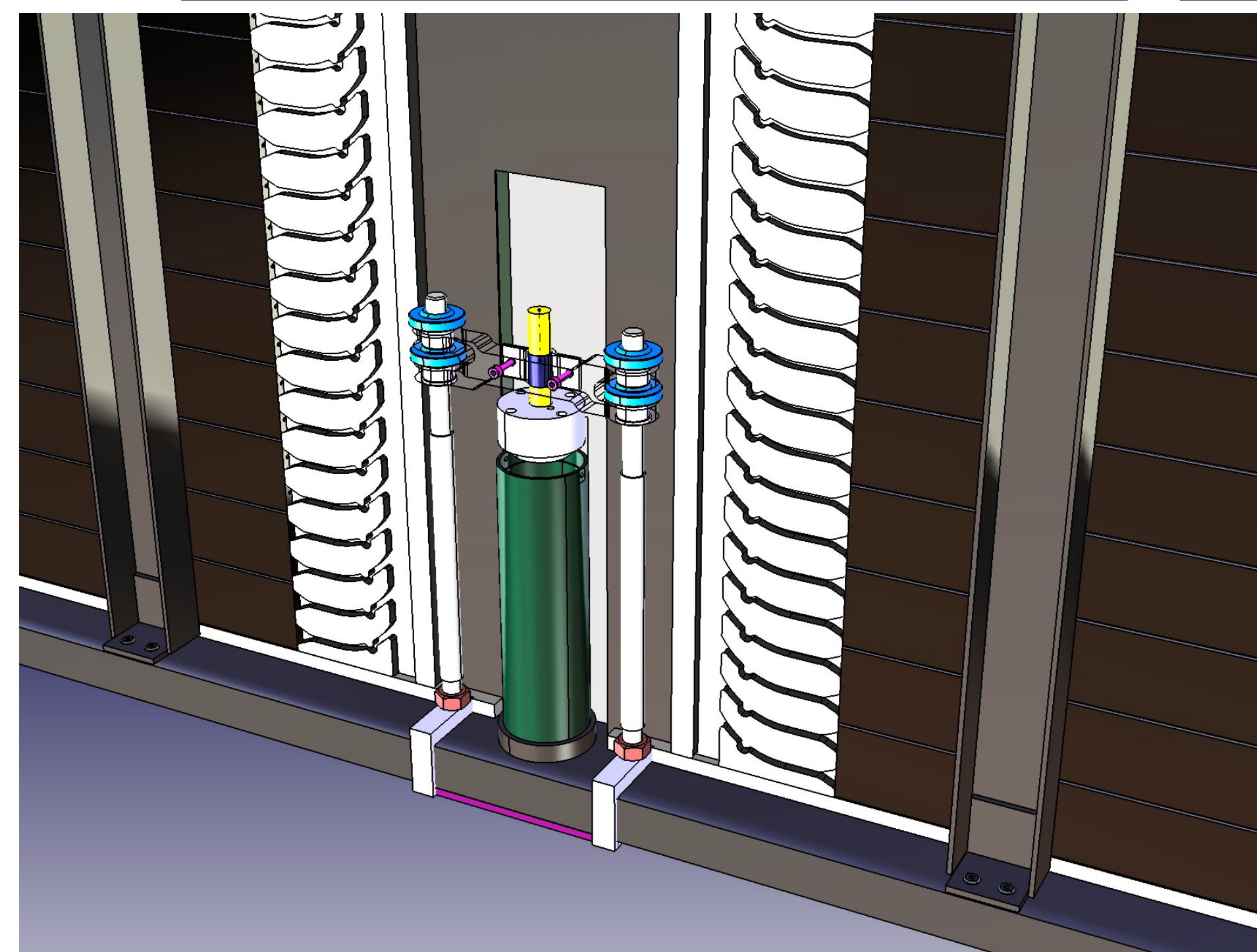
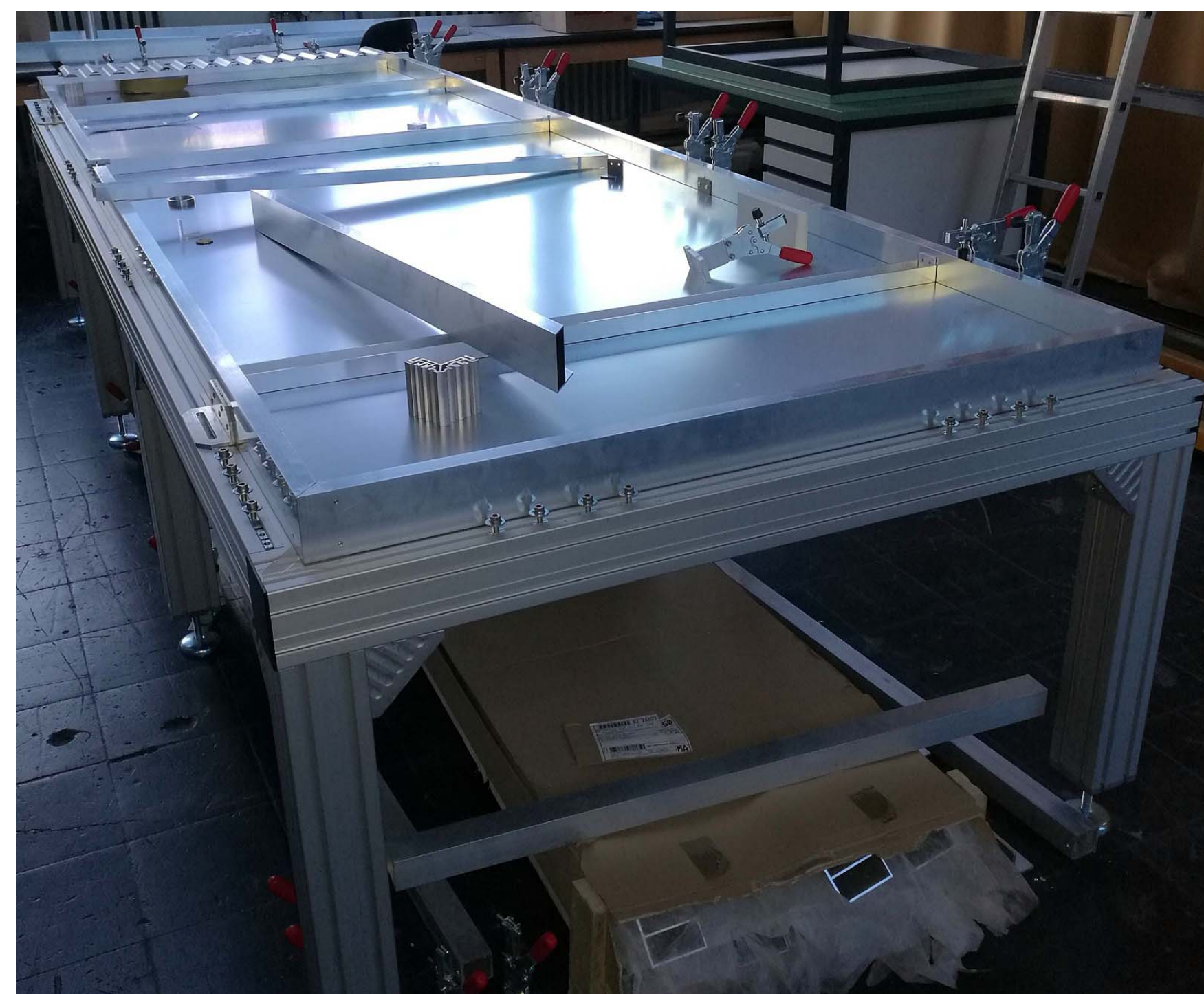
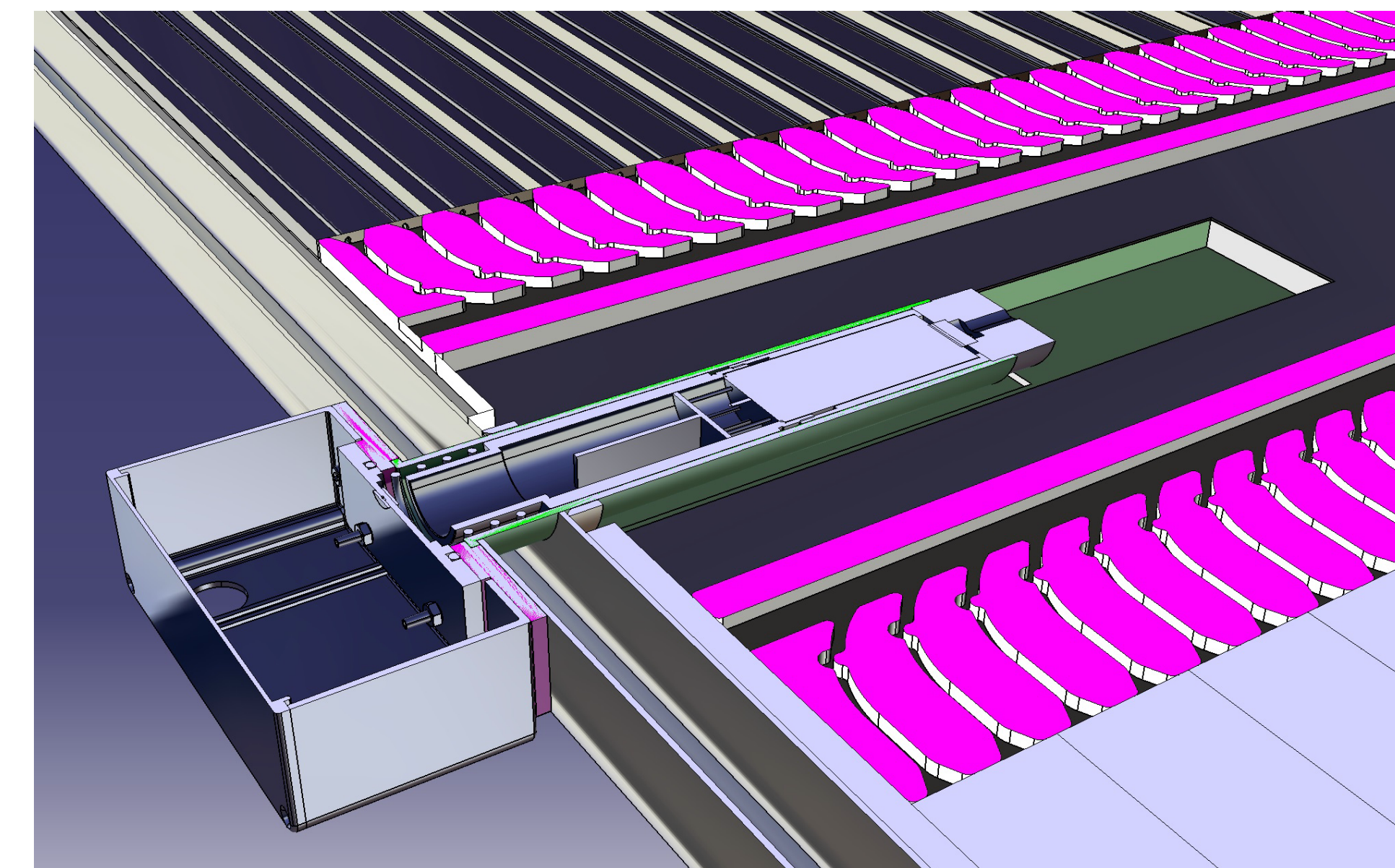
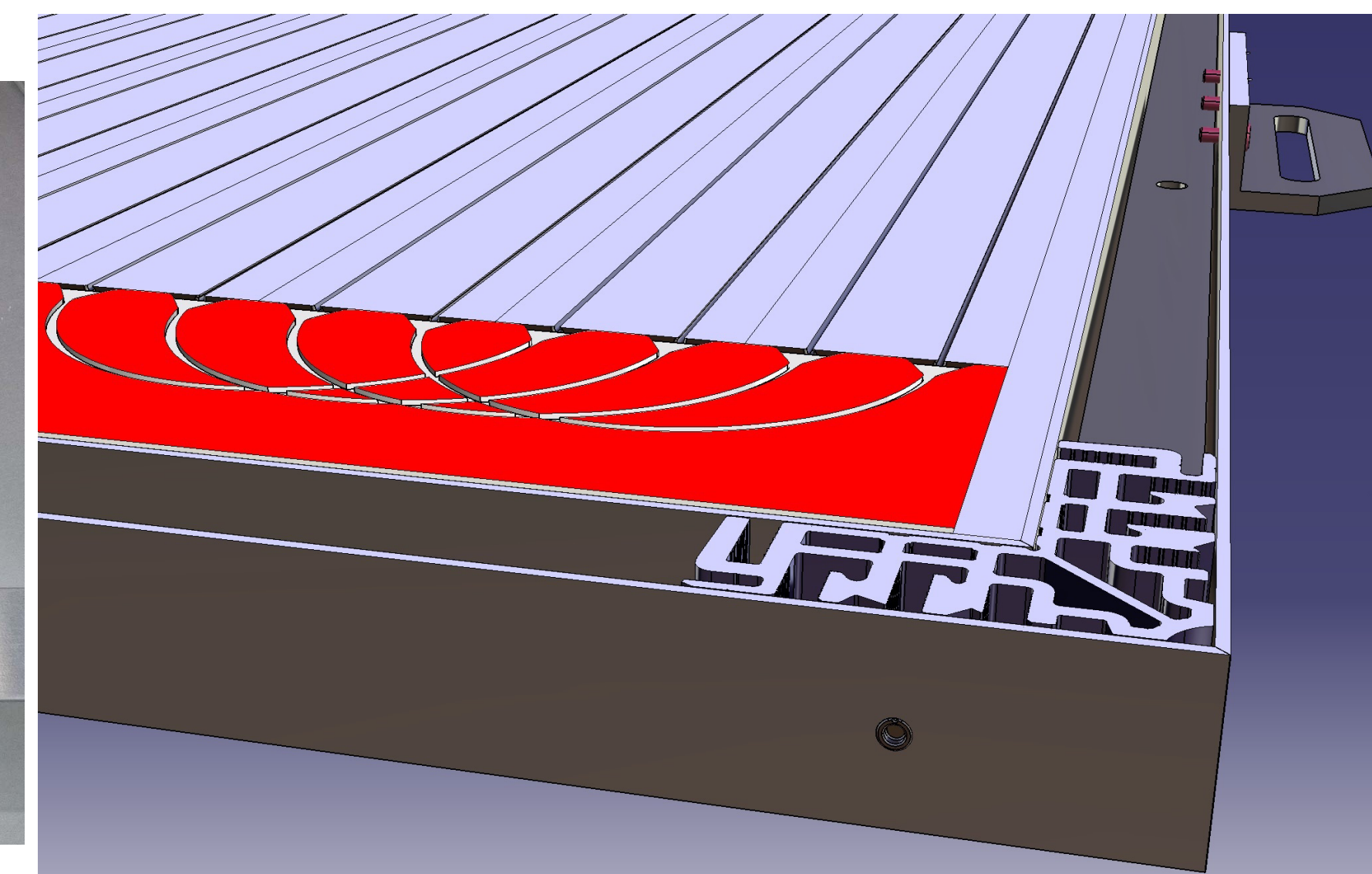
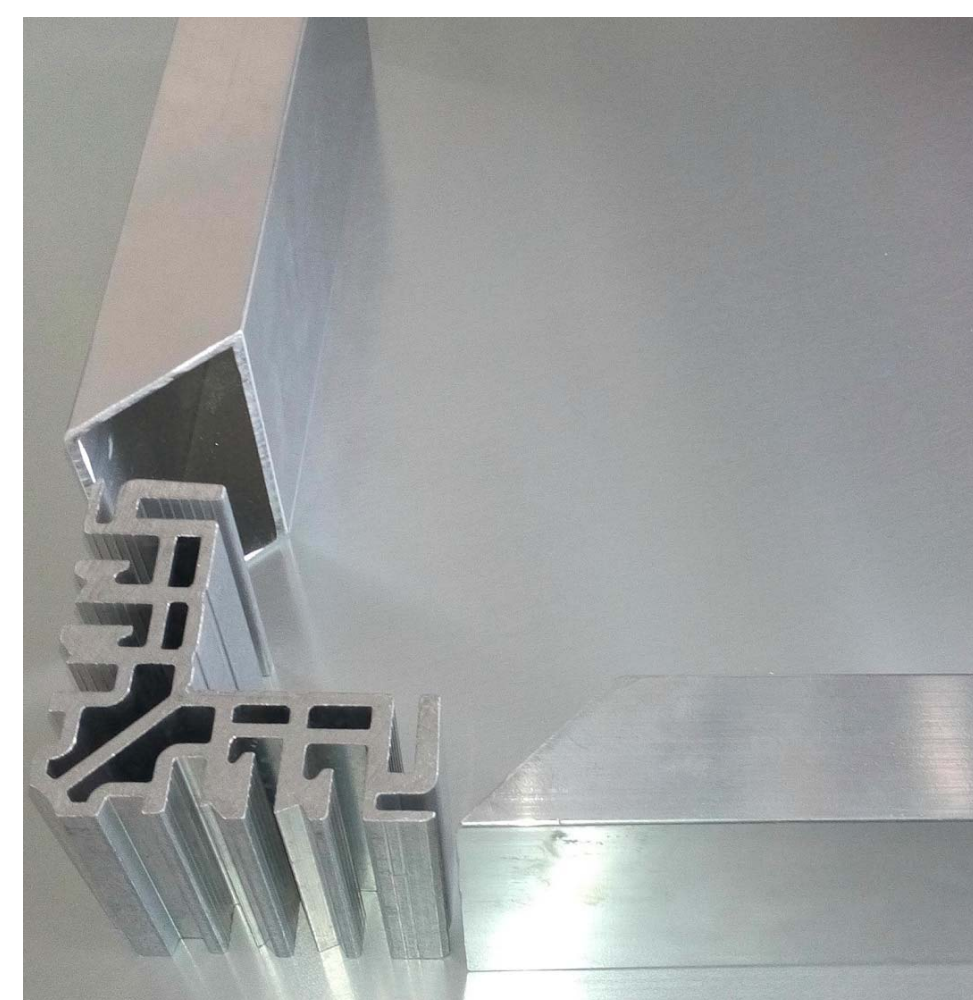
DO NOT FORGET PLACING SILICON PAD BEFORE  
INSTALLING PMT UNIT (SEE DWG.: AB0315) !!



WELDED OPTION



BRACKET OPTION



Note:  
For Bill of Material (Partlist) see AB0250 Sheet 5

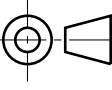


<small>General tolerances unless otherwise stated according to ISO 2768-MK-0 Geometrical tolerances unless otherwise stated according to ISO 1101-010-0 Surface finish unless otherwise stated according to ISO 1305-1305-0</small>			
Project: Astroparticle Physics Auger Top folder: SSD Production Name: SSD Type D-83mm Ass'y (Production) Item number: AB0250 Released: 45500-MT-00639			
Date: 02/11/2017 Drawn: A. Körperaal Checked: A. Körperaal Released: A. Körperaal		Nikhef number: 45500-MT-00639 This drawing may not be used for commercial purposes without written authorization.	

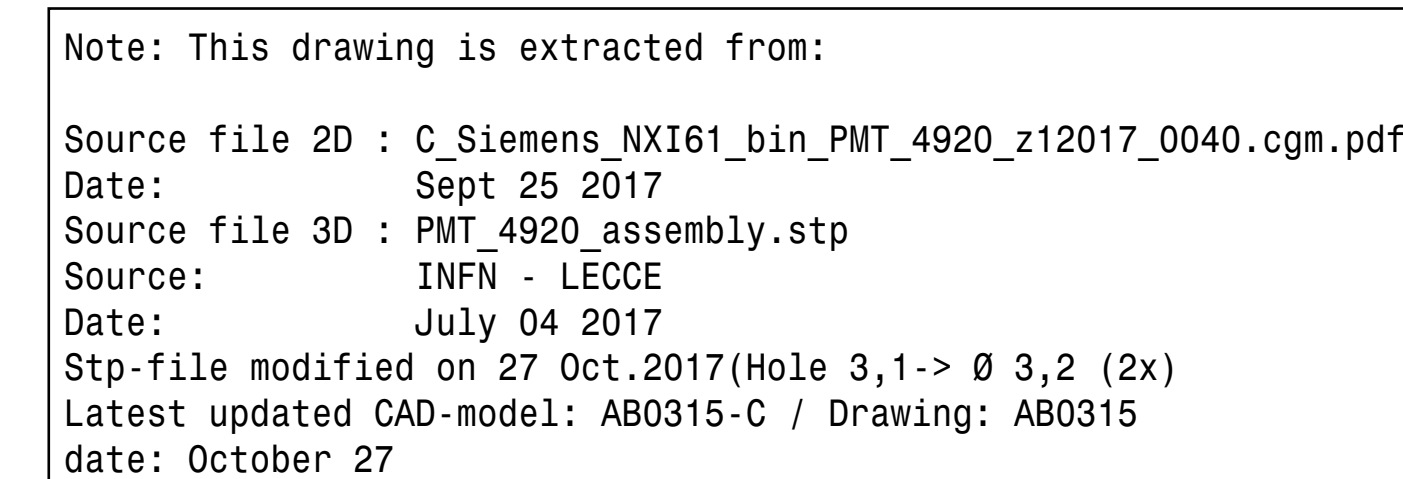
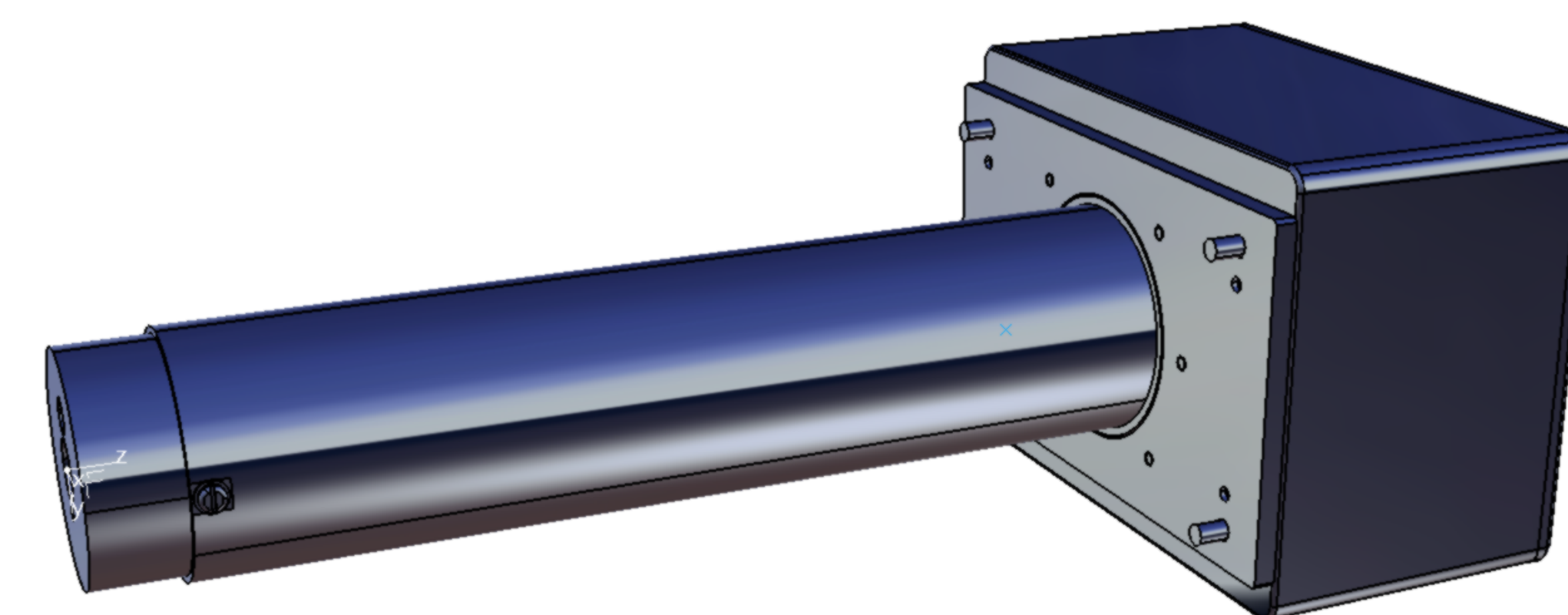
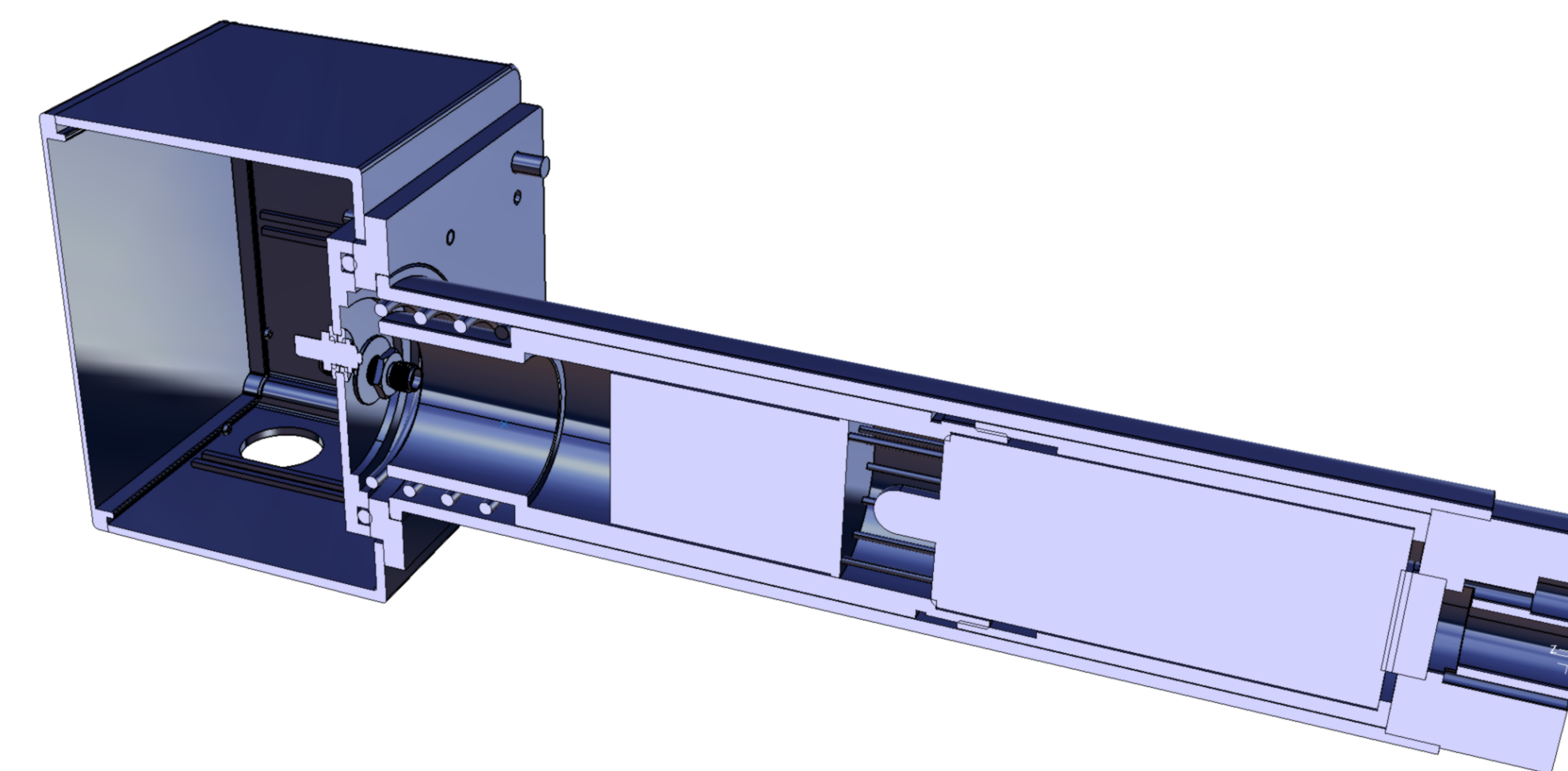
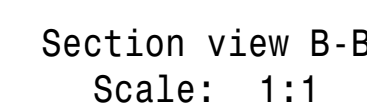
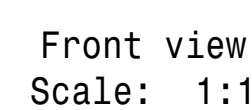
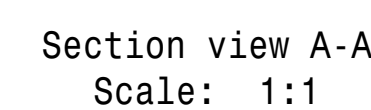


27	1	EPS Plate 420x60x15mm (Center Part TOP)	AB0341	A
26	1	PMT4920_assembly_LECCE_25Sept2017	AB0315	D
25	102	Pop Rivet 4.8x9.5 (ISO 15973-Al_St.Steel)	AB0282	A
24	1	Top Cover Plate (SSD Type D-83MM)	AB0297	A
23	1	2K-Silicone Sealant (OTTOCOLL S 610-BLACK)	AB0284	A
22	4	EPS Plate 210x44x40mm	AB0299	A
21	4	EPS Plate1000x44x40mm	AB0298	A
20	40	Pop Rivet 4.8x12.5 (ISO 15973-Al_St.Steel)	AB0283	A
19	6	Roof Support Ass'y (SSD Production)	AB0309	B
18	2	EPS Plate 240x220x45mm	AB0296	A
17	1	EPS Plate 540x500x45mm (Fiber Cookie)	AB0295	B
16	1	EPS Plate 540x500x45mm	AB0294	A
15	2	EPS_Plate_220x500x45mm	AB0292	A
14	2	EPS_Plate_1000x220x45mm	AB0293	A
13	6	EPS_Plate_1000x500x45mm	AB0291	A
12	1	Shielding Foil ( Central Part)	AB0264	A
11	1	Fiber 1mm (Saint Gobain BCF 91A) L= 96x Approx. 5,90m)	AB0300	D
10	1	Fiber Router B1 ( Central Part - RIGHT)	AB0333	A
9	1	Fiber Router B ( Central Part - LEFT)	AB0332	B
8	2	Double side tape L2 (TESA 4970-25mm)	AB0311	A
7	2	Double side tape L1 (TESA 4970-25mm)	AB0310	A
6	8	Bracket A (Scintillator Clamp)	AB0255	A
5	4	Crossbeam A Ass'y (Scintillator Clamp)	AB0257	A
4	48	Scintillator Type 8 (FNAL- 50x10-2holes_Bean Shape)	AA9739	B
3	2	Fiber Router A ( Detector Ends)	AB0331	A
2	4	Filling Strip A	AB0240	A
1	1	SSD Type D-83mm Housing Ass'y (Production)	AB0248	F
Pos Nr	Qty.	Definition	Item No	Rev

DS-SMARTEAM® - Editor V5-6R2015 Service Pack 3 Product/Part Revision  
(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !

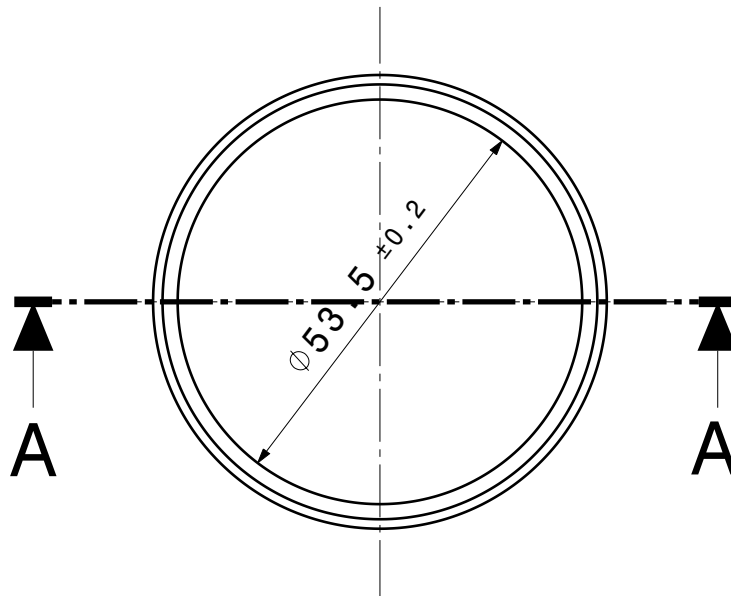
General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			
Project: Astroparticle Physics Auger		Units: mm	Date: 02/11/2017
Top folder:SSD Production		Size: A4	Revision: J
Name: <b>SSD Type D-83mm Ass'y (Production)</b>		Engineer: A. Korporaal	
		Checked: A. Korporaal	
		Item number: <b>AB0250</b>	Status: <b>Released</b>
		Nikhef number: <b>45500-MT-00639</b>	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			
This drawing may not be used for commercial purposes without written authorisation.			<b>SHEET 5 OF 5</b>



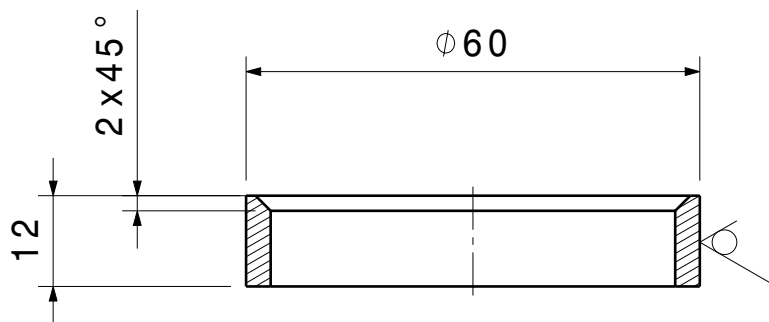


Serial: telephones taken after the stated according to 120-378 or 4 Serial: telephones taken after the stated according to 120-378 or 4 Serial: telephones taken after the stated according to 120-378 or 4				Material: <b>Different Materials</b>	
Project: <b>ASTRO Particle Physics Auger</b>		Date: <b>02/11/2017</b>		Revision: <b>g</b>	
Top folder: <b>S&amp;P Production</b>		Design: <b>A. Korporaal</b>		Checked: <b>A. Korporaal</b>	
Name: <b>PMT4920_assembly- LECC 25sept2017</b>				Status: <b>Released</b>	
National Institute for Subatomic Physics		Ntknr number: <b>AB0315</b>		45500-MT-00729	
Science Park 105, 3720 ZG, Utrecht, The Netherlands		This document was made for commercial purposes and/or without authorization			

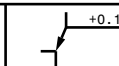
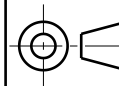




Front view  
Scale: 1:1



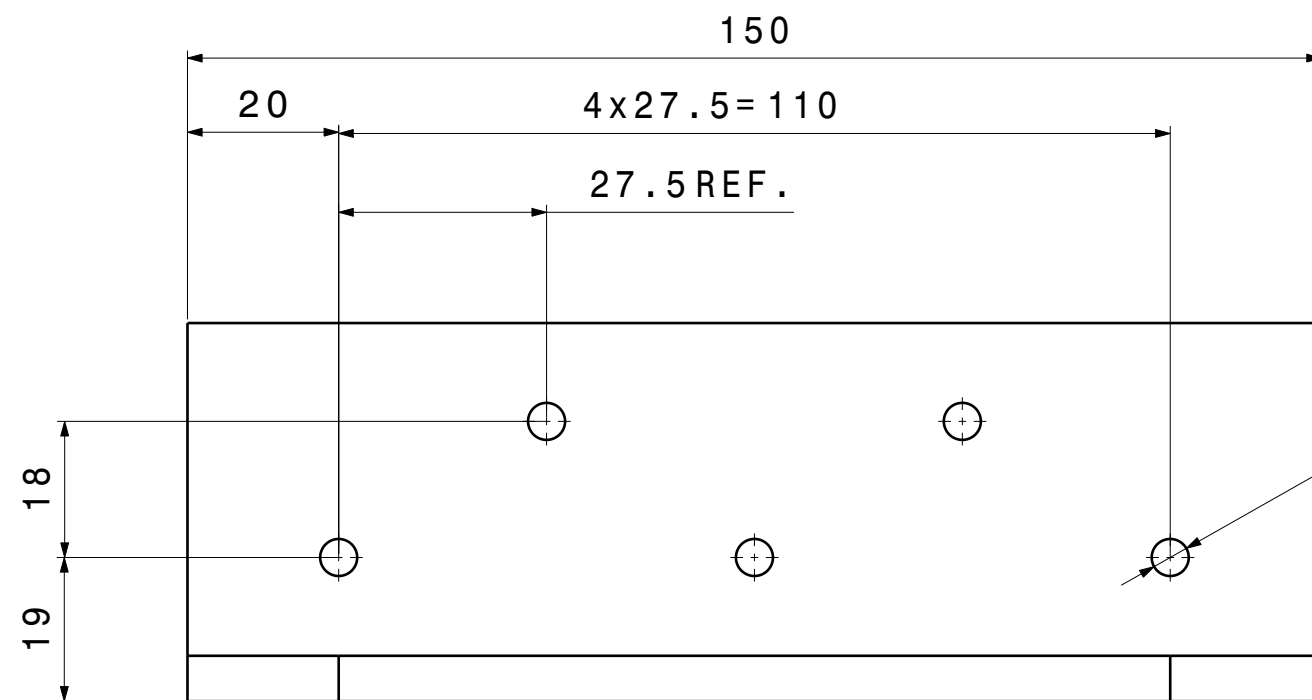
Section view A-A  
Scale: 1:1

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material: Aluminum EN AW-6060T6 or 2011)	
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 23/10/2017		Revision: A
		Size: A4	Engineer: A. Korporeaal		
Name: Sealing Ring (Dichtring)			Checked: A. Korporeaal		
			Item number: AB0337	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00771		
This drawing may not be used for commercial purposes without written authorisation.					

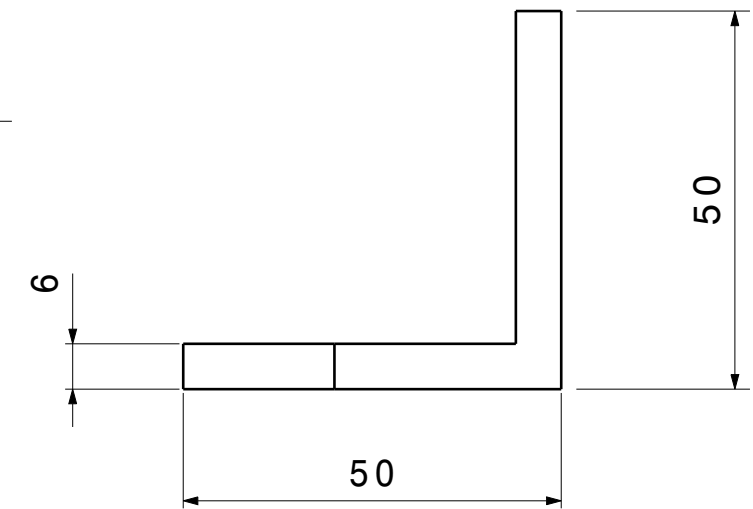




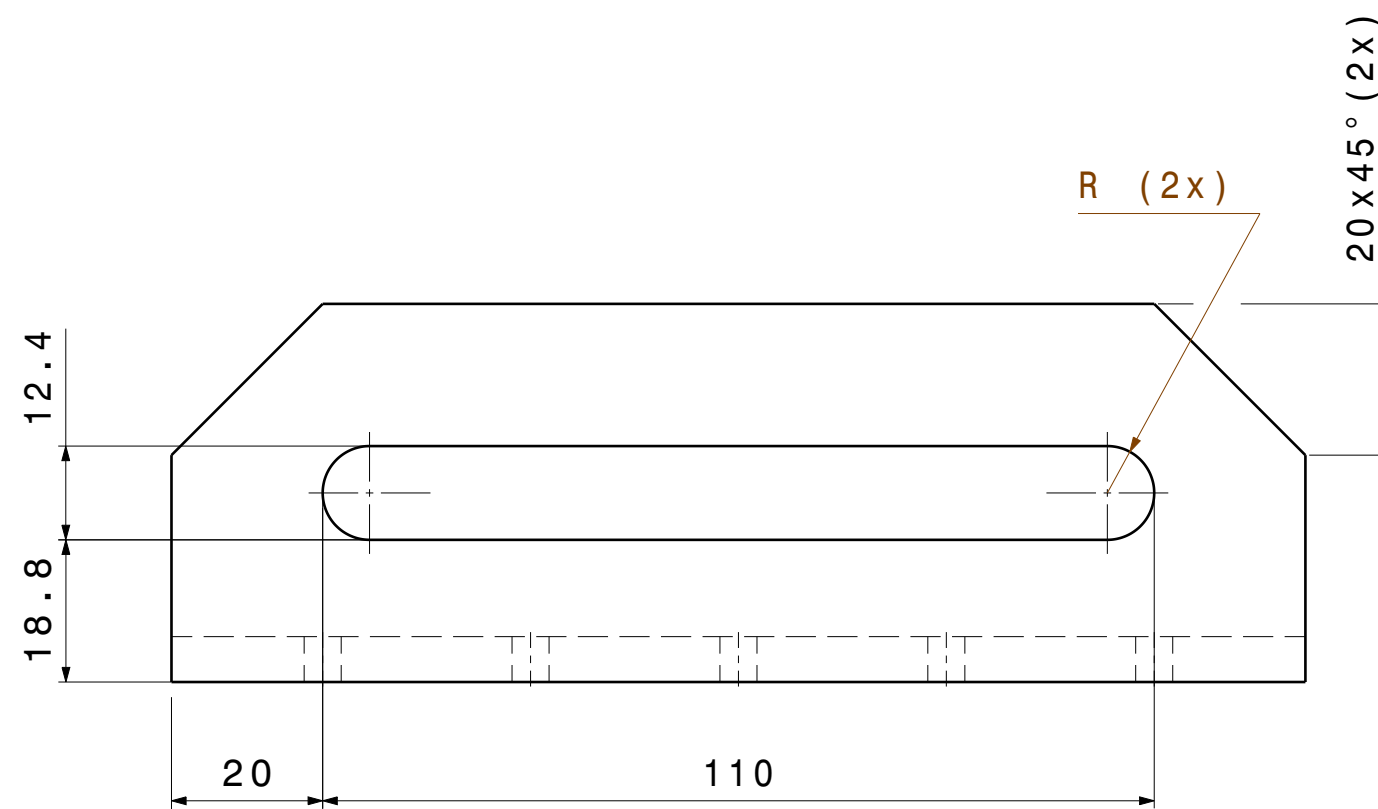




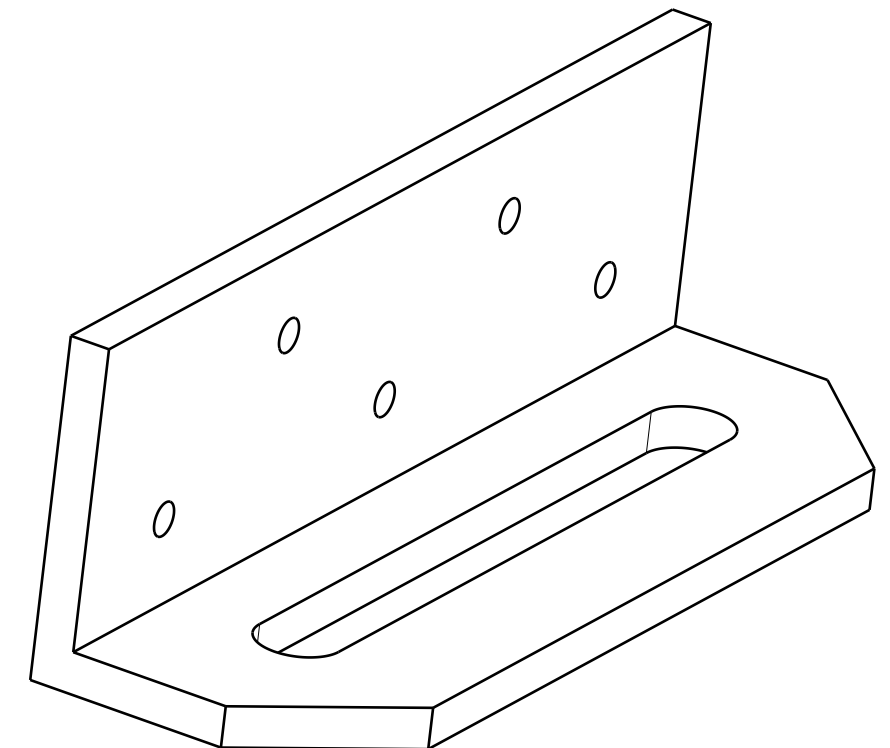
Front view  
Scale: 1:1




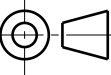
Right view  
Scale: 1:1



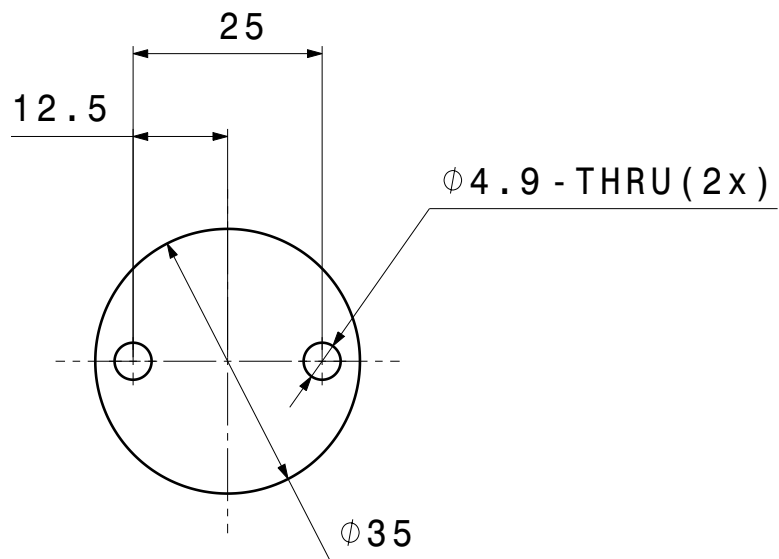
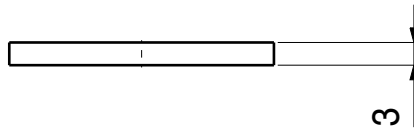
Bottom view  
Scale: 1:1



Mass: 0,2kg.

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material:  Alum. EN AW-606X	
Project: Astroparticle Physics Auger		Units: mm	Date: 28/07/2017	Revision: B	
Top folder:SSD Production		Size: A3	Engineer: A. Korporaal		
Name: SSD_vs_Support Interface (Production)				Checked: A. Korporaal	
		Item number: AB0270		Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00651		
This drawing may not be used for commercial purposes without written authorisation.					



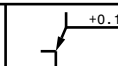
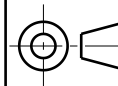


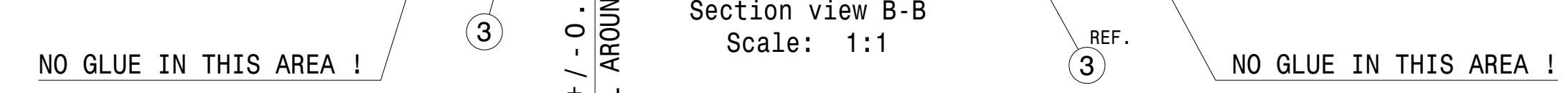
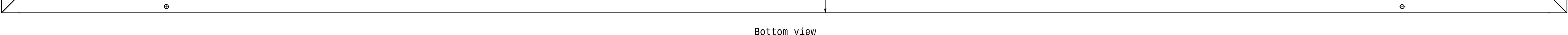
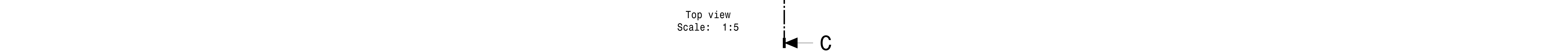
#### NOTES:

Supplier: GKN Sinter Metals filters GmbH,  
DahlienStrasse 43, 42477 Radevormwald

#### IMPORTANT !

Part will be delivered WITHOUT 2 holes!  
Drill 2 holes as drawn!

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material: SIKA-B 12 (GKN Sinter Metals Filters GmbH)	
Project: Astroparticle Physics Auger		Units: mm	Date: 21/06/2017	Revision: A	
Top folder:SSD Production		Size: A4	Engineer: A. Korporeaal		
Name: Sintered Disc (GKN Sintermetals Filters GmbH SIKA-B12-D35-S3)			Checked: A. Korporeaal		
			Item number: AB0281	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00718		
This drawing may not be used for commercial purposes without written authorisation.					



Mass:	49,0kg.
-------	---------

Pos Nr	Qty.	Definition	Item No	Rev

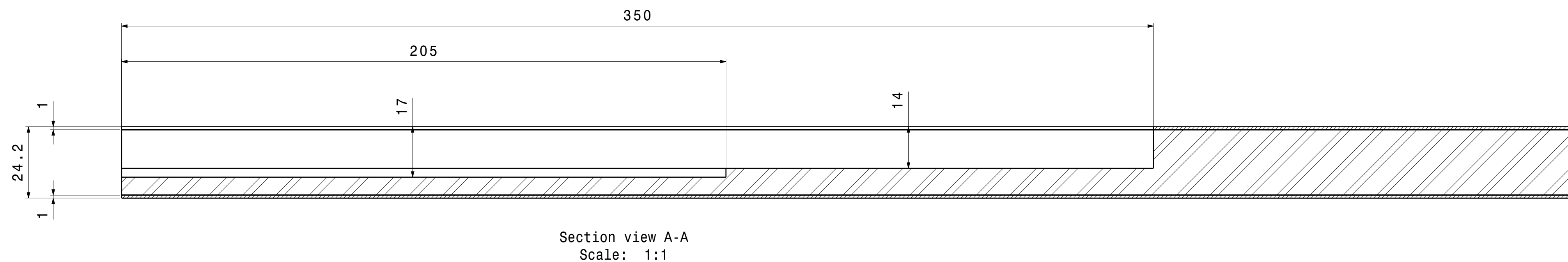
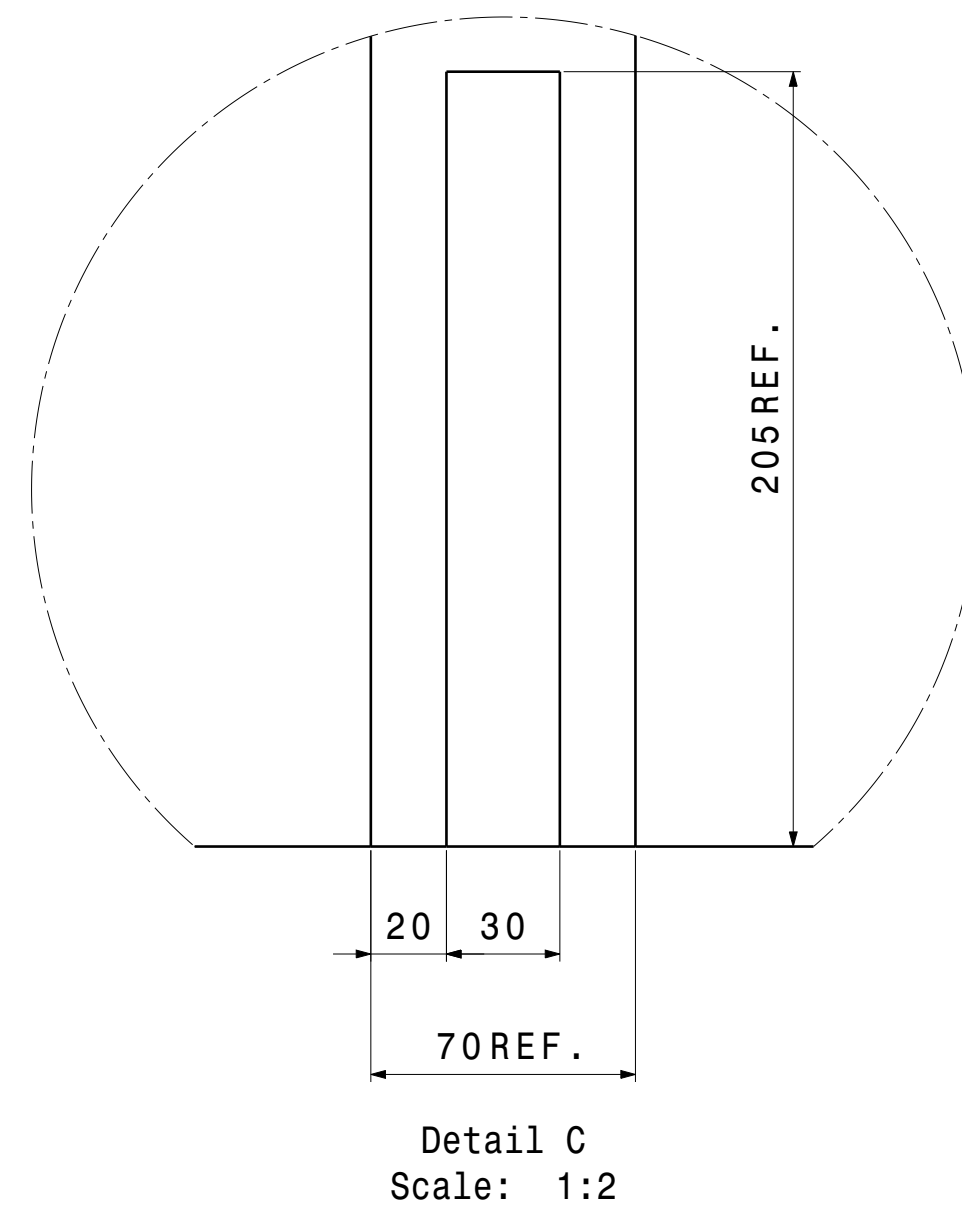
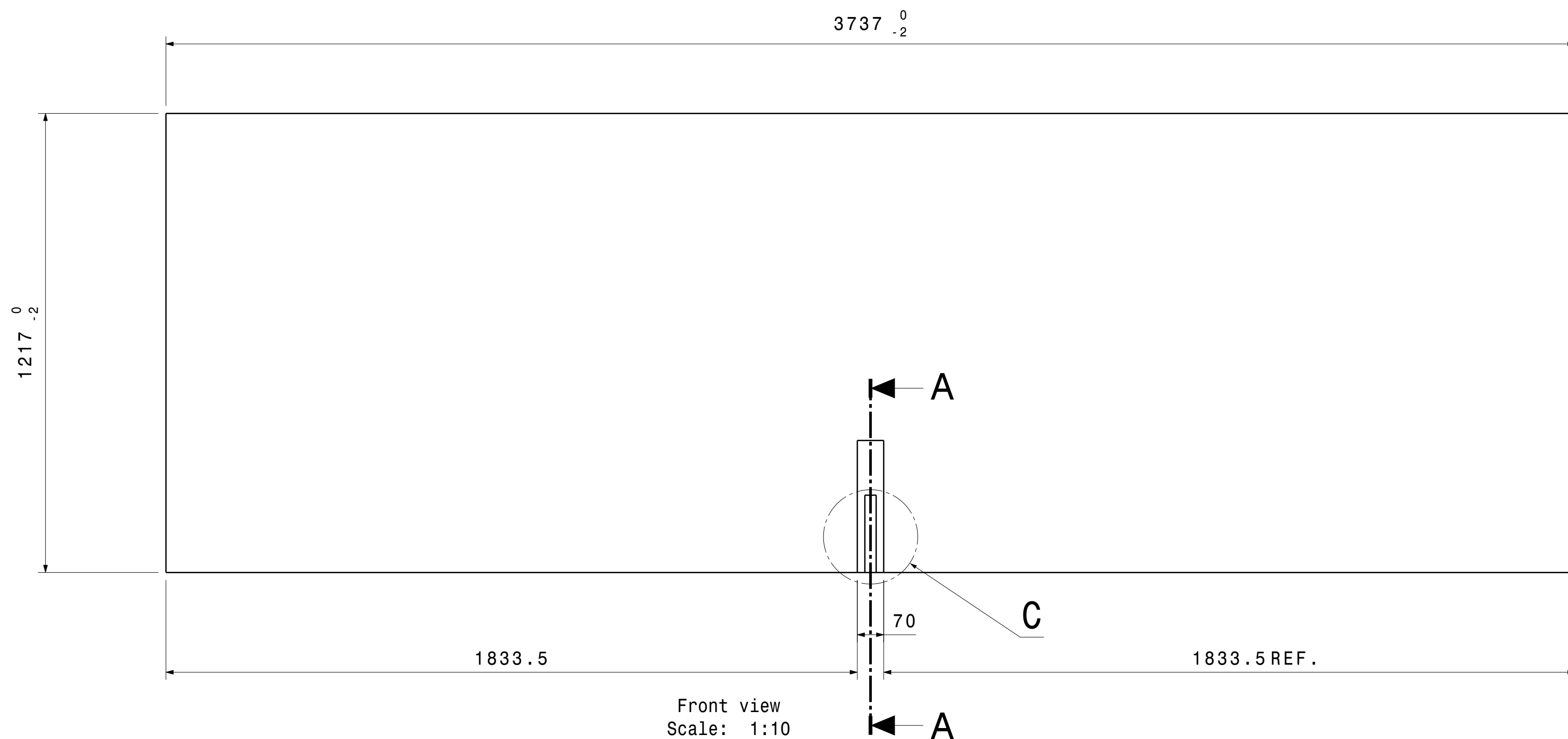
(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !



Request unless otherwise stated according to : ISO-1502			
Project: Astroparticle Physics Auger		Units: mm	Date: 24/10/2017 Revision: G
Top folder: SSD Production		Size: AD	Eng/Dept: A. Korporaal

This drawing may not be used for commercial purposes without written authorization.

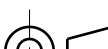




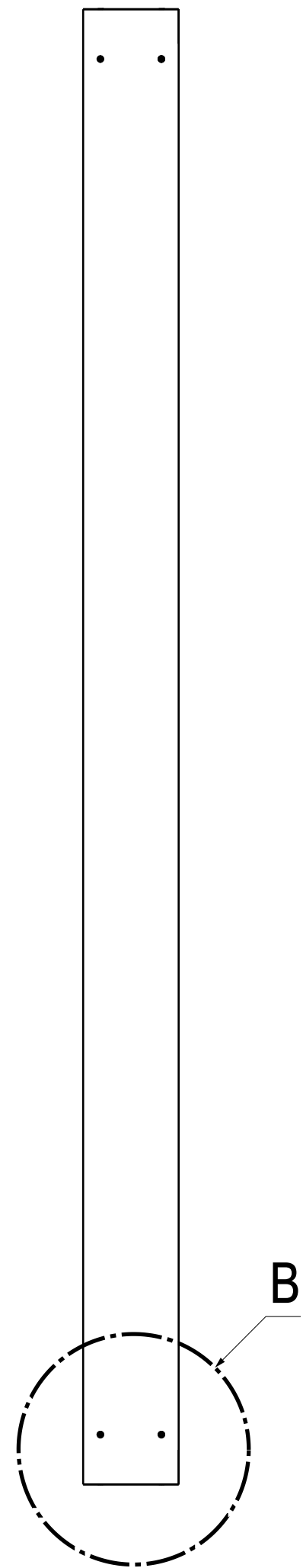
With 2x1.0 mm Facing Mass: 30,5kg.

Supplier Foam Panel (cut out(s) excluded !):

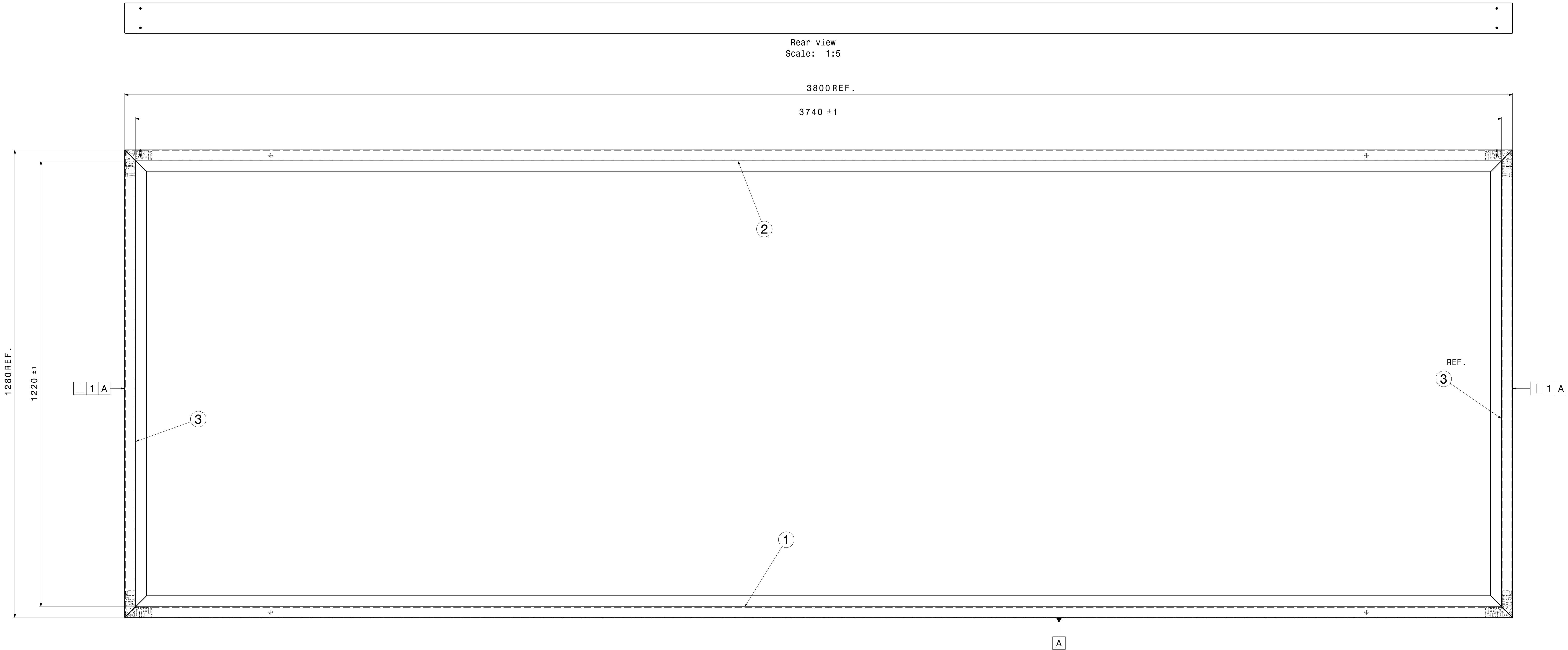
WEISS CHEMIE + Technik GmbH & Co.KG, Haiger (Germany)  
Product: COSMO Tech Classic 30.0005 ALU-XPS/1,0  
Material Facings: Alum. EN-AW 5005 (Al Mg 1)  
Material Core: Polystyrol-Hardfoam (XPS 32kg/m-2)

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to :ISO-8015-E Roughness unless otherwise stated according to :ISO-1302						
Project: Astroparticle Physics Auger				Units: mm	Date: 24/10/2017	Revision: D
Top folder: SSD Production				Size: A2	Engineer: A. Korporaal	
Name: Sandwich Panel (BOTTOM) (SSD Type D-83MM)					Checked: A. Korporaal	
					Item number: AB0275	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam				Nikhef number: 45500-MT-00657		
This drawing may not be used for commercial purposes without written authorisation.						

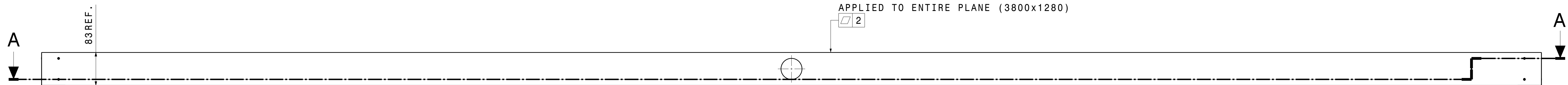




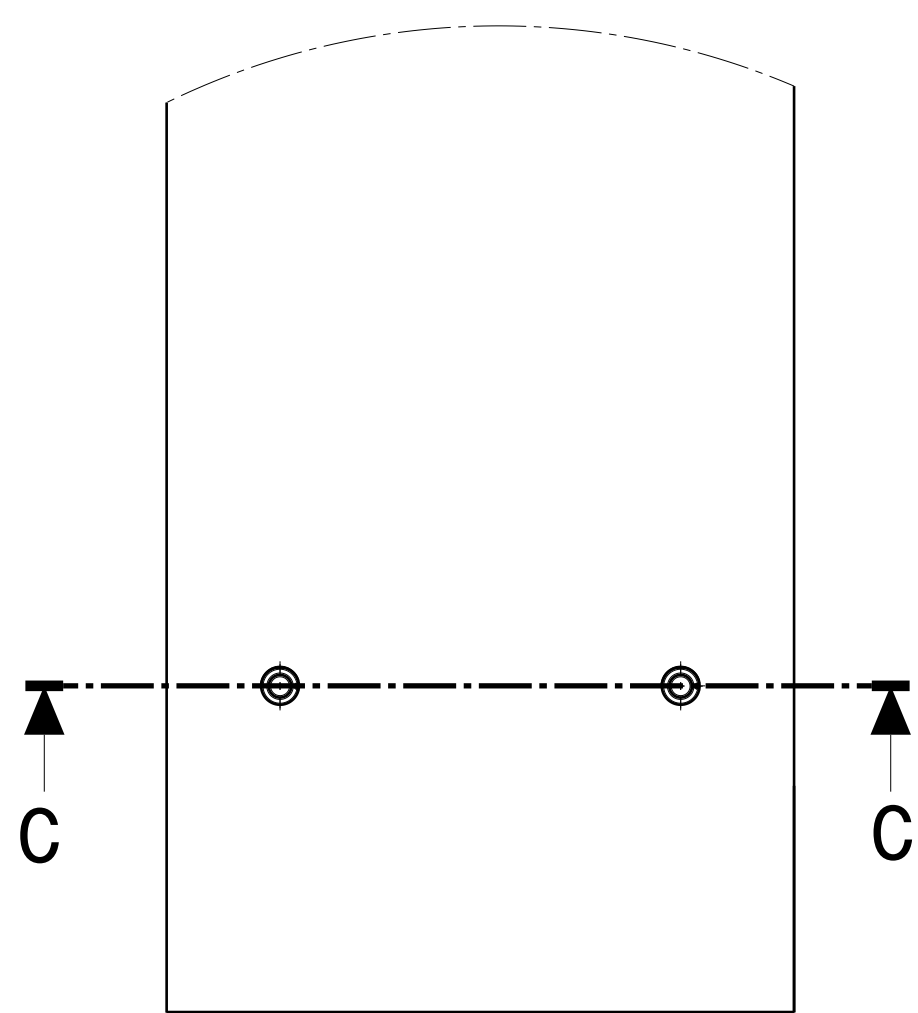
Left view  
Scale: 1:5



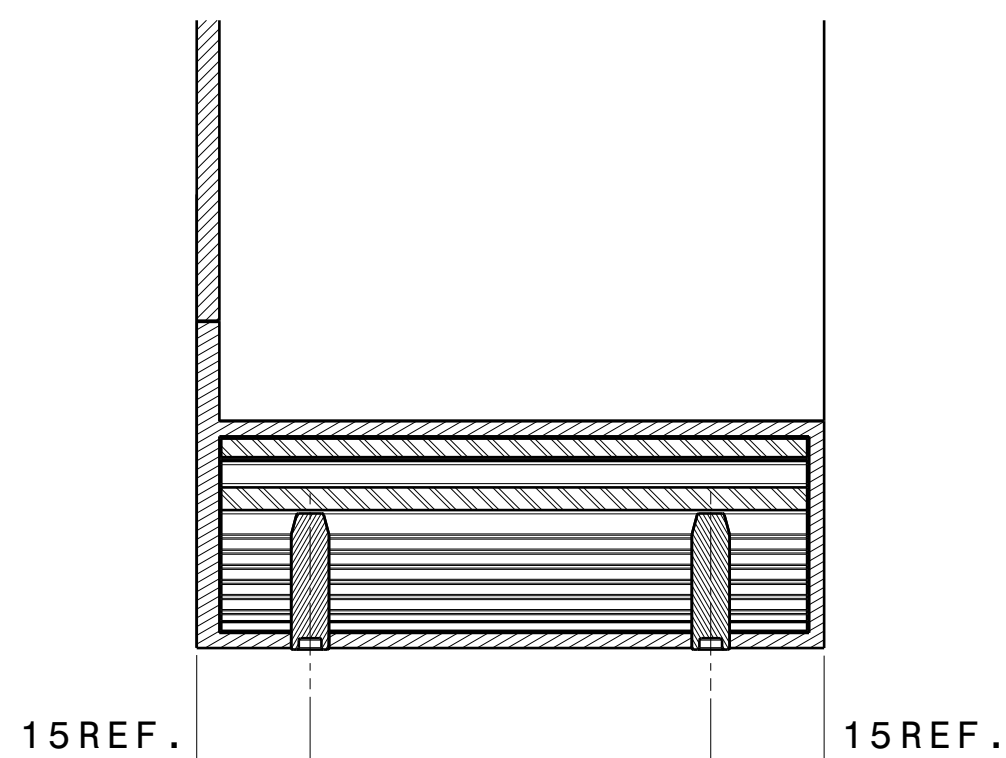
Top view  
Scale: 1:5



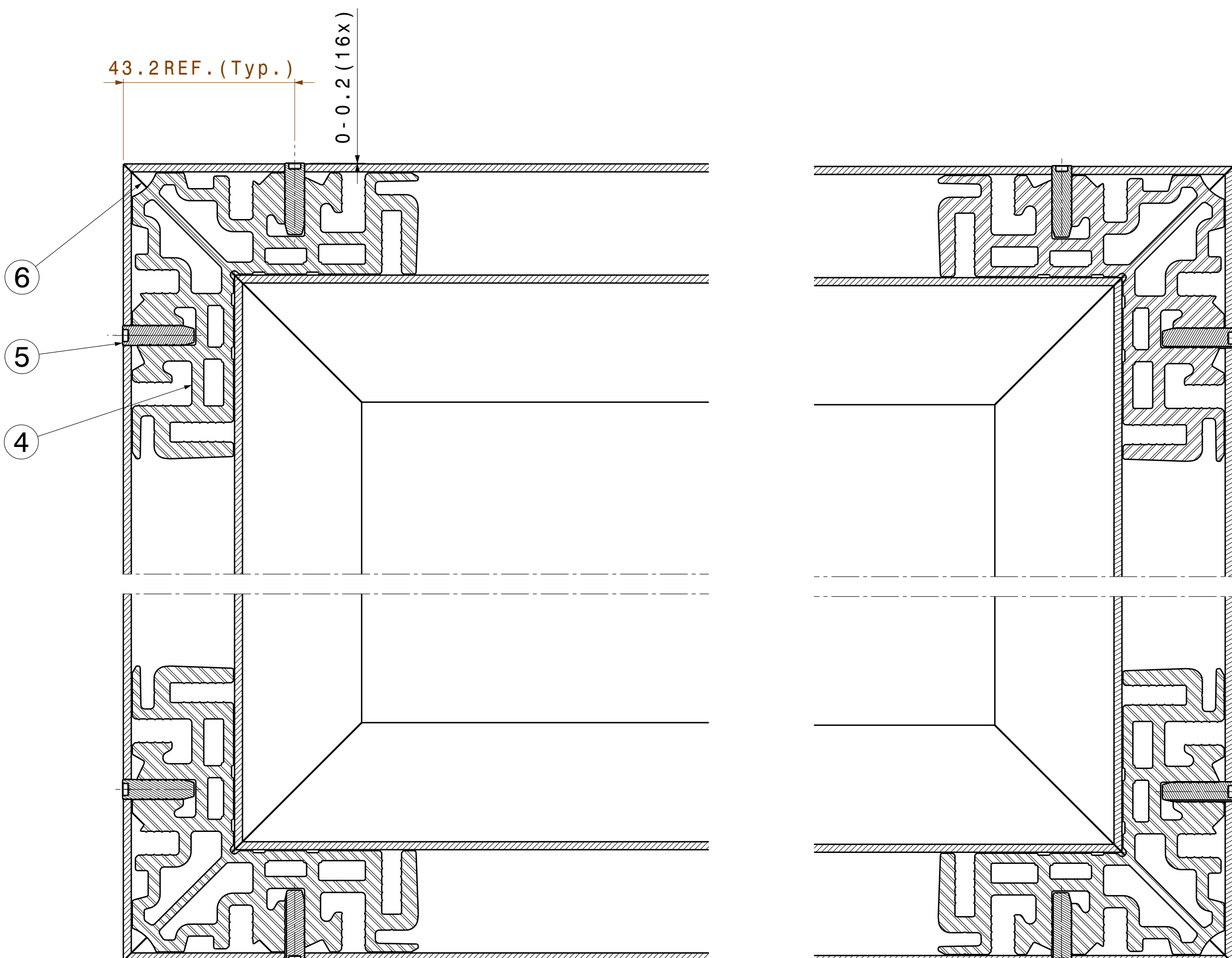
Front view  
Scale: 1:5



Detail B  
Scale: 1:1



Section view C-C  
Scale: 1:1



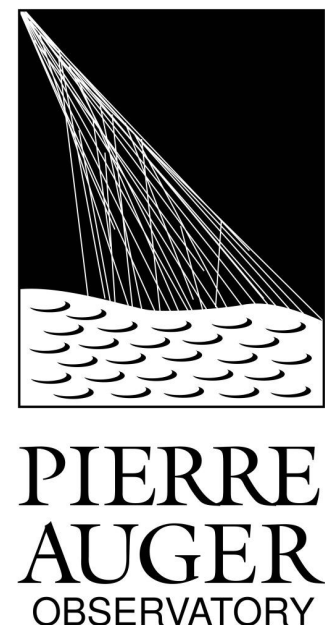
APPLY ON EACH CORNER !


Section view A-A  
Scale: 1:1

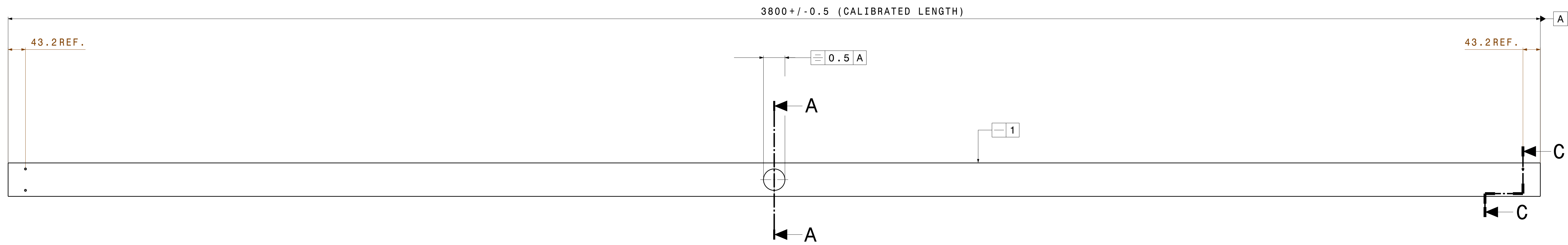
Mass: 18,3kg.

6	1	2K-Silicone Sealant (OTTOCOLL S 610-BLACK)	AB0284	A
5	16	Notched Pin (Alum. 5x18-Foppe&Foppe 13138158/Schuco 218858)	AB0271	A
4	4	Corner Connector FOPPE&FOPPE 1104991801	AB0266	D
3	2	Longbeam D2-83mm SHORT Side (SSD Type D 83mm)	AB0243	A
2	1	Longbeam D1-83mm (SSD Type D 83mm)	AB0244	B
1	1	Longbeam D-83mm PMT Side (SSD Type D 83mm)	AB0245	B
Pos Nr	Qty.	Definition	Item No	Rev

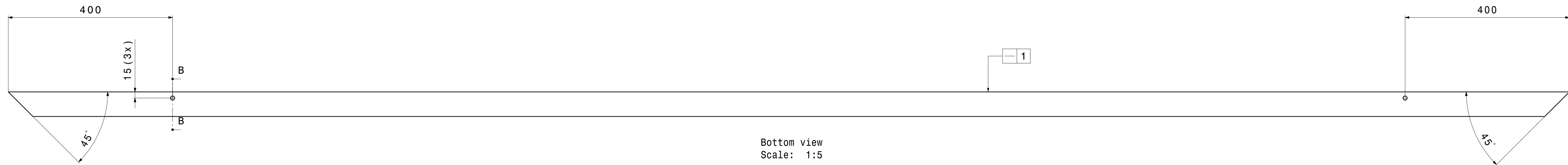
DS-SMARTEAM®-Editor V5-6R2015 Service Pack 3 Product/Part Revision  
(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !



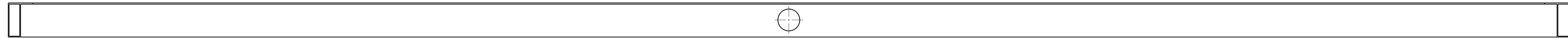
General tolerances unless otherwise stated according to : ISO 2768-MK-1			
Geometrical tolerances unless otherwise stated according to : ISO 8015-1			
Surface texture unless otherwise stated according to : ISO 13565-1			
Project: Astroparticle Physics Auger		Units: mm	Date: 25/09/2017
Top folder: SSD Production		Drawn: AD	Reviewed: A. Korperaal
Name: Longbeam Gluing Ass'y D-83mm (SSD Type D 83mm - Production)		Checked: A. Korperaal	Released
		Item number: AB0246	Released
		Nikhef number: 45500-MT-00640	
National Institute for Subatomic Physics Science Park 105, 1099 NS Amsterdam			



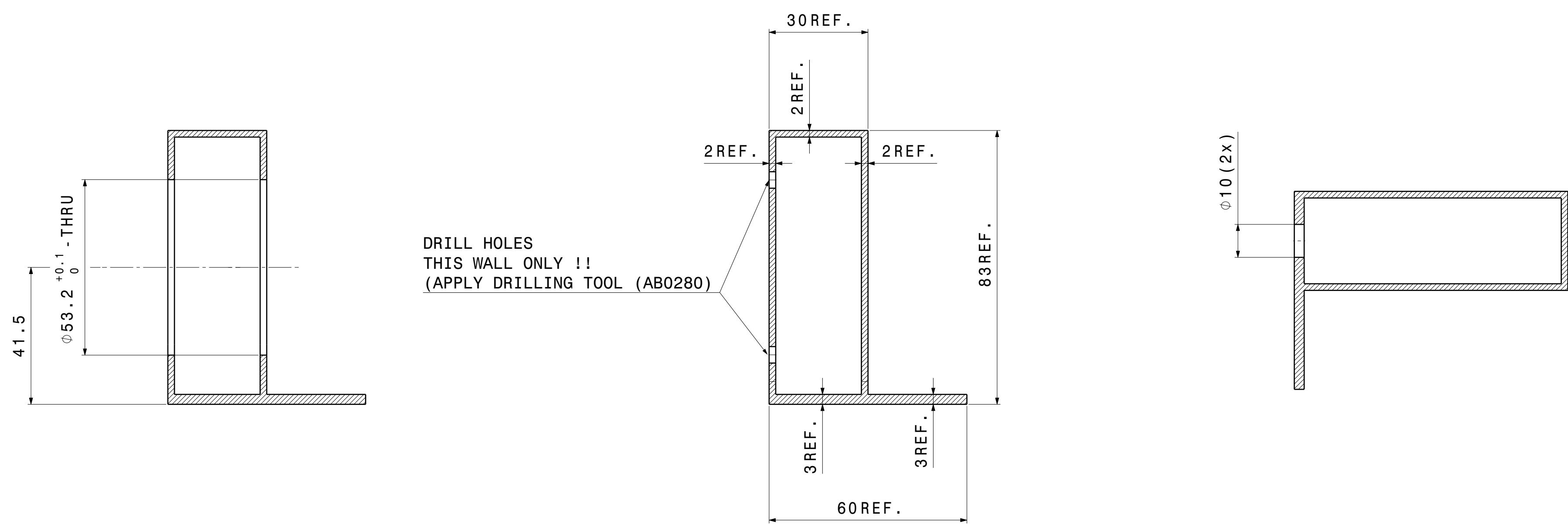
Front view  
Scale: 1:5



Bottom view  
Scale: 1:5



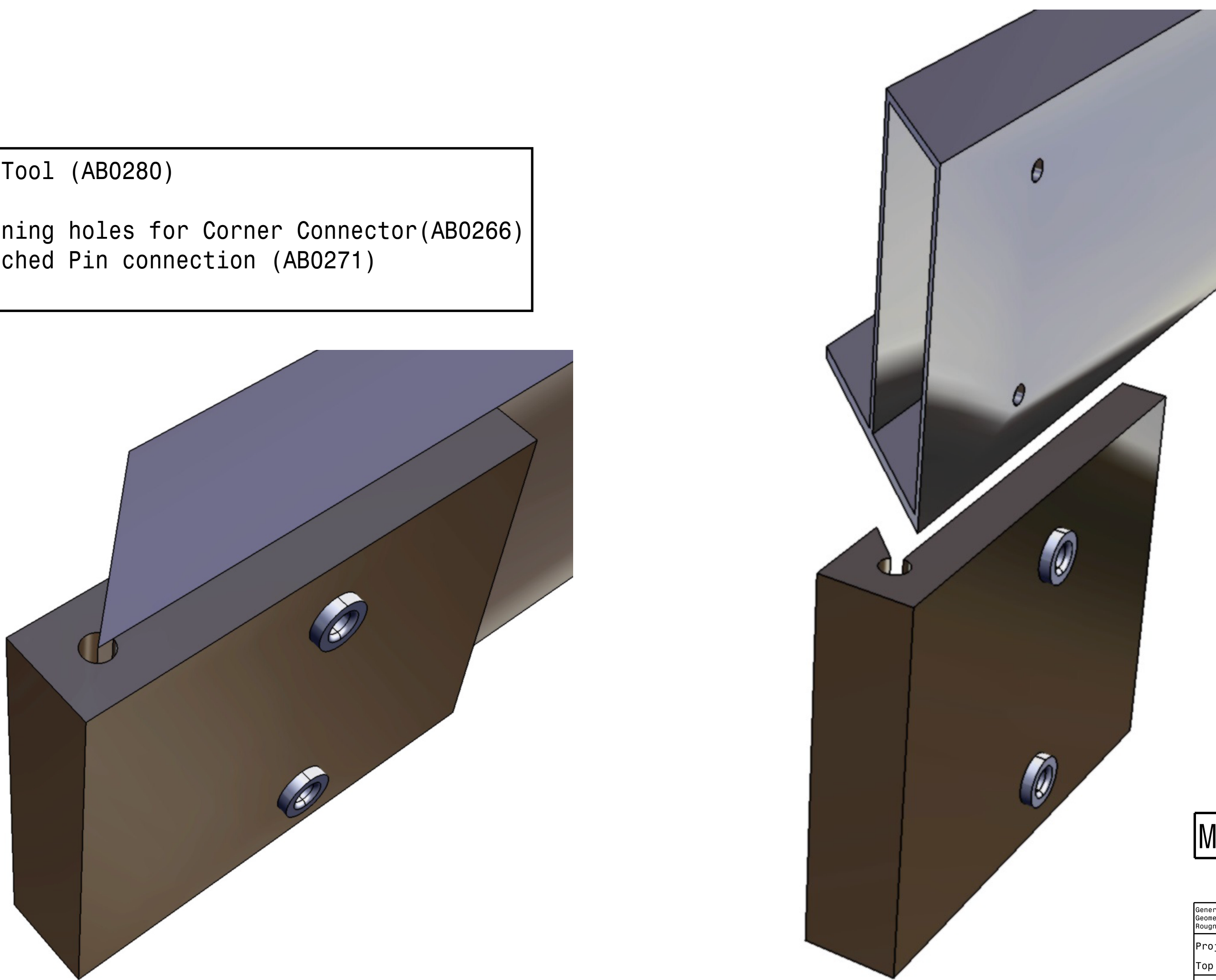
Rear view  
Scale: 1:5



Section view A-A  
Scale: 1:1

Section view C-C  
Scale: 1:1

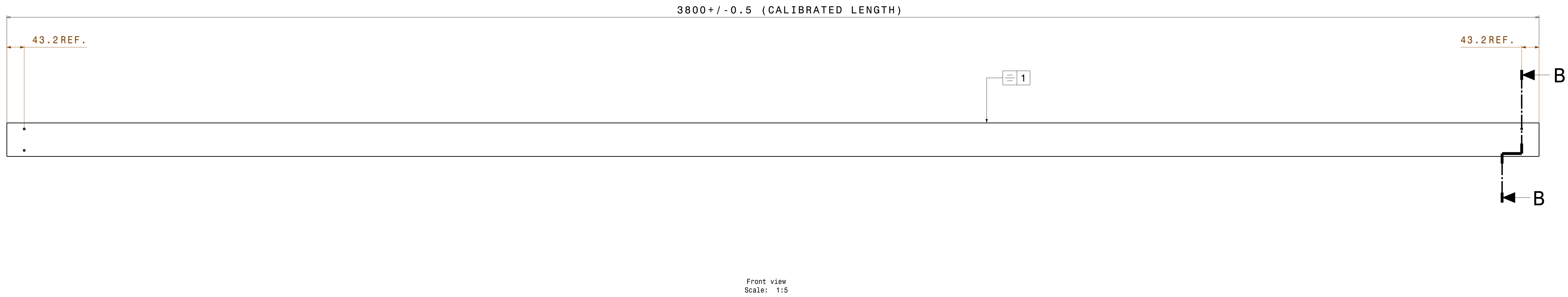
Section view B-B  
Scale: 1:1



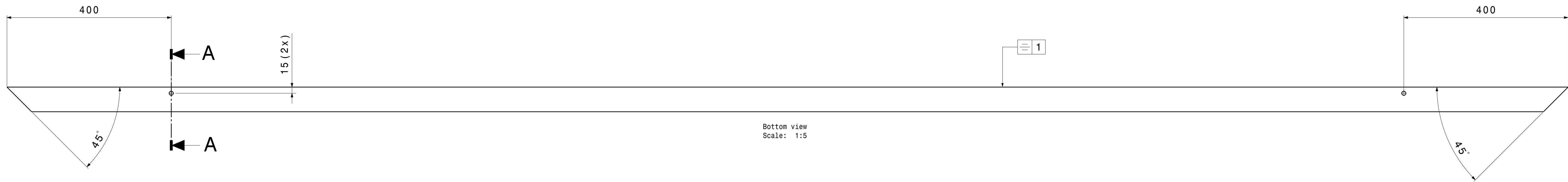
Mass: 5.6kg.

General tolerances unless otherwise stated according to ISO 2768-mS		Material: EN AW-6060 (Extrusion dye: P118205)	
Geometrical tolerances unless otherwise stated according to ISO 1101		Drawn: 25/09/2017	Checked: C
Surface finish unless otherwise stated according to ISO 1305		Drawn: AG	Checked: A. Korpela
Project: Astroparticle Physics Auger		Name: Longbeam D-83mm PMT Side (SSD Type D 83mm)	
Top folder: SSD Production		Item number: AB0245	
Name: Longbeam D-83mm PMT Side (SSD Type D 83mm)		Released	
National Institute for Subatomic Physics Science Park 100, 10060 Arcore (Italy)		Release number: 45500-MT-00666	
This drawing may not be used for commercial purposes without written authorization.			

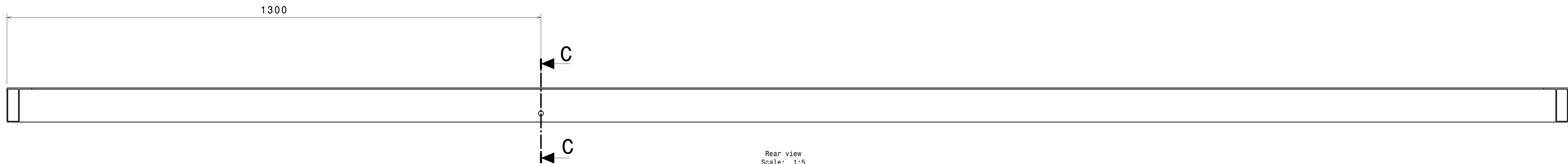




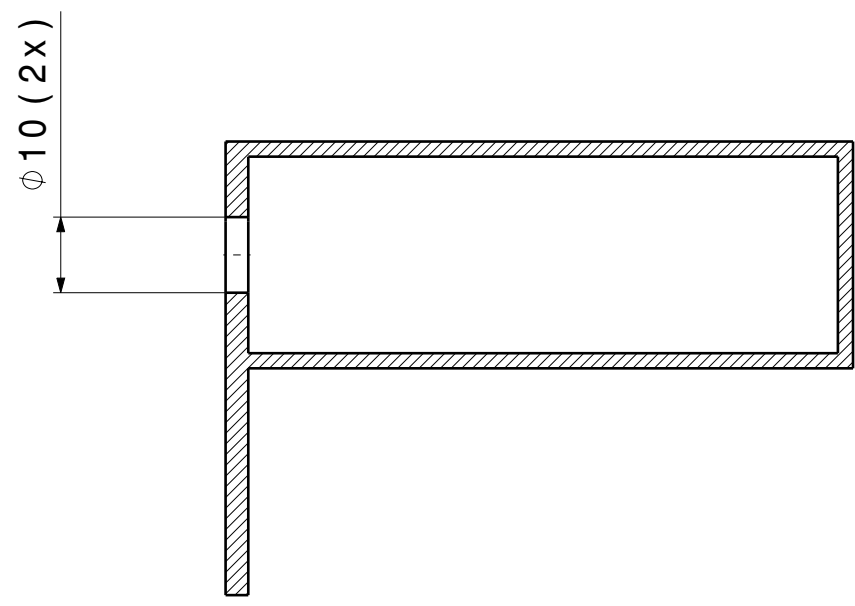
Front view  
Scale: 1:5



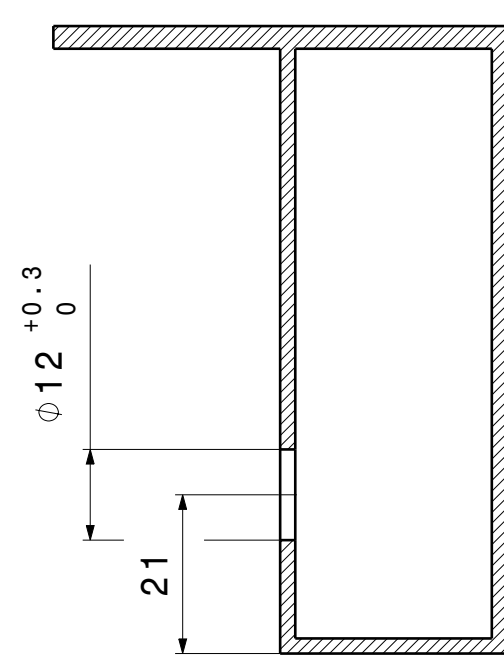
Bottom view  
Scale: 1:5



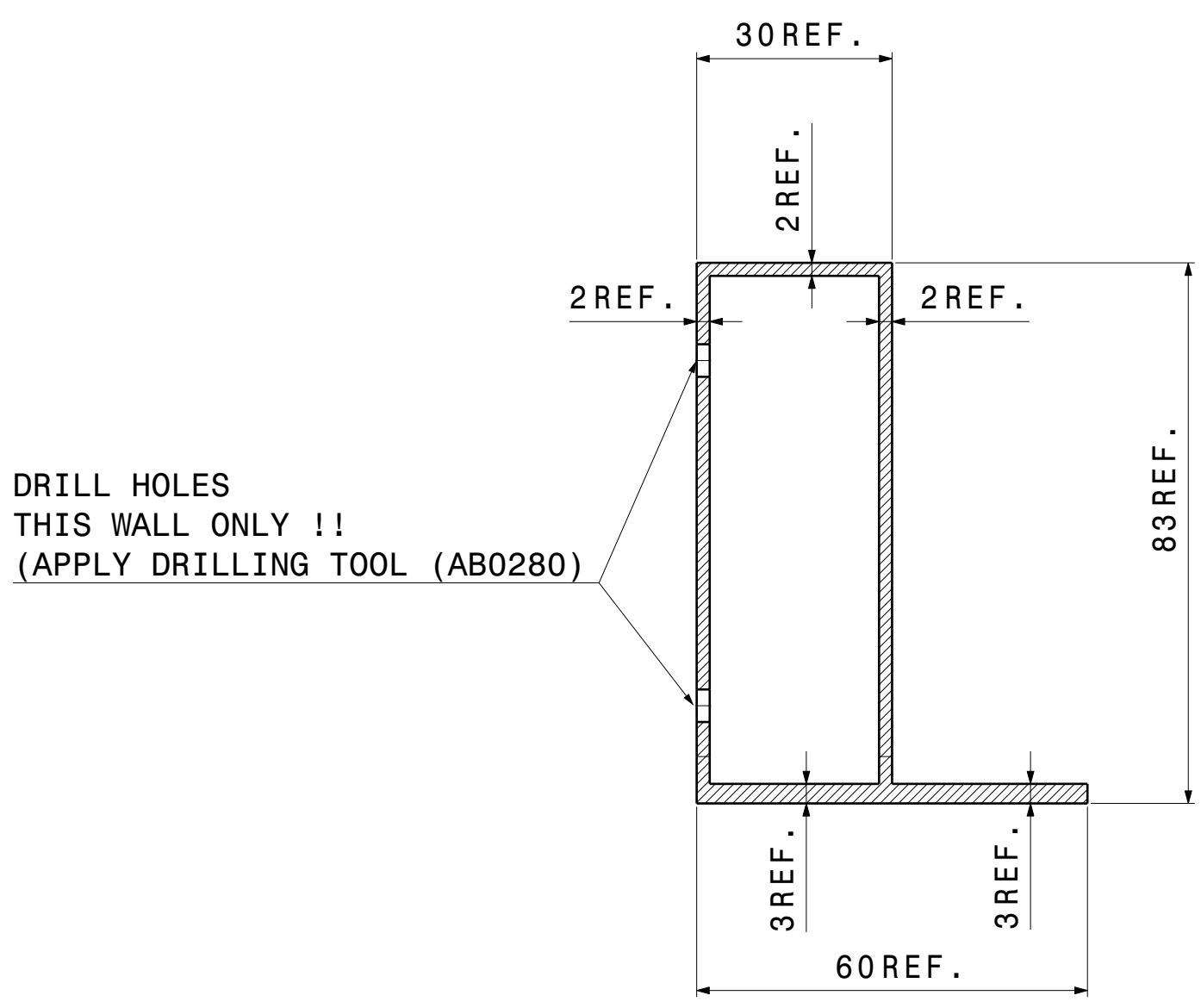
Rear view  
Scale: 1:5



Section view A-A  
Scale: 1:1

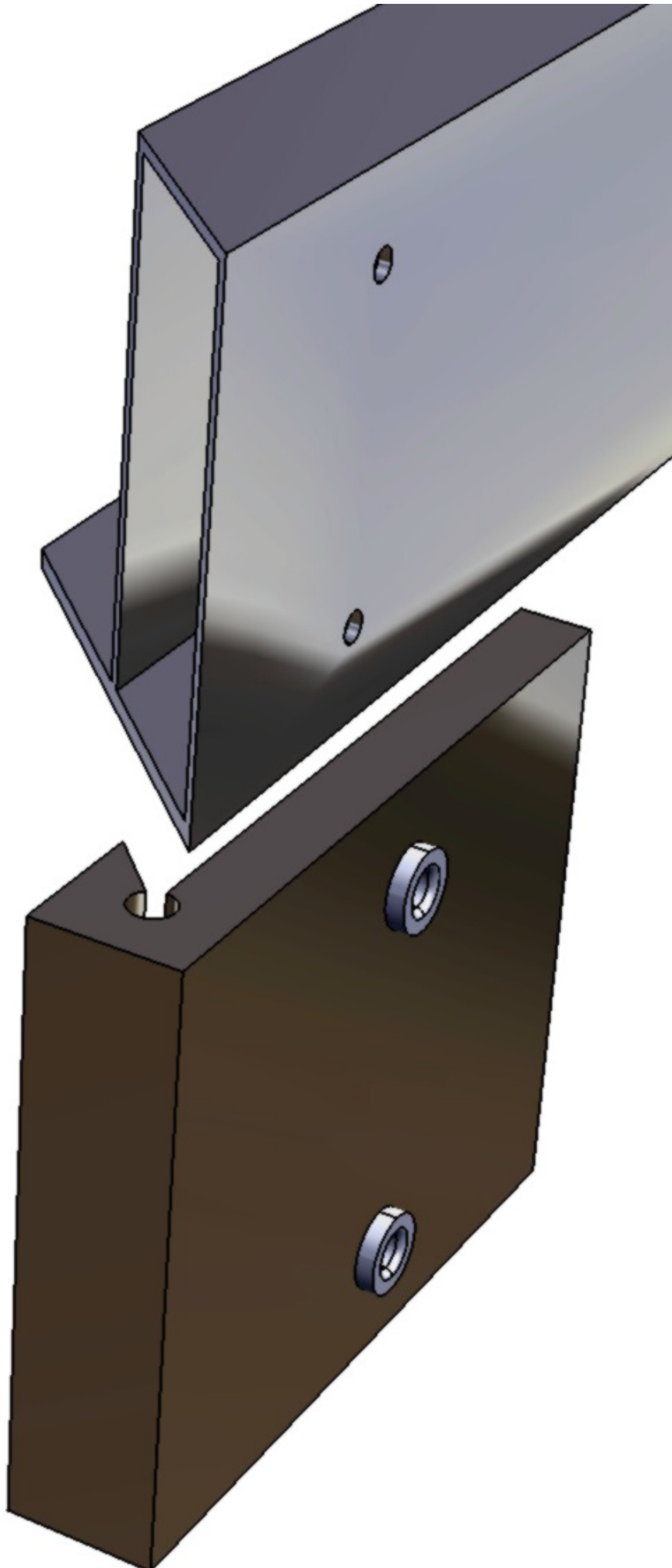
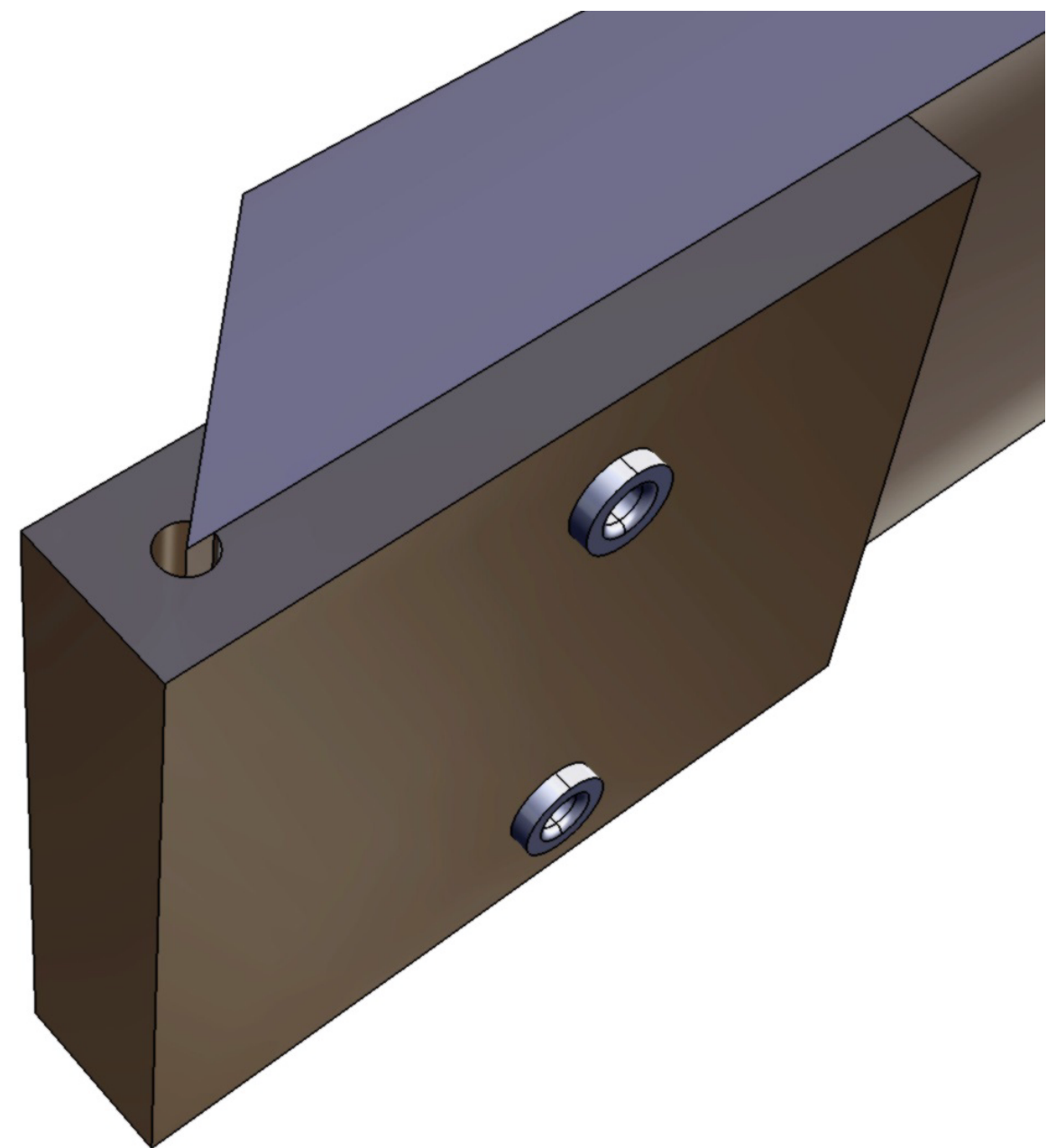


Section view C-C  
Scale: 1:1



Section view B-B  
Scale: 1:1

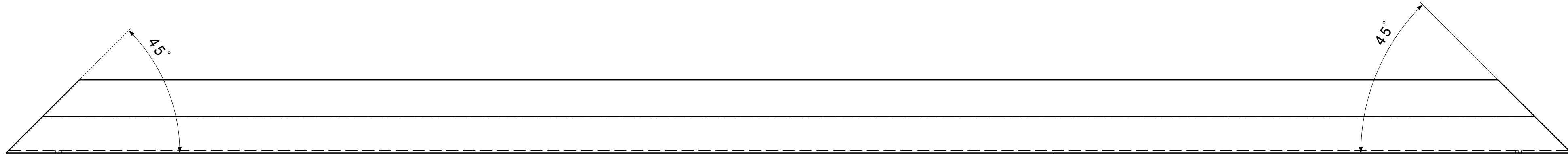
Drilling Tool (AB0280)  
\* Positioning holes for Corner Connector(AB0266)  
vs. Notched Pin connection (AB0271)  
\*



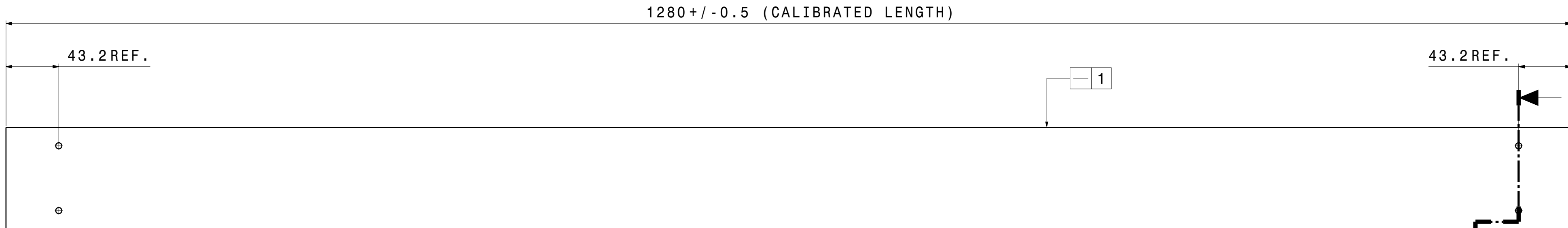
Mass: 5,6kg.

General tolerances unless otherwise stated according to ISO 2768-MS		Material: EN AW-6060 (Extrusion dye: P118205)	
Geometrical tolerances unless otherwise stated according to ISO 1101		Date: 25/09/2017	
Degrees unless otherwise stated according to ISO 1030		Revision: C	
Project: Astroparticle Physics Auger		Status: AD	
Top folder: SSD Production		Project: A. Korpela	
Name: Longbeam D1-83mm (SSD Type D 83mm)		Status: Released	
National Institute for Subatomic Physics Scintech Park 100, 10000, 100000		Item number: AB0244	
Release number: 45500-MT-00667			
This drawing may not be used for commercial purposes without written authorization.			





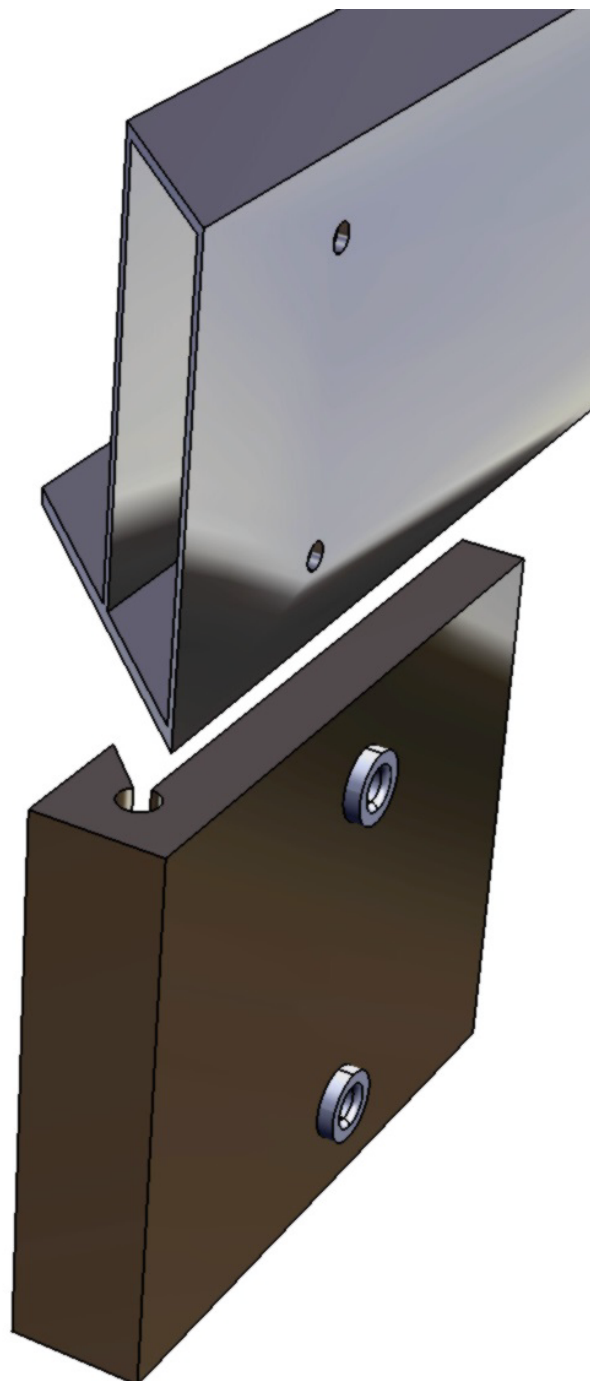
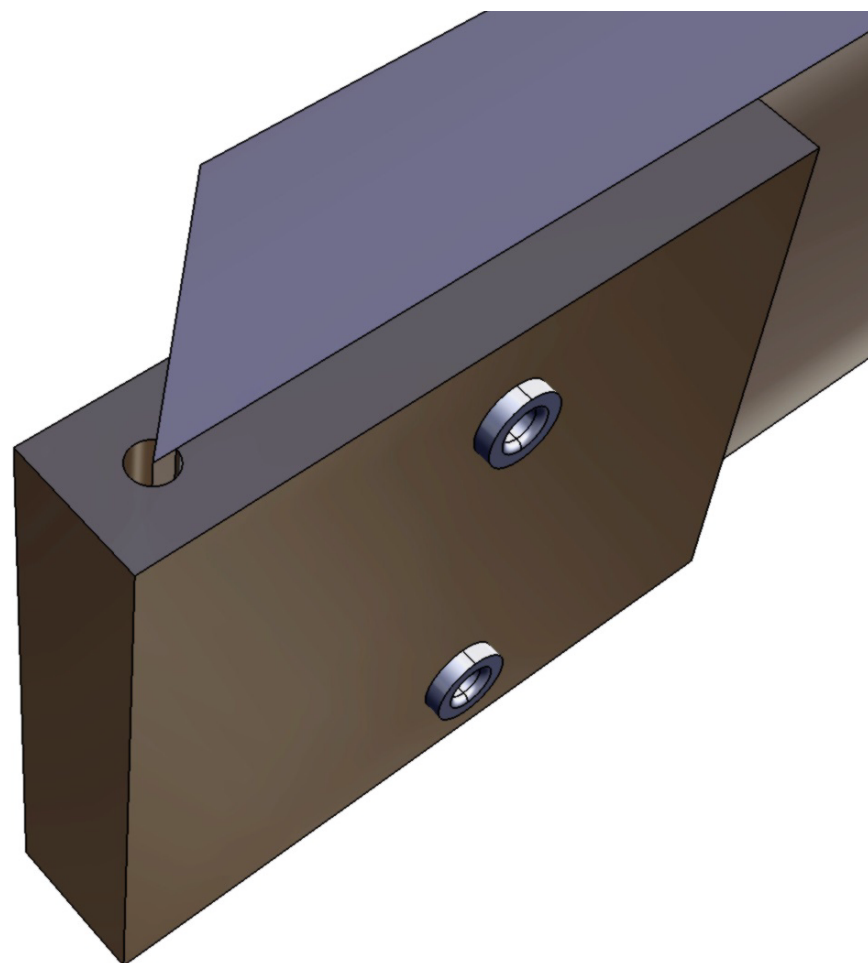
Top view  
Scale: 2:5



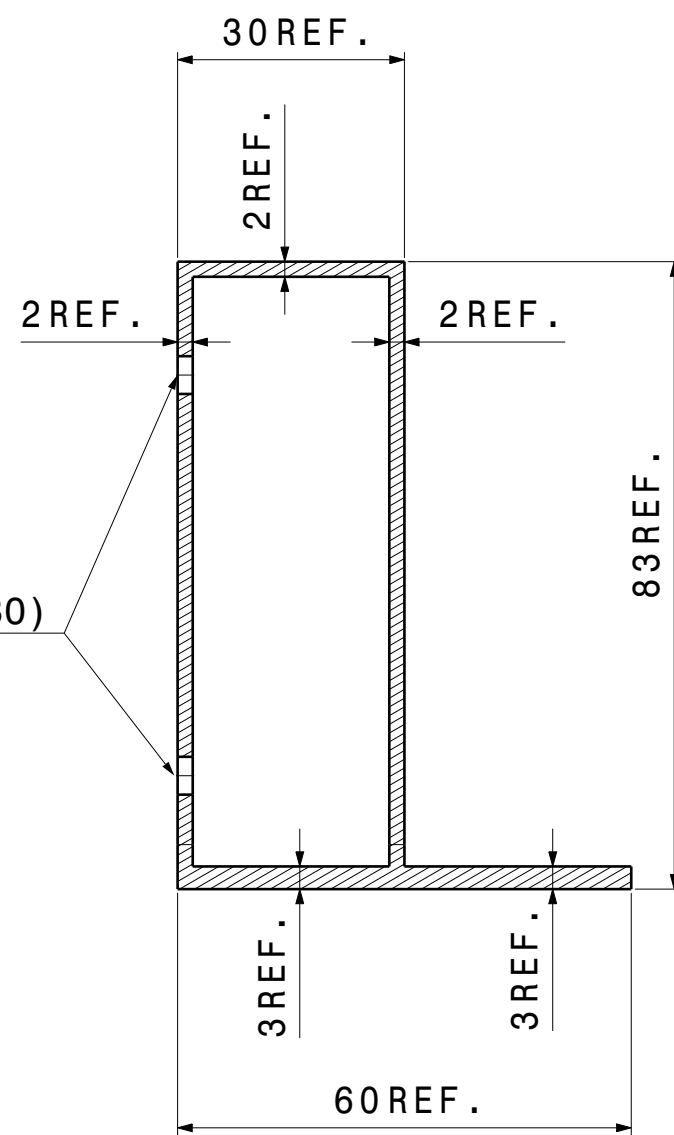
Front view  
Scale: 2:5

### Drilling Tool (AB0280)

- \* Positioning holes for Corner Connector(AB0266) vs. Notched Pin connection (AB0271)
- \*


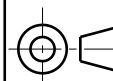


DRILL HOLES  
THIS WALL ONLY !!  
(APPLY DRILLING TOOL (AB0280))

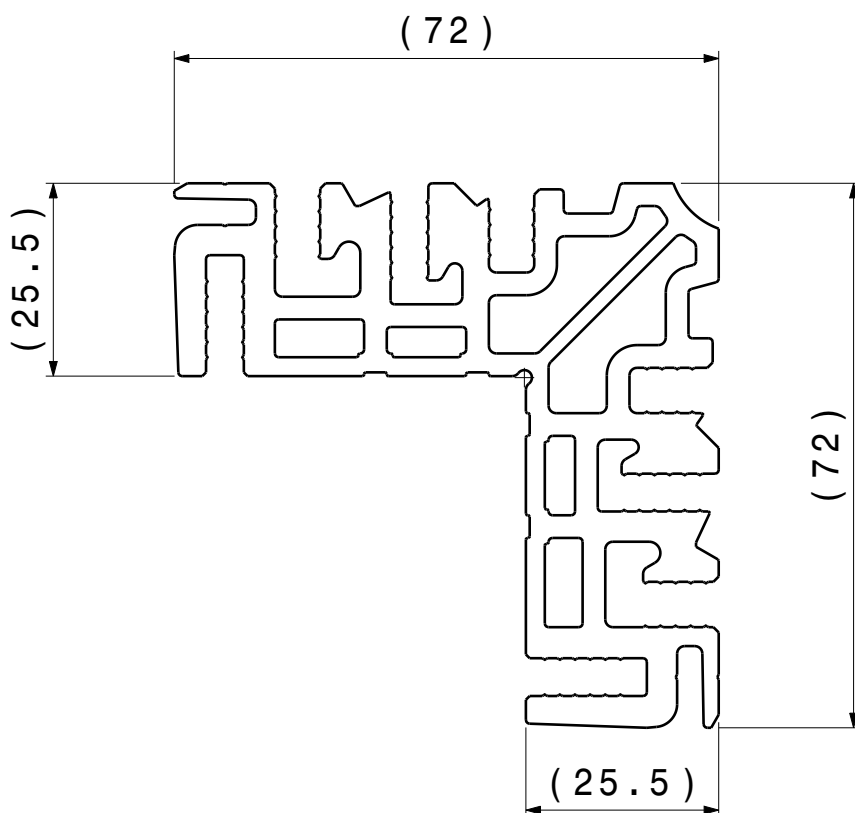
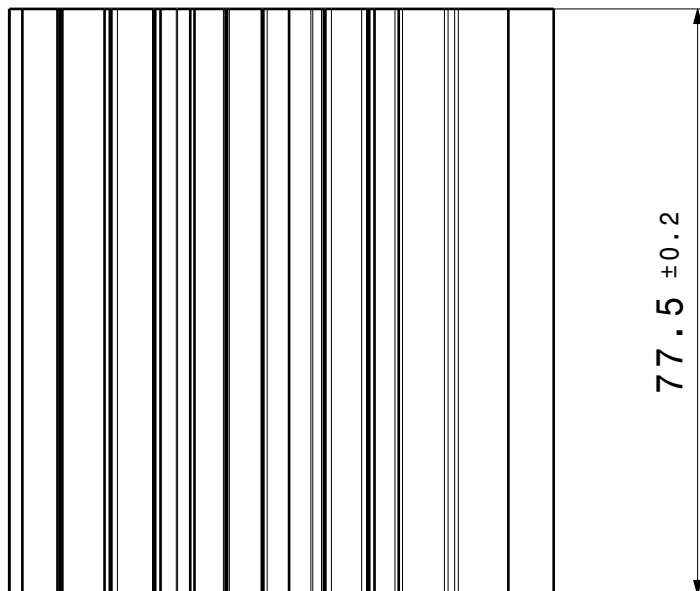


Section view B-B  
Scale: 1:1


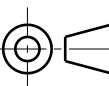
Mass: 1,9kg.

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to :ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: EN AW-6060 (Extrusion dye: P118205)	
Project: Astroparticle Physics Auger		Units: mm	Date: 25/09/2017	Revision: B
Top folder:SSD Production		Size: A2	Engineer: A. Korporaal	
Name: Longbeam D2-83mm SHORT Side (SSD Type D 83mm)			Checked: A. Korporaal	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Item number:	Status:
			AB0243	Released
		Nikhef number: 45500-MT-00668		
This drawing may not be used for commercial purposes without written authorisation.				

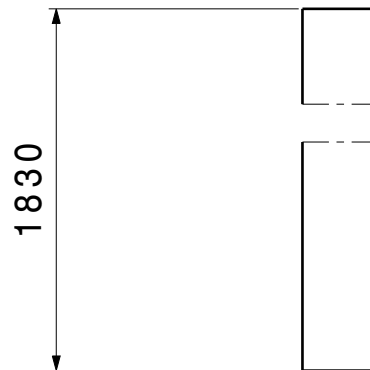




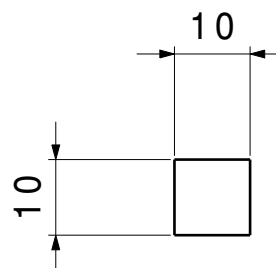
**Mass: 0.77kg.**

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material: FOPPE&FOPPE 1104991601		
Project: Astroparticle Physics Auger Top folder:SSD Production		Units: mm	Date: 12/06/2017	Revision: D		
		Size: A4	Engineer: A. Korporaal			
Name: Corner Connector FOPPE&FOPPE 1104991601			Checked: A. Korporaal			
			Item number: AB0266	Status: Released		
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00646			
This drawing may not be used for commercial purposes without written authorisation.						


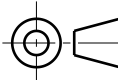




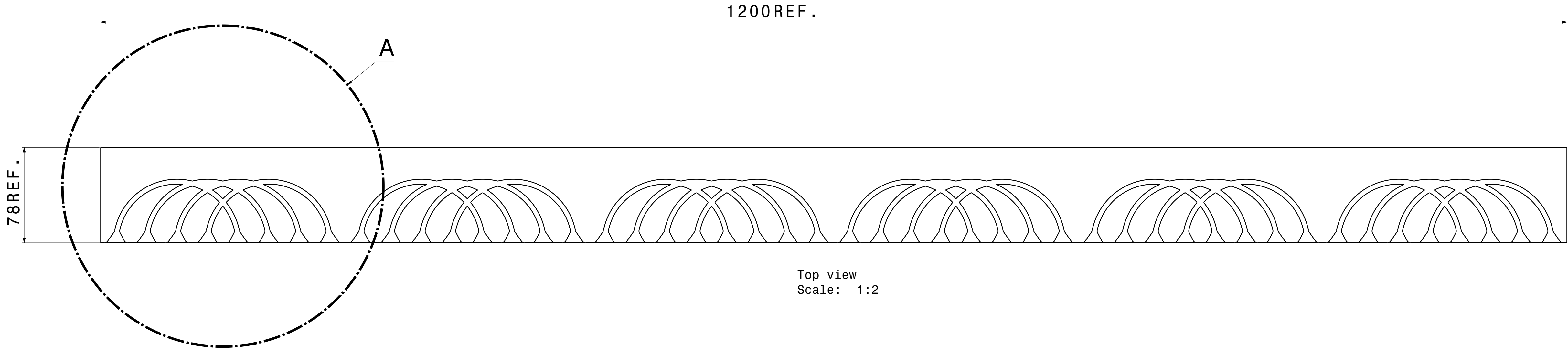
Top view  
Scale: 1:1



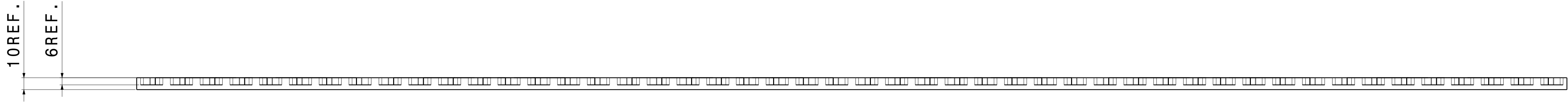
Front view  
Scale: 1:1

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: EPS Foam 10mm	
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 12/12/2017	Revision: A
		Size: A4	Engineer: A. Korporaal	
Name:  Filling Strip A			Checked: A. Korporaal	
			Item number: AB0240	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00782	
This drawing may not be used for commercial purposes without written authorisation.				

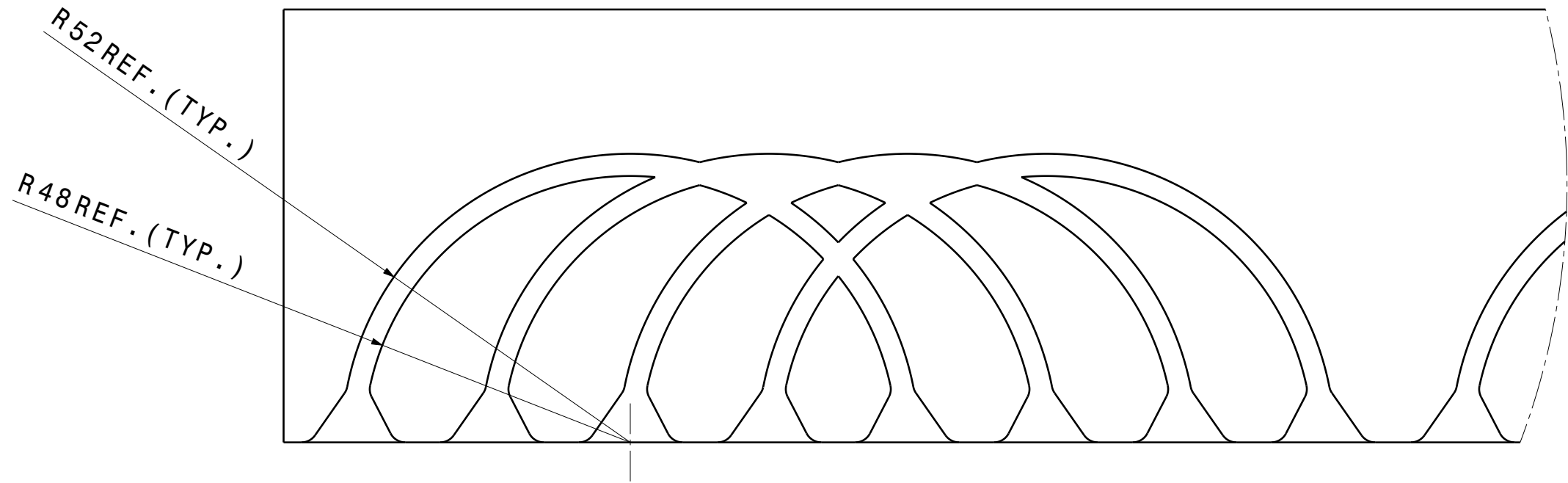




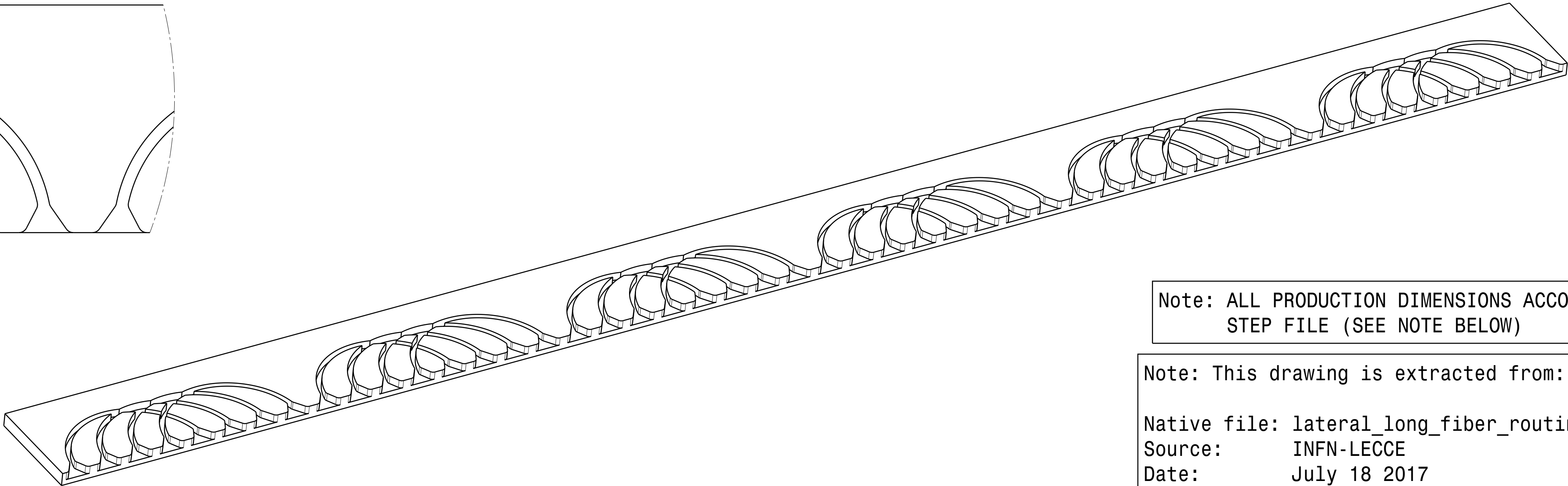
Top view  
Scale: 1:2



Bottom view  
Scale: 1:2





Detail A  
Scale: 1:1



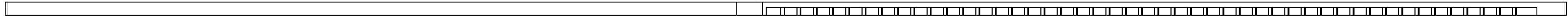
Note: ALL PRODUCTION DIMENSIONS ACCORDING  
STEP FILE (SEE NOTE BELOW)

Note: This drawing is extracted from:

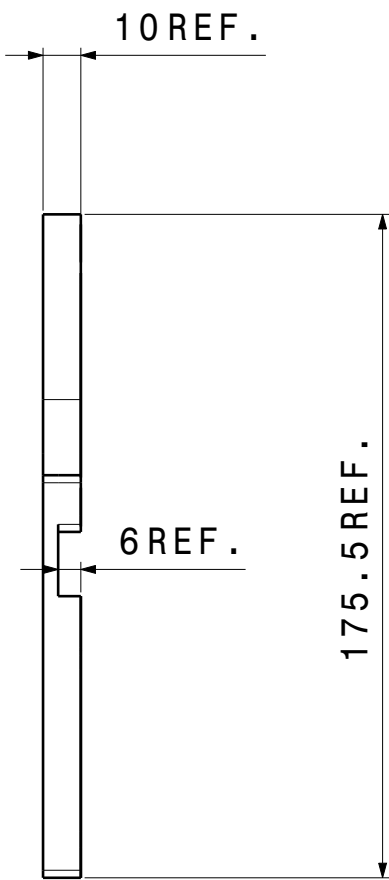
Native file: lateral\_long\_fiber\_routing.stp  
Source: INFN-LECCE  
Date: July 18 2017

General tolerances unless otherwise stated according to :ISO-2768-MK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 0.1		Material: Expanded Polystyrene (EPS 35kgm-3)				
Project: Astroparticle Physics Auger		Units: mm	Date: 19/07/2017	Revision: A				
Top folder: SSD Production		Size: A1	Engineer: A. Korporaal					
Name: Fiber Router A (Detector Ends)			Checked: A. Korporaal					
			Item number: AB0331	Status: Released				
National Institute for Subatomic Physics Science Park 106, 1098SG Amsterdam			Nikhef number: 45500-MT-00754					
This drawing may not be used for commercial purposes without written authorisation.								

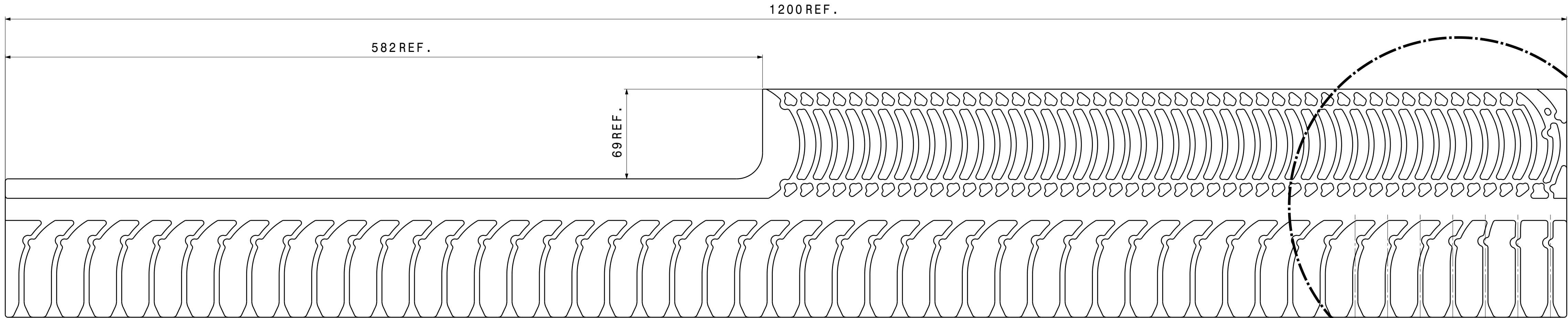




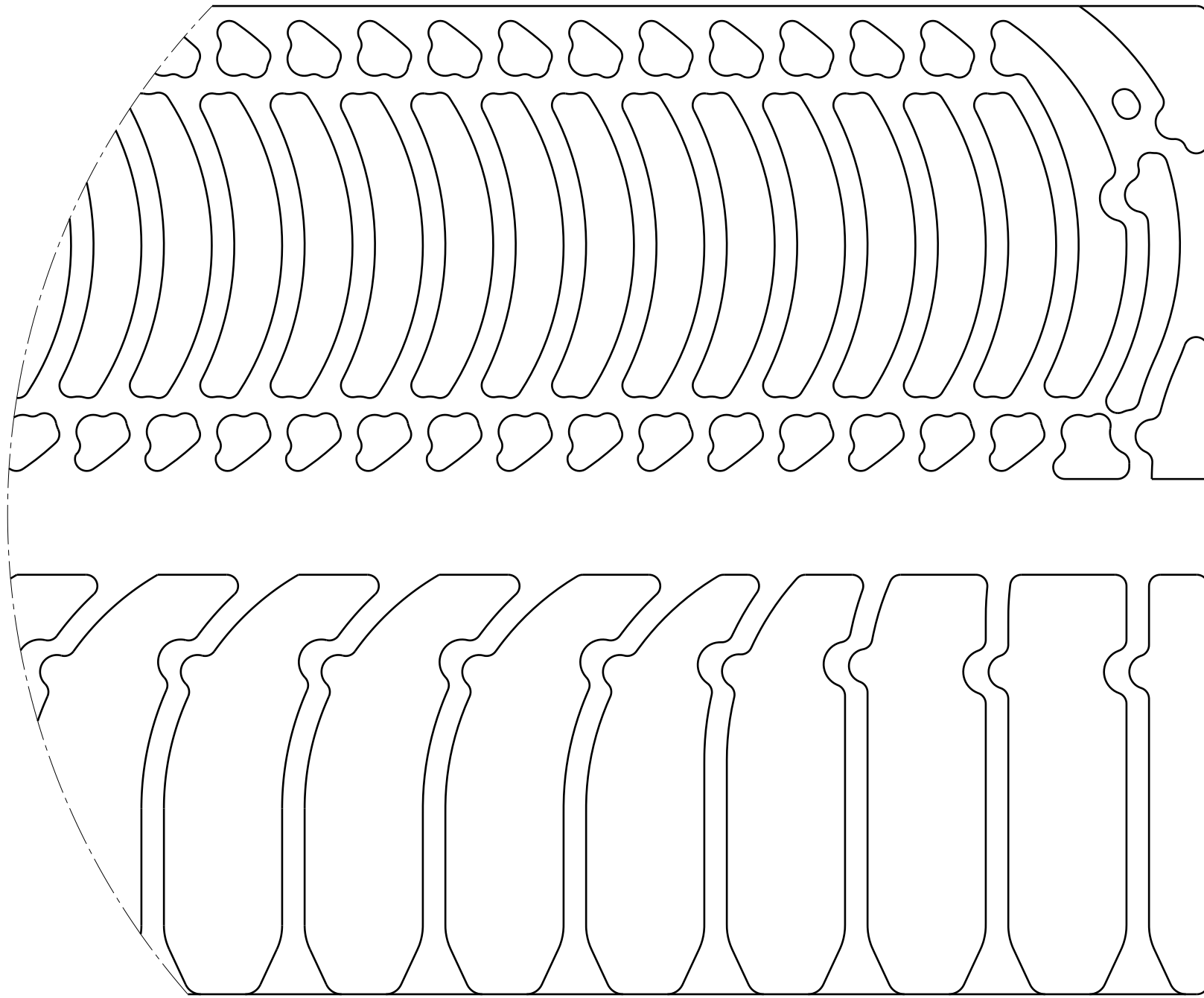
Front view  
Scale: 1:2



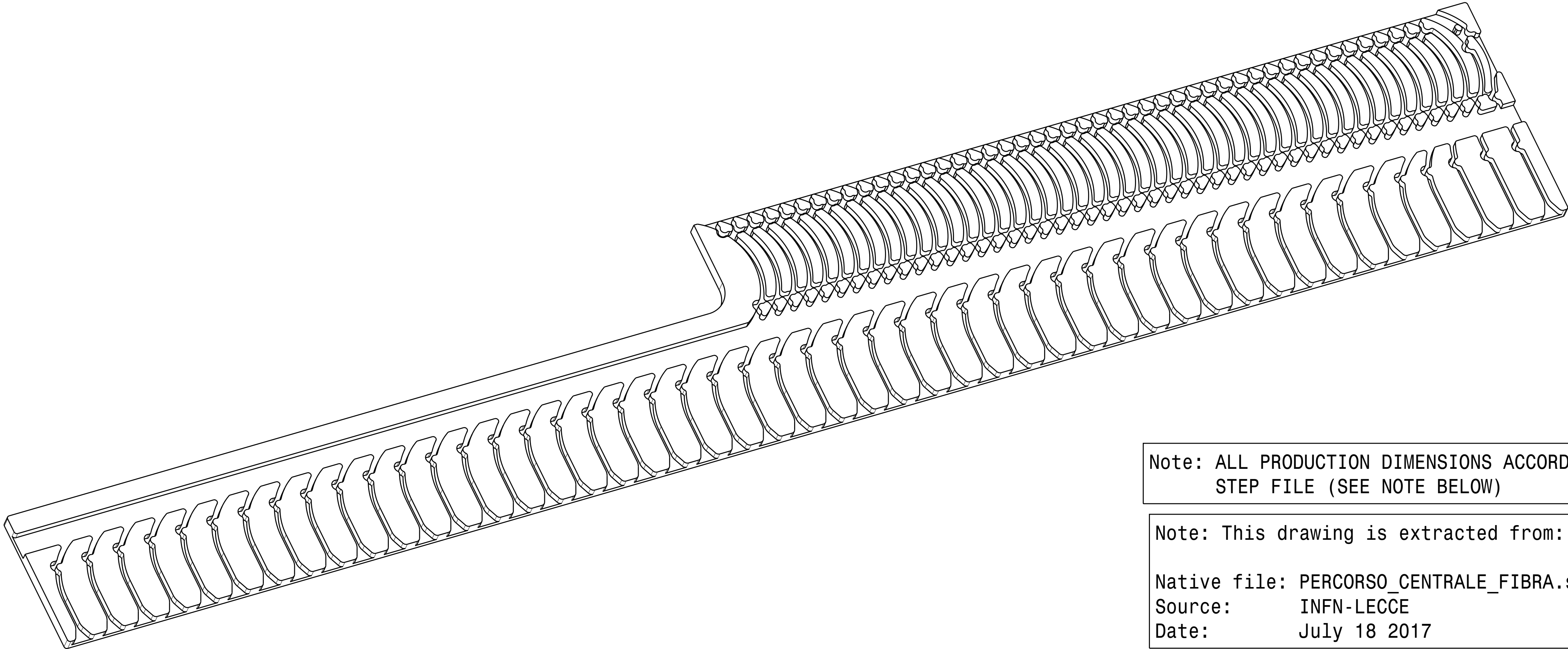
Left view  
Scale: 1:2



Top view  
Scale: 1:2



Detail A  
Scale: 1:1



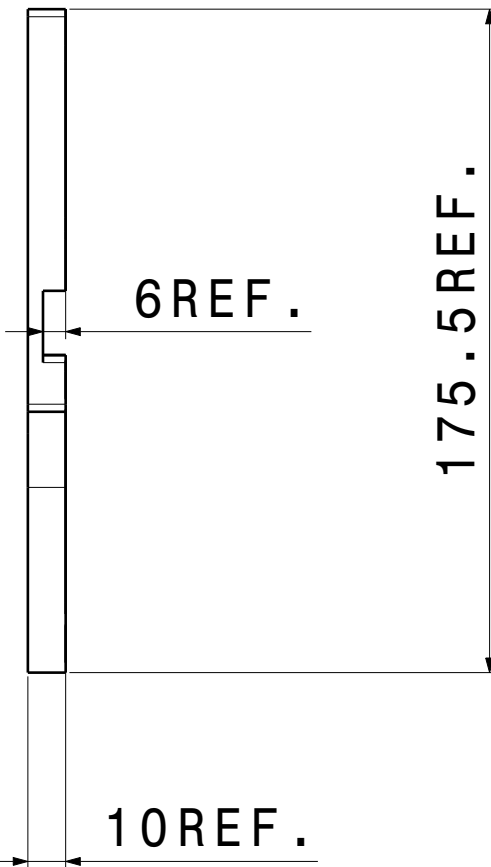
Note: ALL PRODUCTION DIMENSIONS ACCORDING STEP FILE (SEE NOTE BELOW)

Note: This drawing is extracted from:

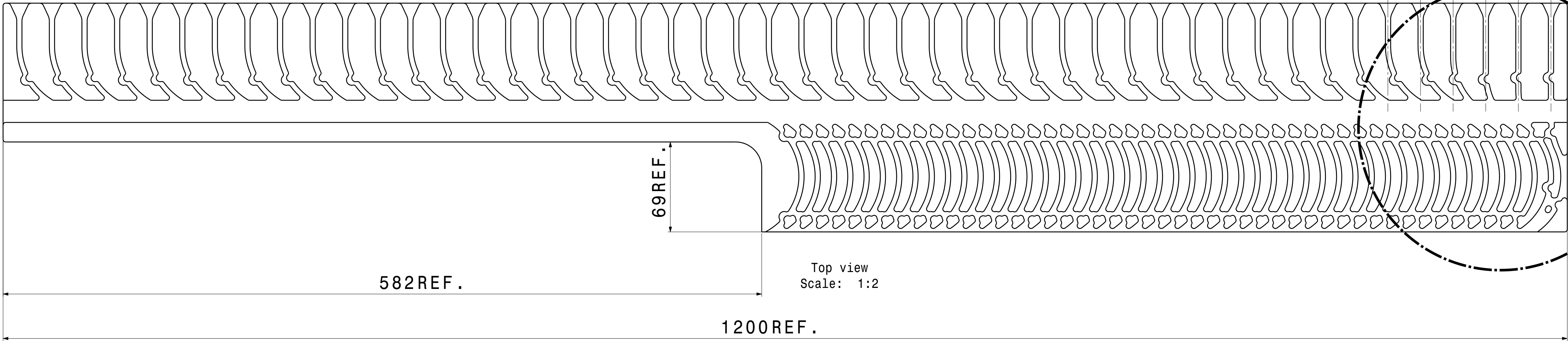
Native file: PERCORSO\_CENTRALE\_FIBRA.stp  
Source: INFN-LECCE  
Date: July 18 2017

General tolerances unless otherwise stated according to :ISO-2768-mk-E Geometrical tolerances unless otherwise stated according to:ISO-8010-E Surface unless otherwise stated according to :ISO-1302				Material: Expanded Polystyrene (EPS 35kgm-3)		
Project: Astroparticle Physics Auger		Units:	mm	Date:	19/07/2017	
Top folder:SSD Production		Size:	A1	Engineer:	A. Korporaal	
Name: Fiber Router B1 (Central Part - RIGHT)			Checked:	A. Korporaal		
National Institute for Subatomic Physics Science Park 106, 1098SG Amsterdam			Item number:	AB0333	Status:	Released
			Nikhef number:	45500-MT-00753		
This drawing may not be used for commercial purposes without written authorisation.						

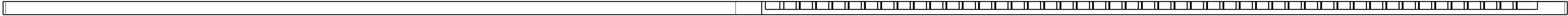




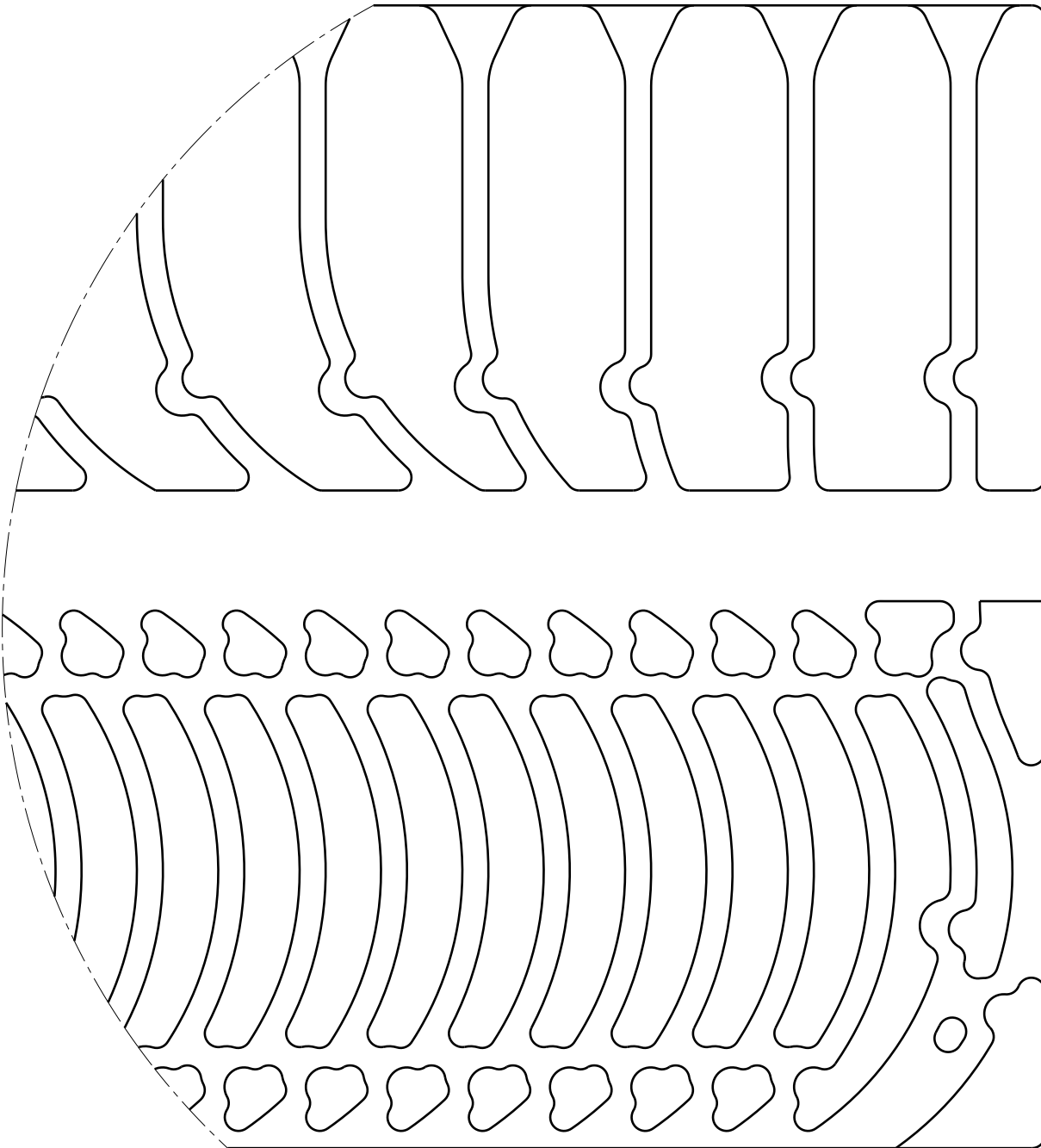
Left view  
Scale: 1:2



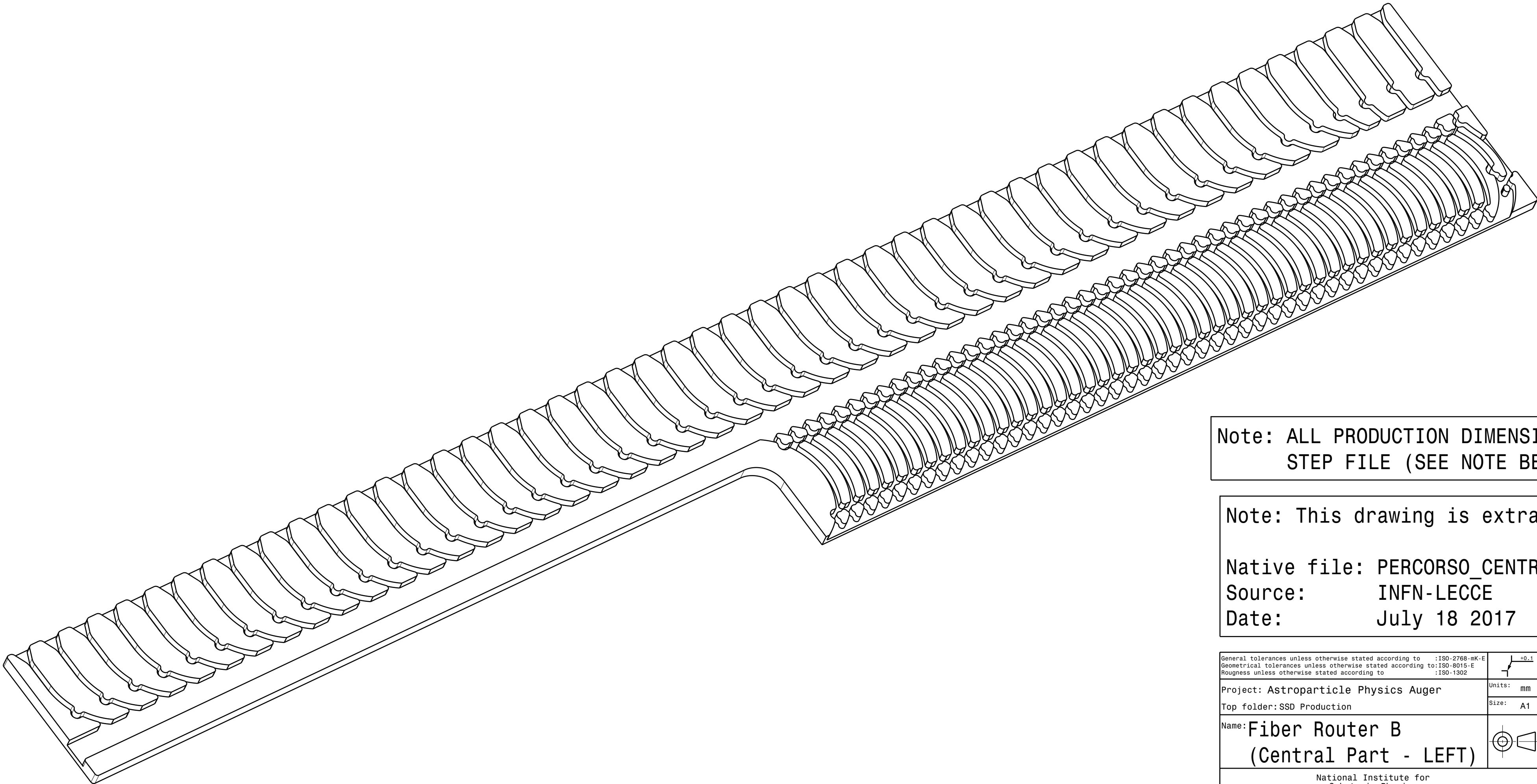
Top view  
Scale: 1:2



Front view  
Scale: 1:2





Detail A  
Scale: 1:1



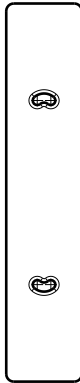
Note: ALL PRODUCTION DIMENSIONS ACCORDING STEP FILE (SEE NOTE BELOW)

Note: This drawing is extracted from:

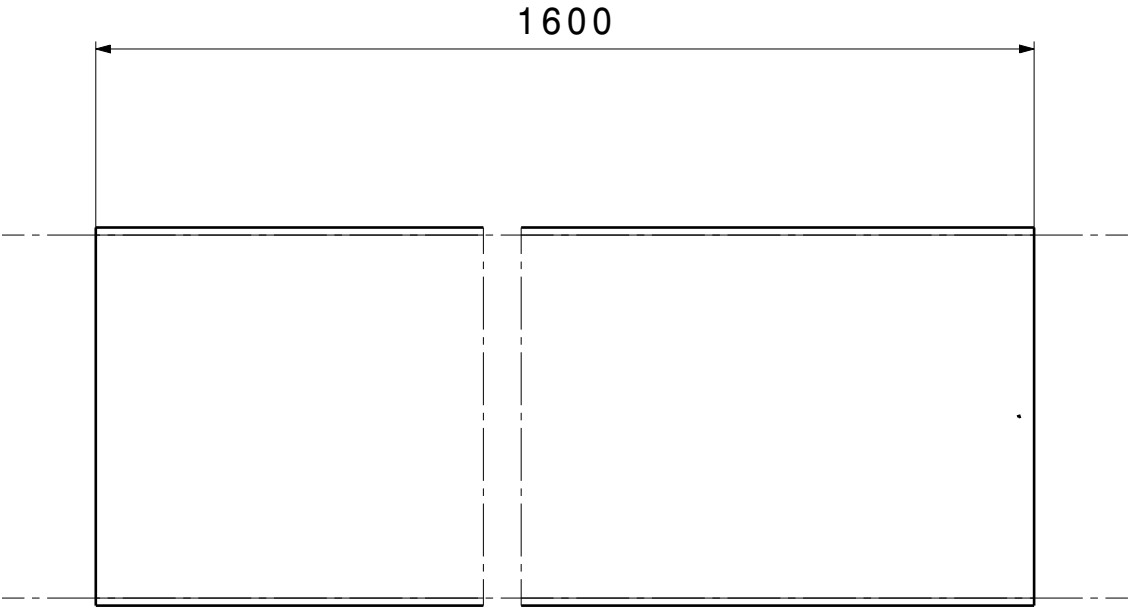
Native file: PERCORSO\_CENTRALE\_FIBRA.stp  
Source: INFN-LECCE  
Date: July 18 2017

General tolerances unless otherwise stated according to :ISO-2768-MK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 Material: <b>Expanded Polystyrene (EPS 35kgm-3)</b>	
Project: Astroparticle Physics Auger	Units: mm	Date: 19/07/2017	Revision: B
Top folder: SSD Production	Size: A1	Engineer: A. Korporaal	
Name: <b>Fiber Router B</b> <b>(Central Part - LEFT)</b>		Checked: A. Korporaal	
National Institute for Subatomic Physics <small>Science Park 106, 1098SG Amsterdam</small>		Item number: <b>AB0332</b>	Status: <b>Released</b>
		Nikhef number: <b>45500-MT-00752</b>	
This drawing may not be used for commercial purposes without written authorisation.			

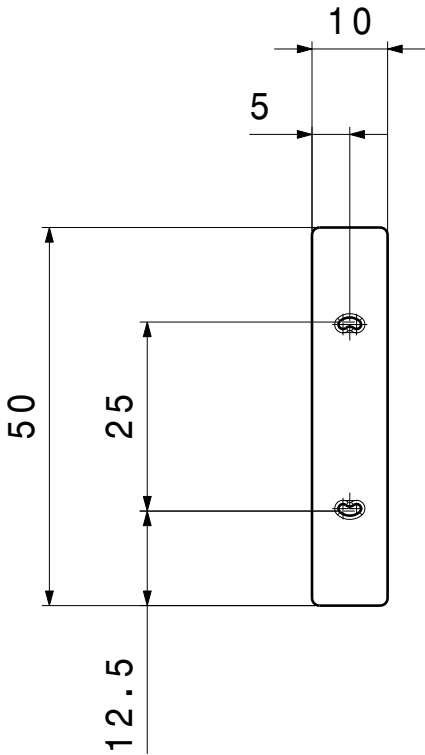





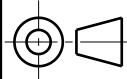
Left view  
Scale: 1:1



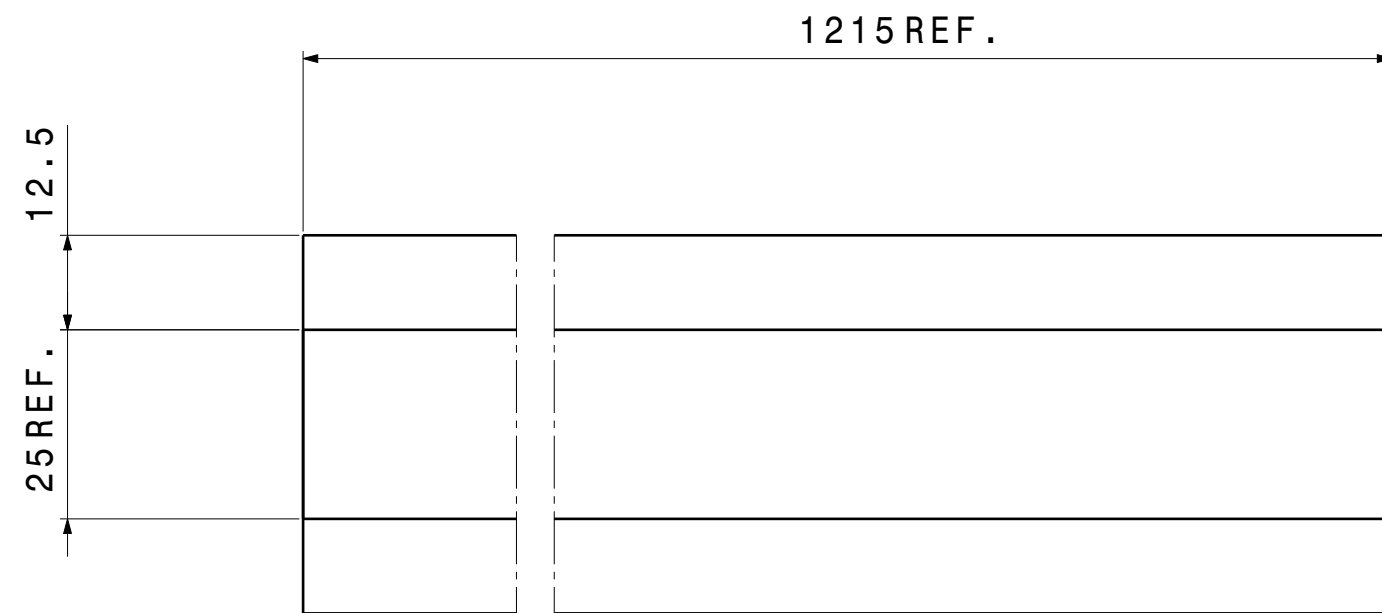
Front view  
Scale: 1:1



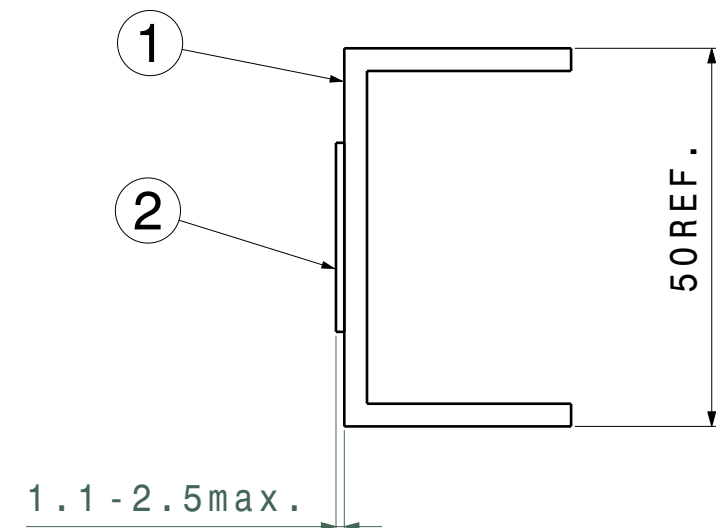
Right view  
Scale: 1:1

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: Polystyrene-Crystalline (Clear) FNAL/NICADD - DOW663-TiO2 Cladding		
Project: Astroparticle Physics Auger		Units: mm	Date: 02/06/2017	Revision: A	
Top folder:SSD Engineering Array (Auger South)		Size: A3	Engineer: A. Korporaal		
Name: Scintillator Type 8 (FNAL-50x10-2holes_Bean Shape)			Checked: A. Korporaal		
Item number: AA9739			Status: Released		
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00683		
This drawing may not be used for commercial purposes without written authorisation.					

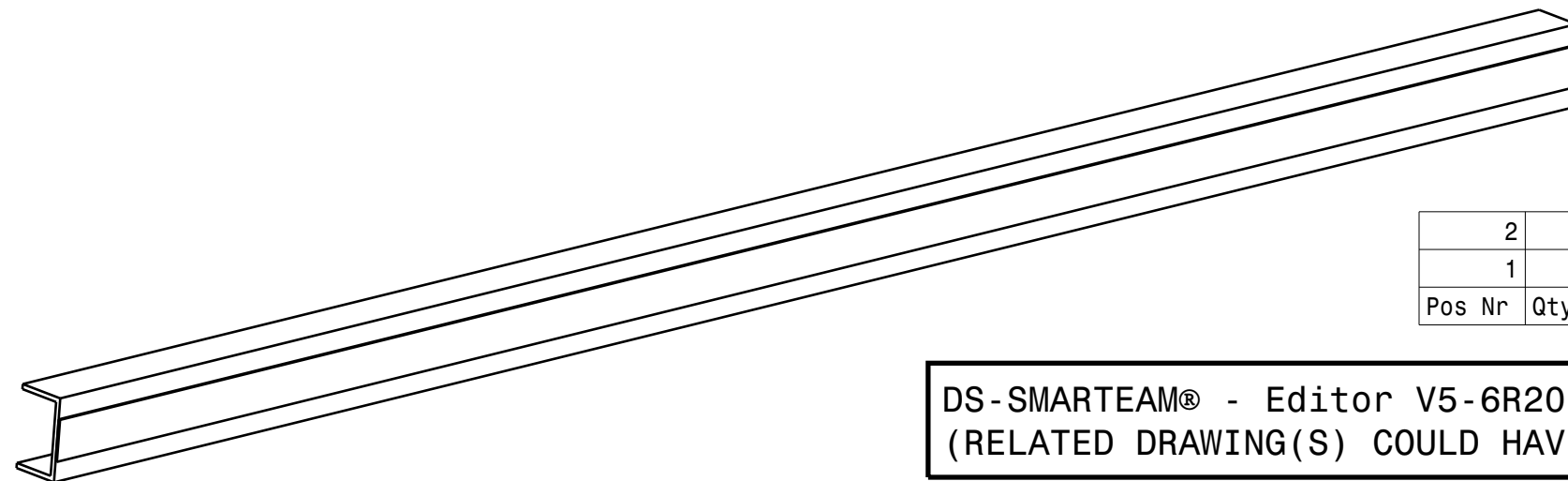




Front view  
Scale: 1:1

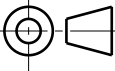


Right view  
Scale: 1:1

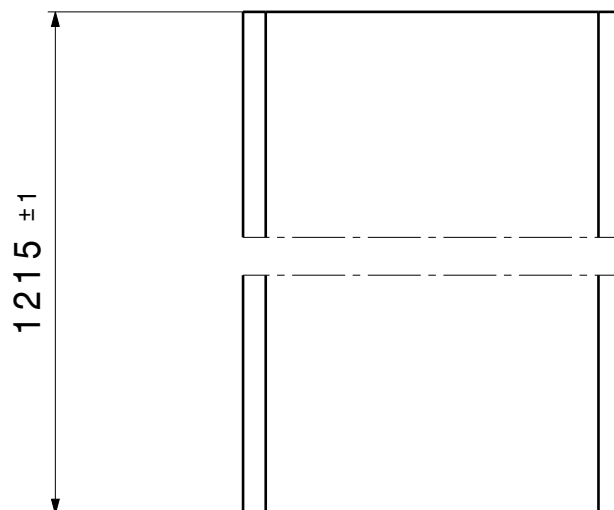


2	1	Foam Tape TESA 4957-25mmx1100mu	AB0258	A
1	1	Crossbeam A (Scintillator Clamp)	AB0256	A
Pos Nr	Qty.	Definition	Item No	Rev

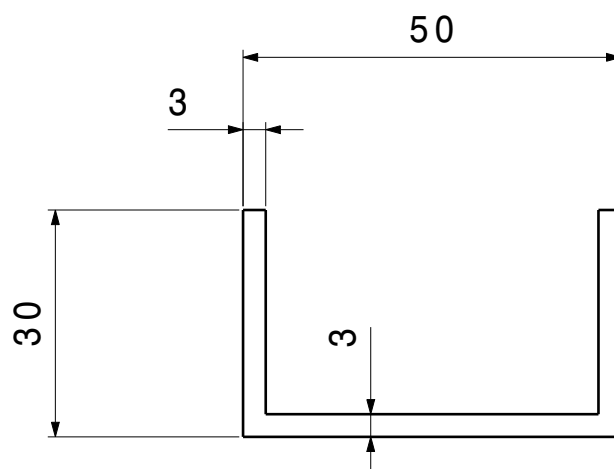
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(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 18/07/2017	Revision: C
		Size: A3	Engineer: A. Korporaal	
Name: Crossbeam A Ass'y (Scintillator Clamp)			Checked: A. Korporaal	
			Item number: AB0257	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam		Nikhef number: 45500-MT-00690		
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
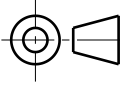


Top view  
Scale: 1:1

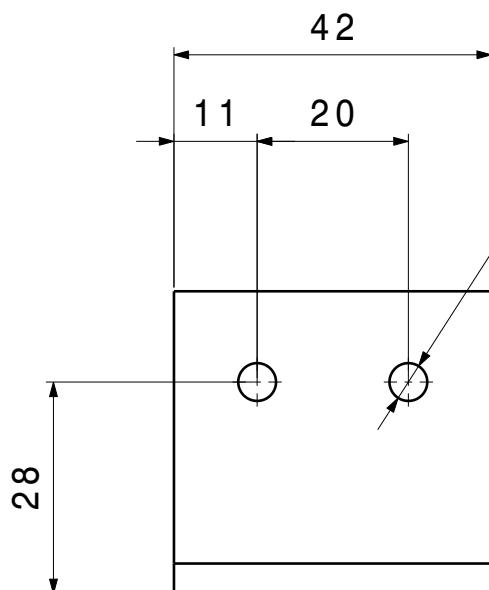


Front view  
Scale: 1:1

SHARP EDGES BROKEN

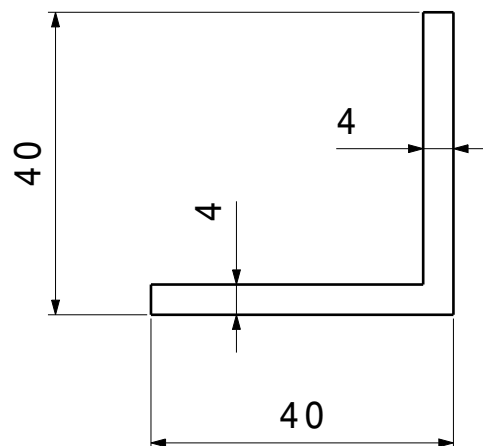
General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 Material: Alum. EN AW-606X	
Project: Astroparticle Physics Auger		Units: mm	Date: 12/06/2017
Top folder:SSD Production		Size: A4	Revision: A
Name: <b>Crossbeam A</b> <b>(Scintillator Clamp)</b>		Engineer: A. Korporaal	
		Checked: A. Korporaal	
		Item number: <b>AB0256</b>	Status: Released
		Nikhef number: <b>45500-MT-00691</b>	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			
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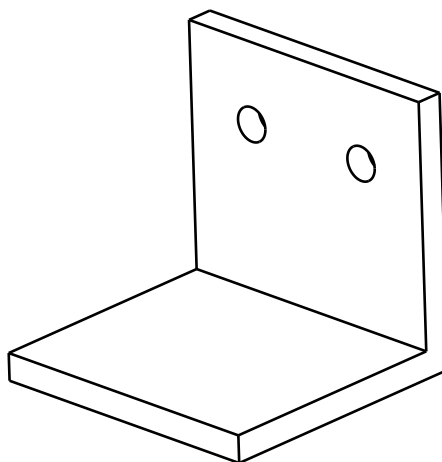


Front view  
Scale: 1:1


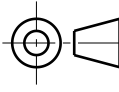
$\varnothing 5H12$  - THRU (2x)



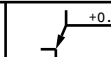
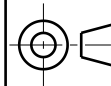
Right view  
Scale: 1:1



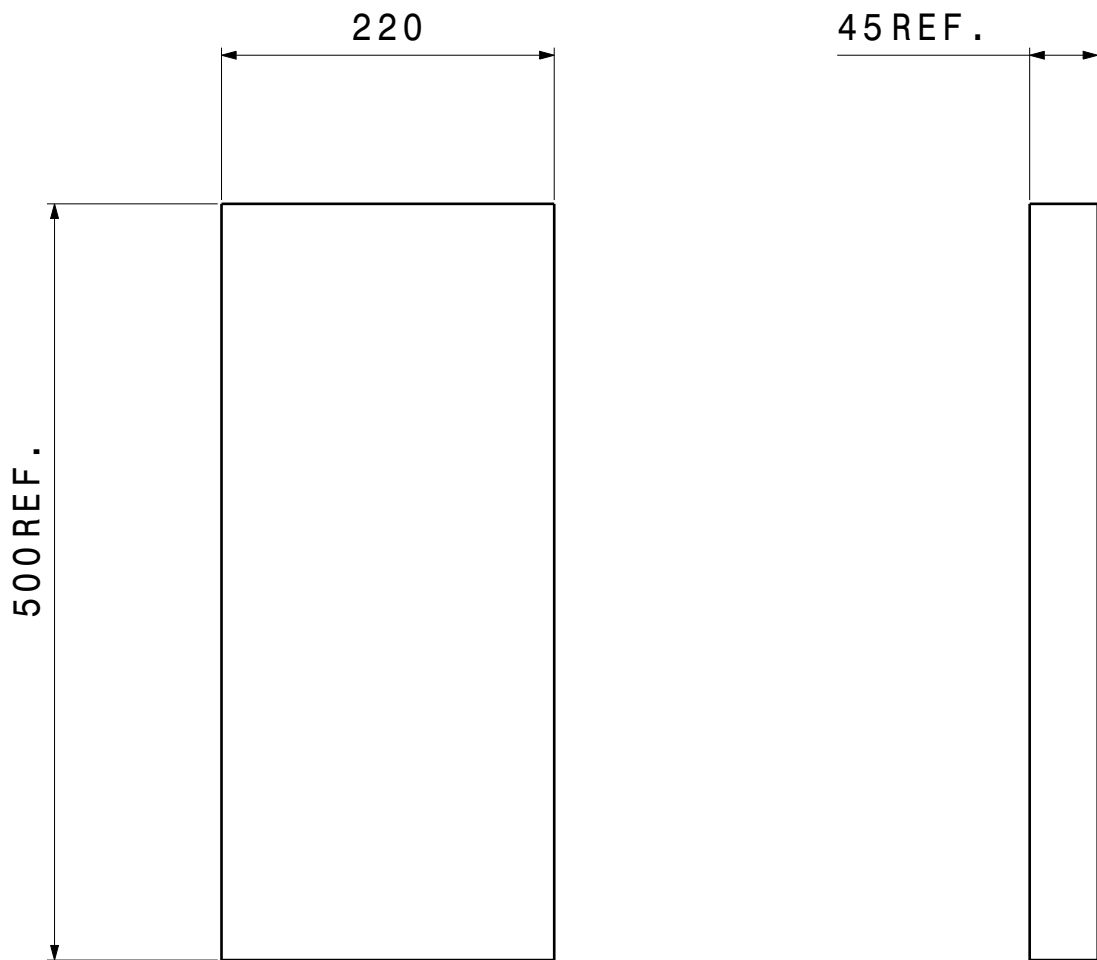
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
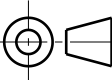
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Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 12/06/2017	Revision: A		
		Size: A4	Engineer: A. Korporaal			
Name: <b>Bracket A</b>  <b>(Scintillator Clamp)</b>			Checked: A. Korporaal			
			Item number: <b>AB0255</b>	Status: Released		
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: <b>45500-MT-00692</b>			
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1000 REF.

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material: Styropor EPS 040-DES; Dims.1000x500;Thickn. 45mm	
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 27/07/2017		Revision: C
		Size: A4	Engineer: A. Korporaal		
Name:  EPS_Plate_1000x500x45mm			Checked: A. Korporaal		
			Item number: AB0291	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00693		
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General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: Styropor EPS 040-DES; Dims.1000x500;Thickn. 45mm	
Project: Astroparticle Physics Auger		Units: mm	Date: 27/07/2017	Revision: B
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal	
Name:			Checked: A. Korporaal	
EPS_Plate_220x500x45mm			Item number: AB0292	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00695	
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1000 REF.

220

45 REF.

Front view  
Scale: 1:5

Right view  
Scale: 1:5

General tolerances unless otherwise stated according to :ISO-2768-mK-E  
Geometrical tolerances unless otherwise stated according to:ISO-8015-E  
Roughness unless otherwise stated according to :ISO-1302



Material: Styropor EPS 040-DES;  
Dims.1000x500;Thickn. 45mm

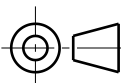
Project: Astroparticle Physics Auger  
Top folder:SSD Production

Units: mm  
Size: A4

Date: 27/07/2017 Revision: B  
Engineer: A. Korporaal

Name:

EPS\_Plate\_1000x220x45mm



Checked: A. Korporaal

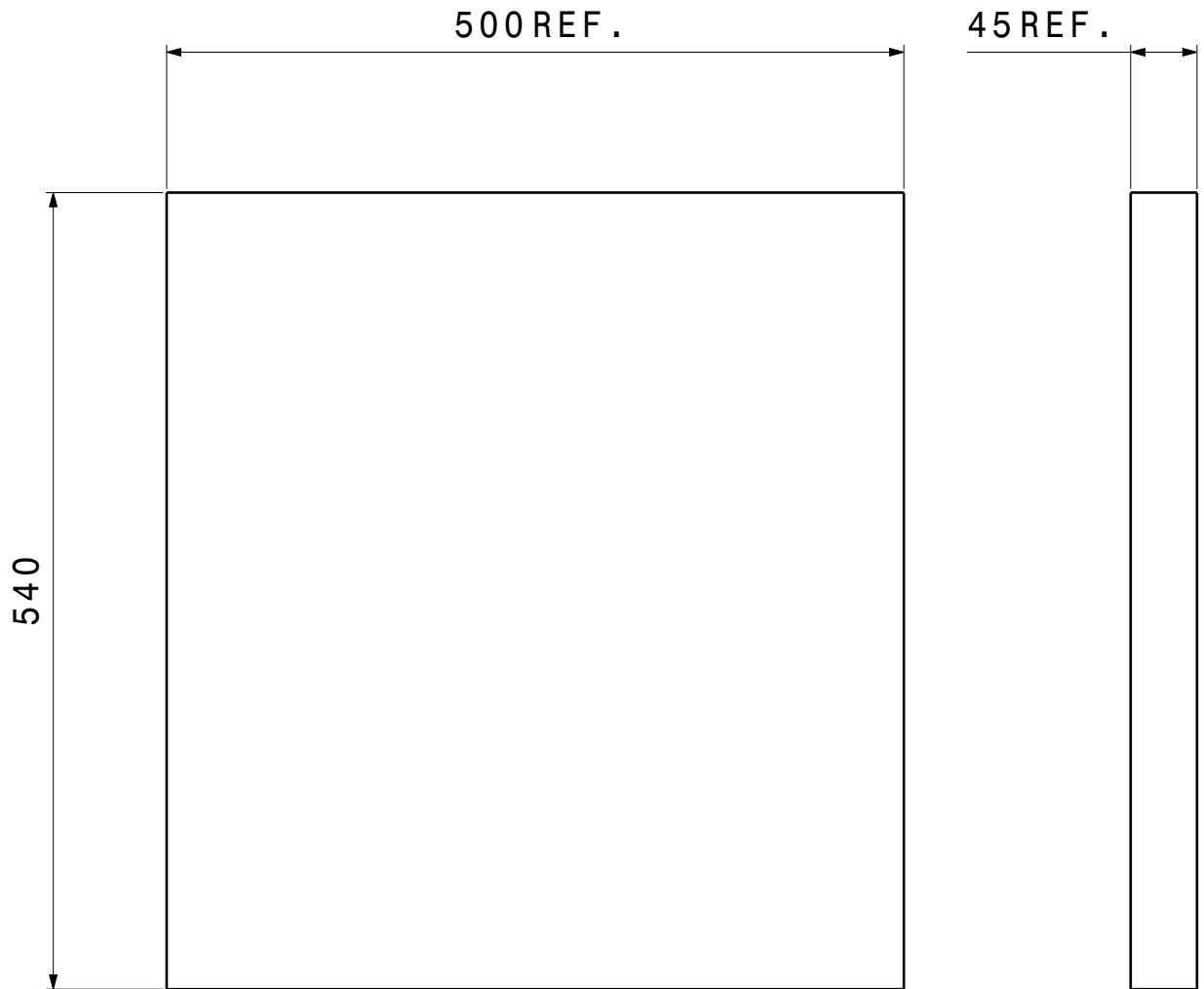
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
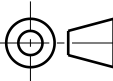
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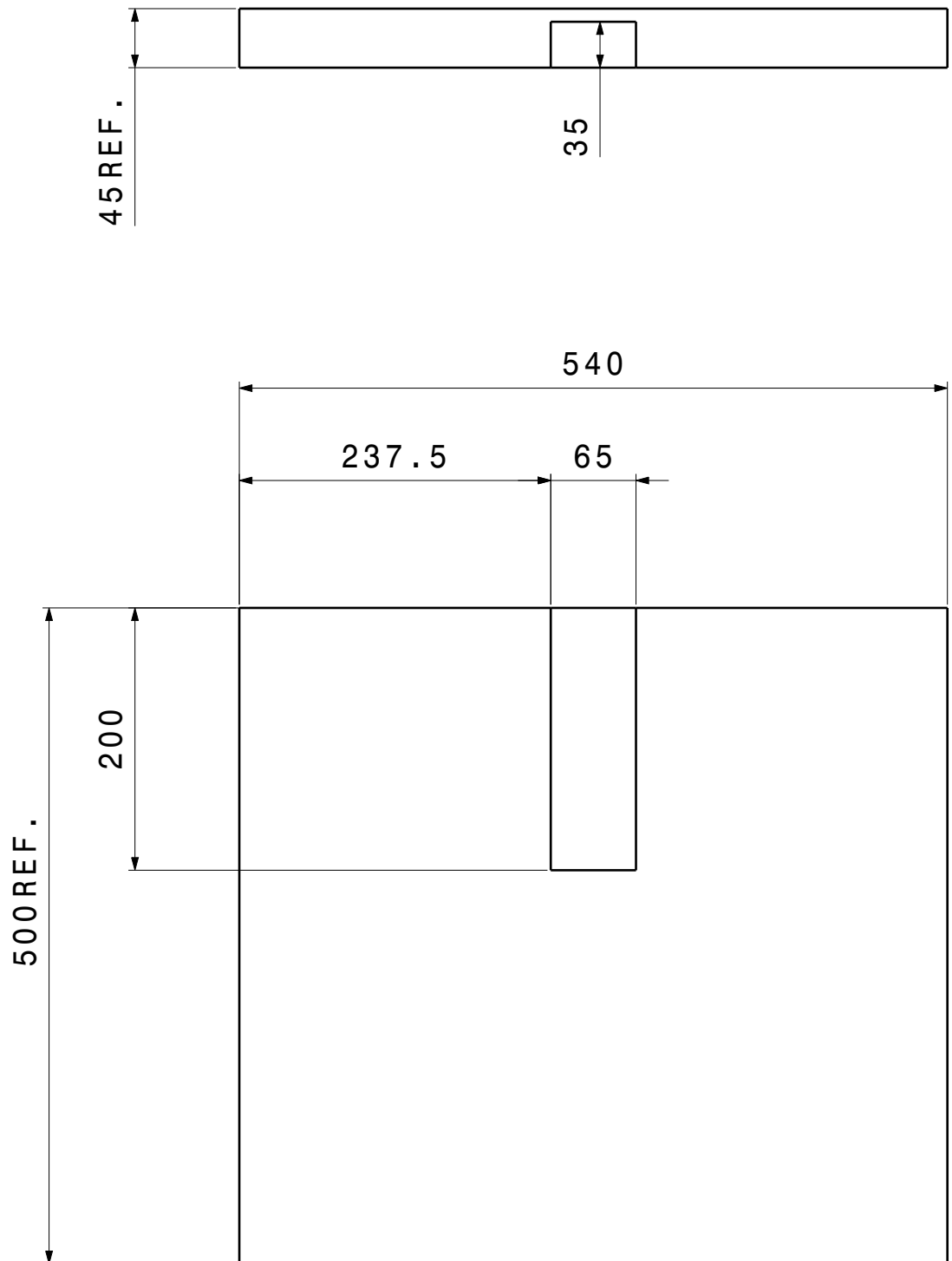
National Institute for  
Subatomic Physics  
Science Park 105, 1098XG Amsterdam


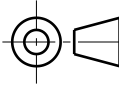
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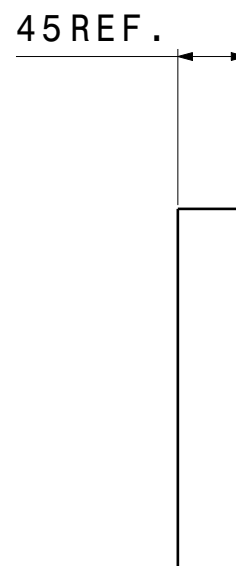
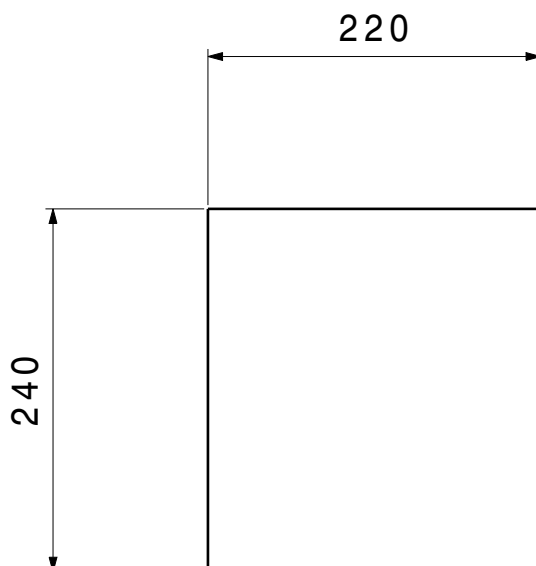



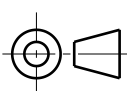
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Project: Astroparticle Physics Auger		Units: mm	Date: 27/07/2017	Revision: B
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal	
Name:			Checked: A. Korporaal	
EPS Plate 540x500x45mm			Item number: AB0294	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00696	
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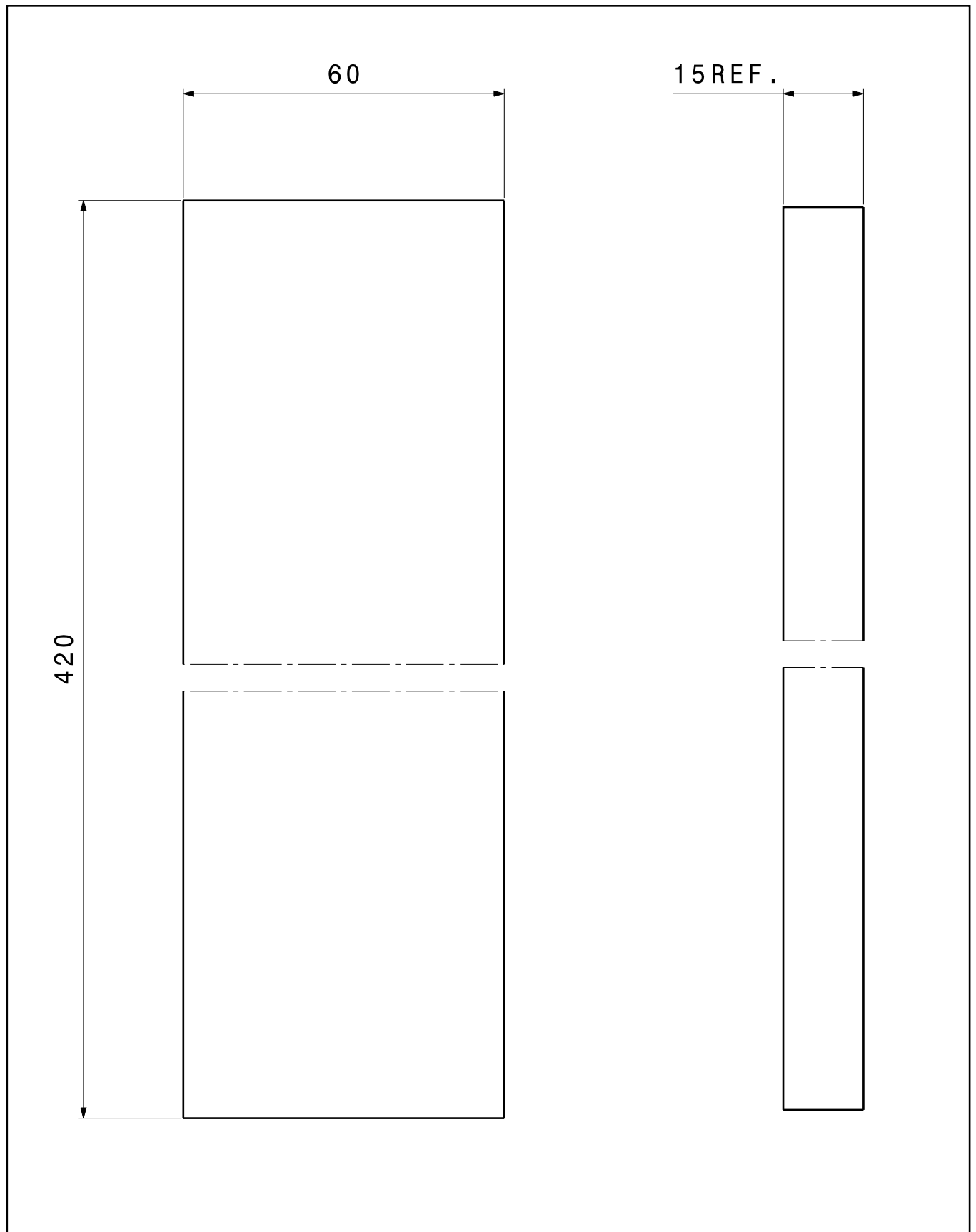


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Project: Astroparticle Physics Auger Top folder:SSD Production		Units: mm	Date: 27/07/2017	Revision: B
		Size: A4	Engineer: A. Korporaal	
Name: EPS Plate 540x500x45mm (Fiber Cookie)			Checked: A. Korporaal	
			Item number: AB0295	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00697	
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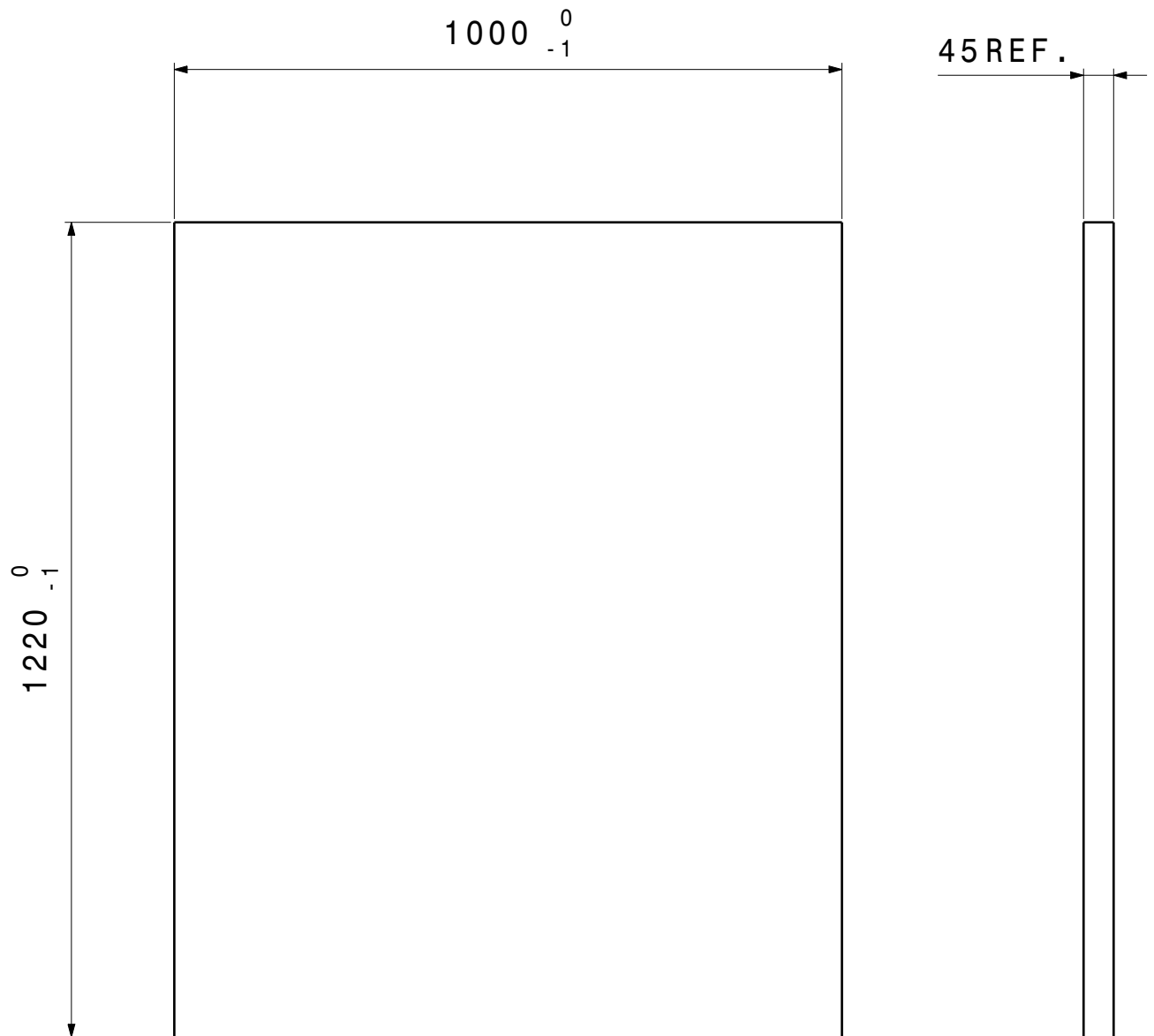


General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 +0.1		Material: Styropor EPS 040-DES; Dims.1000x500;Thickn. 45mm	
Project: Astroparticle Physics Auger		Units: mm	Date: 27/07/2017	Revision: B	
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal		
Name:  EPS Plate 240x220x45mm			Checked: A. Korporaal		
			Item number: AB0296	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00698		
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
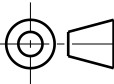
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Project: Astroparticle Physics Auger Top folder:SSD Production		Units: mm Size: A4	Date: 31/10/2017 Engineer: A. Korporaal	Revision: A
Name: <b>EPS Plate 420x60x15mm (Center Part TOP)</b>			Checked: A. Korporaal Item number: <b>AB0341</b>	Status: <b>Released</b>
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: <b>45500-MT-00781</b>	
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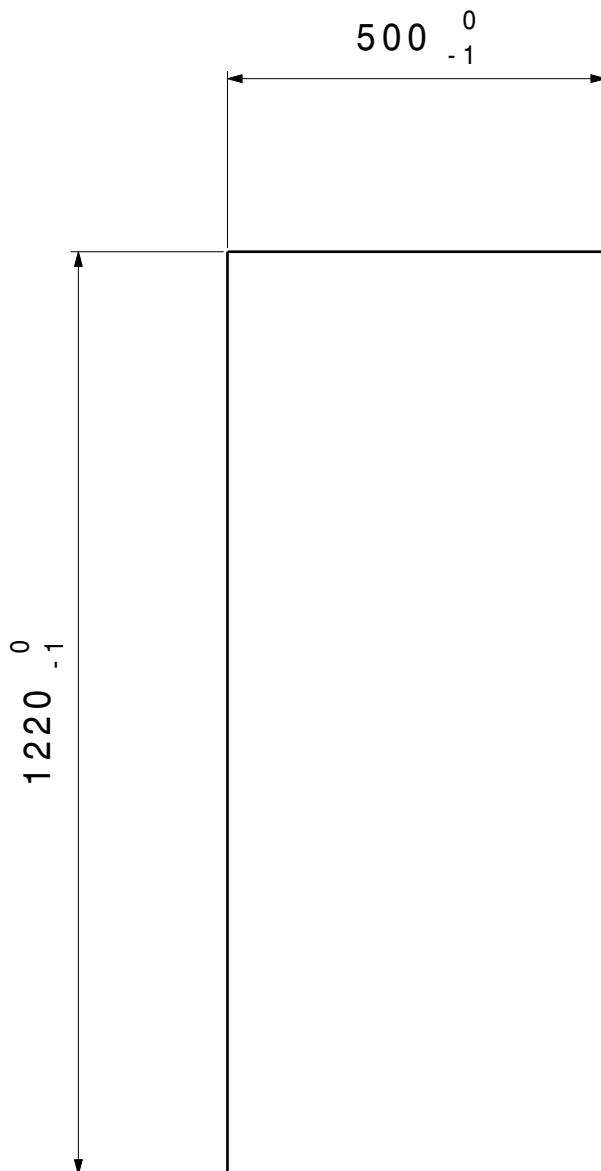




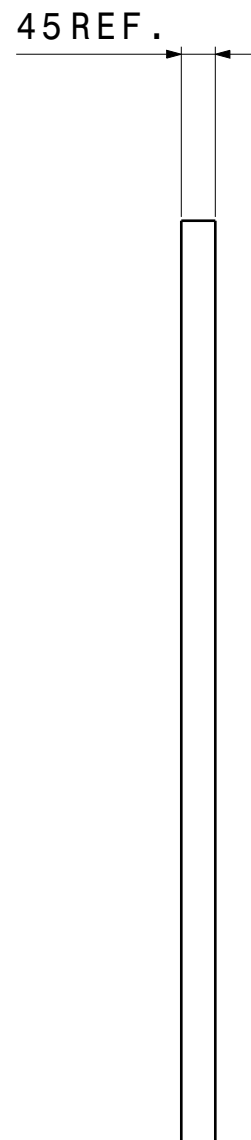
Front view  
Scale: 1:10

Right view  
Scale: 1:10

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material: <b>Styropor EPS 040-DES;Thickness 45mm</b>	
Project: Astroparticle Physics Auger		Units: mm	Date: 27/10/2017		Revision: A
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal		
Name:			Checked: A. Korporaal		
EPS_Plate_1220x1000x45mm			Item number: <b>AB0338</b>	Status: <b>Released</b>	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: <b>45500-MT-00775</b>		
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Front view  
Scale: 1:10



Right view  
Scale: 1:10

General tolerances unless otherwise stated according to :ISO-2768-mK-E  
Geometrical tolerances unless otherwise stated according to:ISO-8015-E  
Roughness unless otherwise stated according to :ISO-1302



Material:

Styropor EPS 040-DES;Thickness 45mm

Project: Astroparticle Physics Auger

Units: mm

Date: 27/10/2017

Revision: A

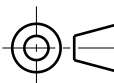
Top folder:SSD Production

Size: A4

Engineer: A. Korporaal

Name:

EPS\_Plate\_1220x500x45mm



Checked: A. Korporaal

Item number:  
AB0339

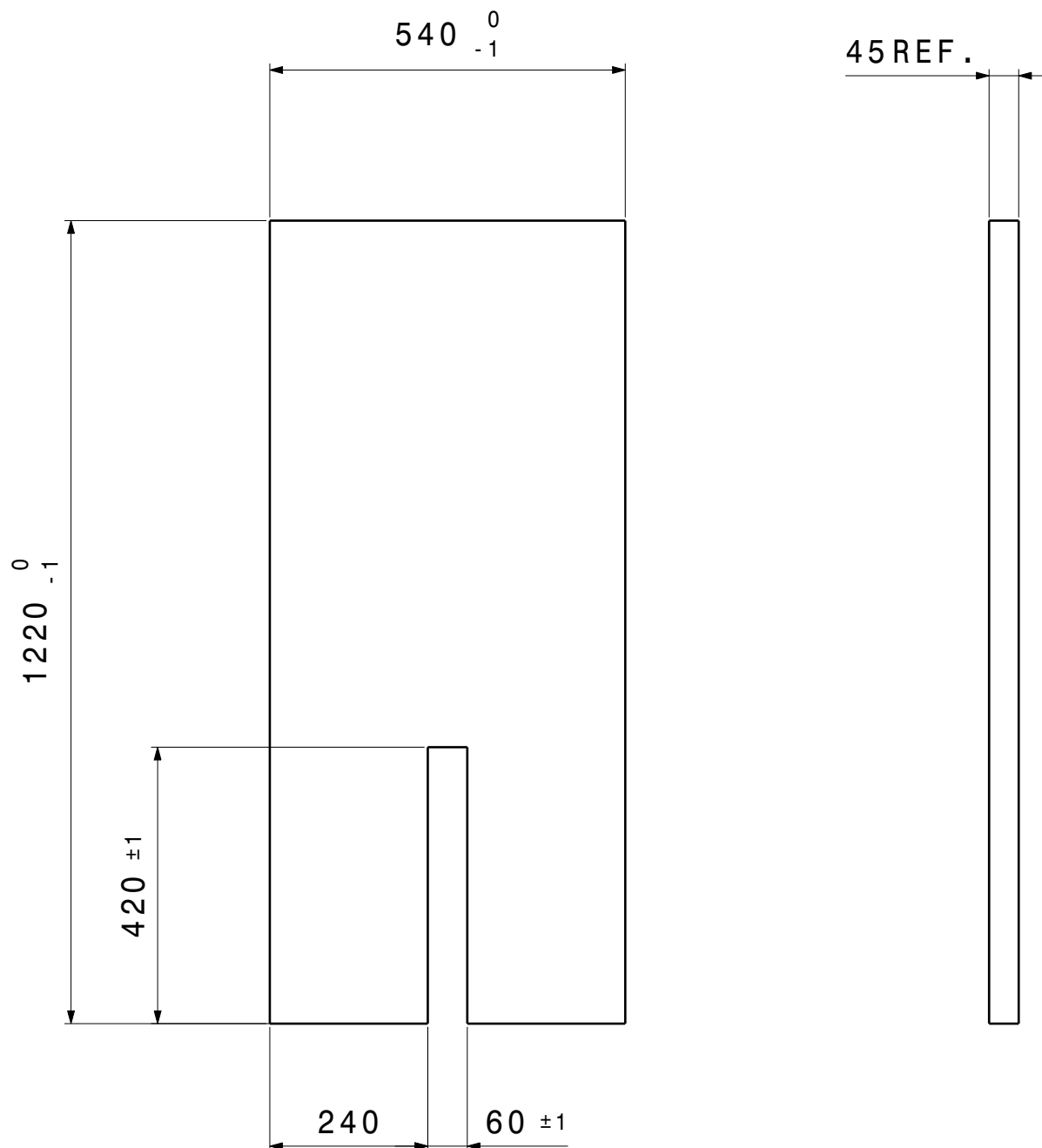
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Science Park 105, 1098XG Amsterdam

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
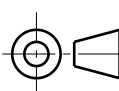
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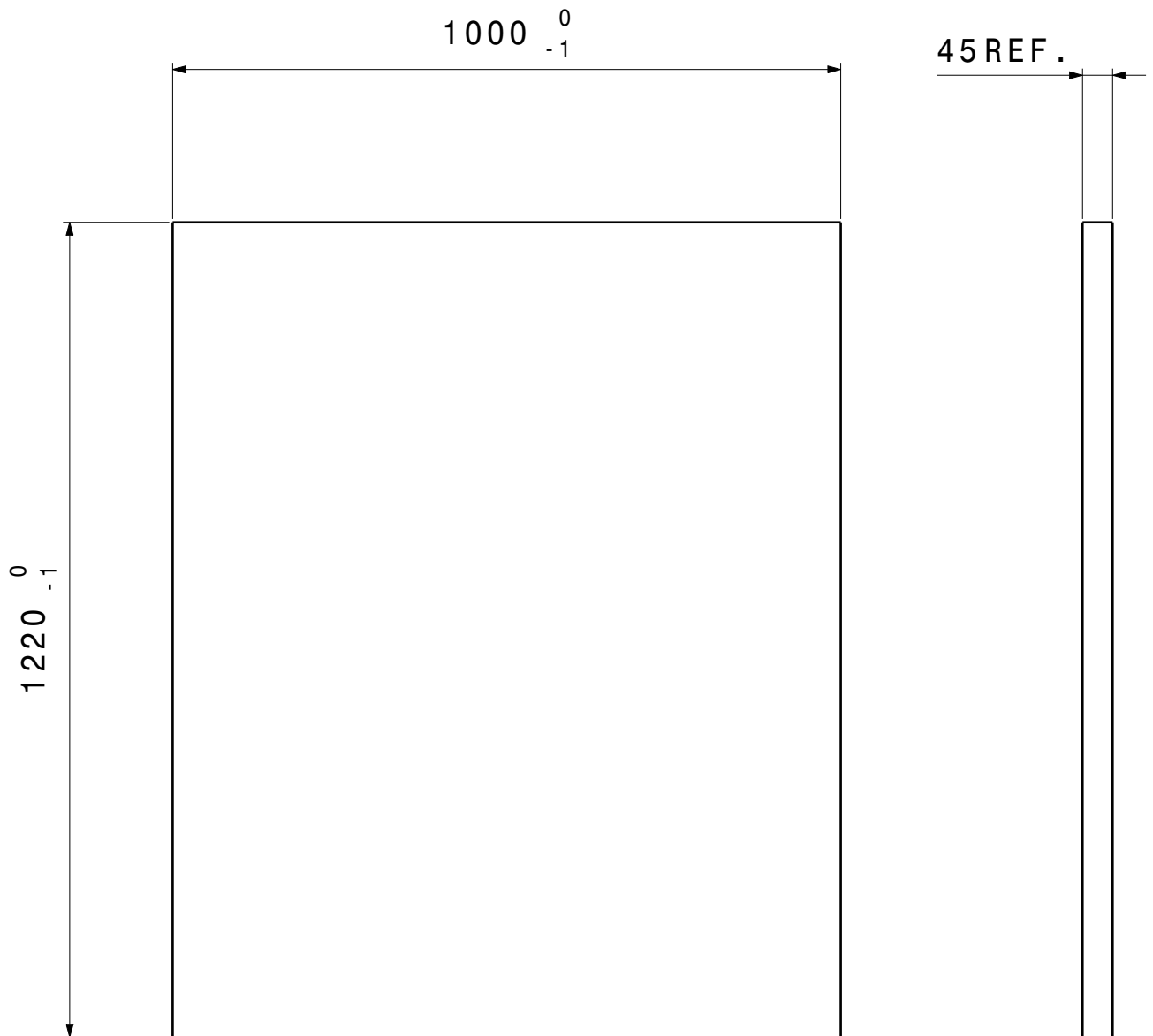




Front view  
Scale: 1:10


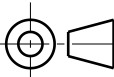
Right view  
Scale: 1:10

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: Styropor EPS 040-DES;Thickness 45mm	
Project: Astroparticle Physics Auger		Units: mm	Date: 02/11/2017	Revision: B
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal	
Name:EPS_Plate_1220x540x45mm (Central Part)			Checked: A. Korporaal	
			Item number: AB0340	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00778	
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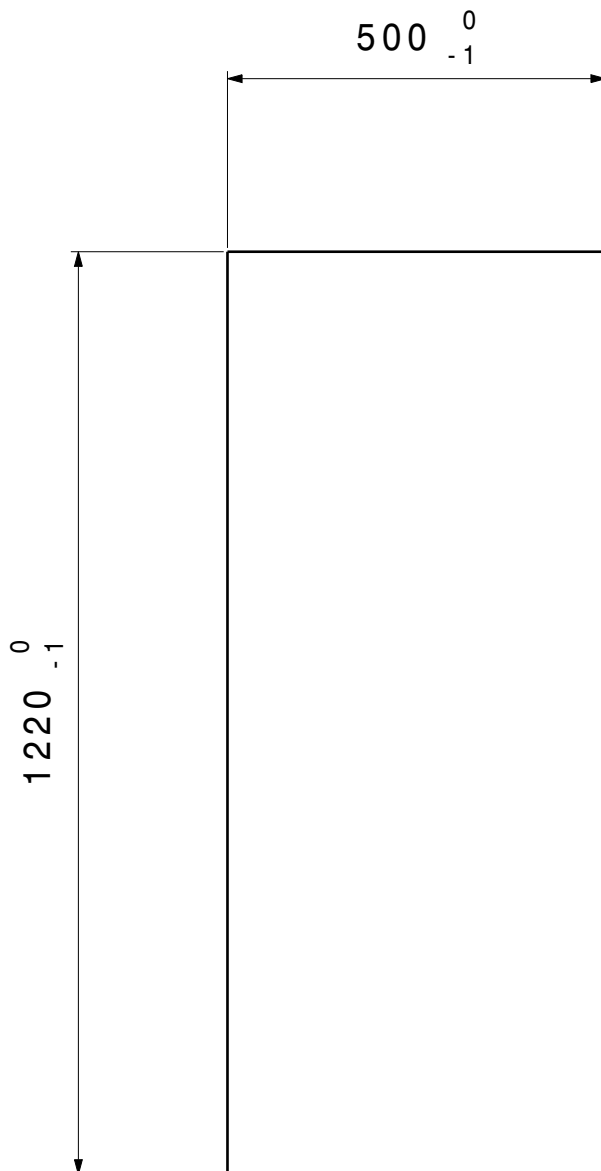


Front view  
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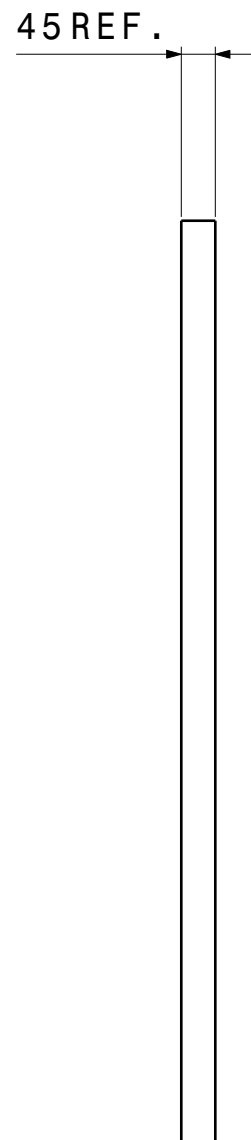
Right view  
Scale: 1:10

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: <b>Styropor EPS 040-DES;Thickness 45mm</b>	
Project: Astroparticle Physics Auger		Units: mm	Date: 27/10/2017	Revision: A
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal	
Name:			Checked: A. Korporaal	
EPS_Plate_1220x1000x45mm			Item number: <b>AB0338</b>	Status: <b>Released</b>
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: <b>45500-MT-00775</b>	
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Front view  
Scale: 1:10



Right view  
Scale: 1:10

General tolerances unless otherwise stated according to :ISO-2768-mK-E  
Geometrical tolerances unless otherwise stated according to:ISO-8015-E  
Roughness unless otherwise stated according to :ISO-1302



Material:

Styropor EPS 040-DES;Thickness 45mm

Project: Astroparticle Physics Auger

Units: mm

Date: 27/10/2017

Revision: A

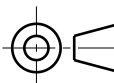
Top folder:SSD Production

Size: A4

Engineer: A. Korporaal

Name:

EPS\_Plate\_1220x500x45mm



Checked: A. Korporaal

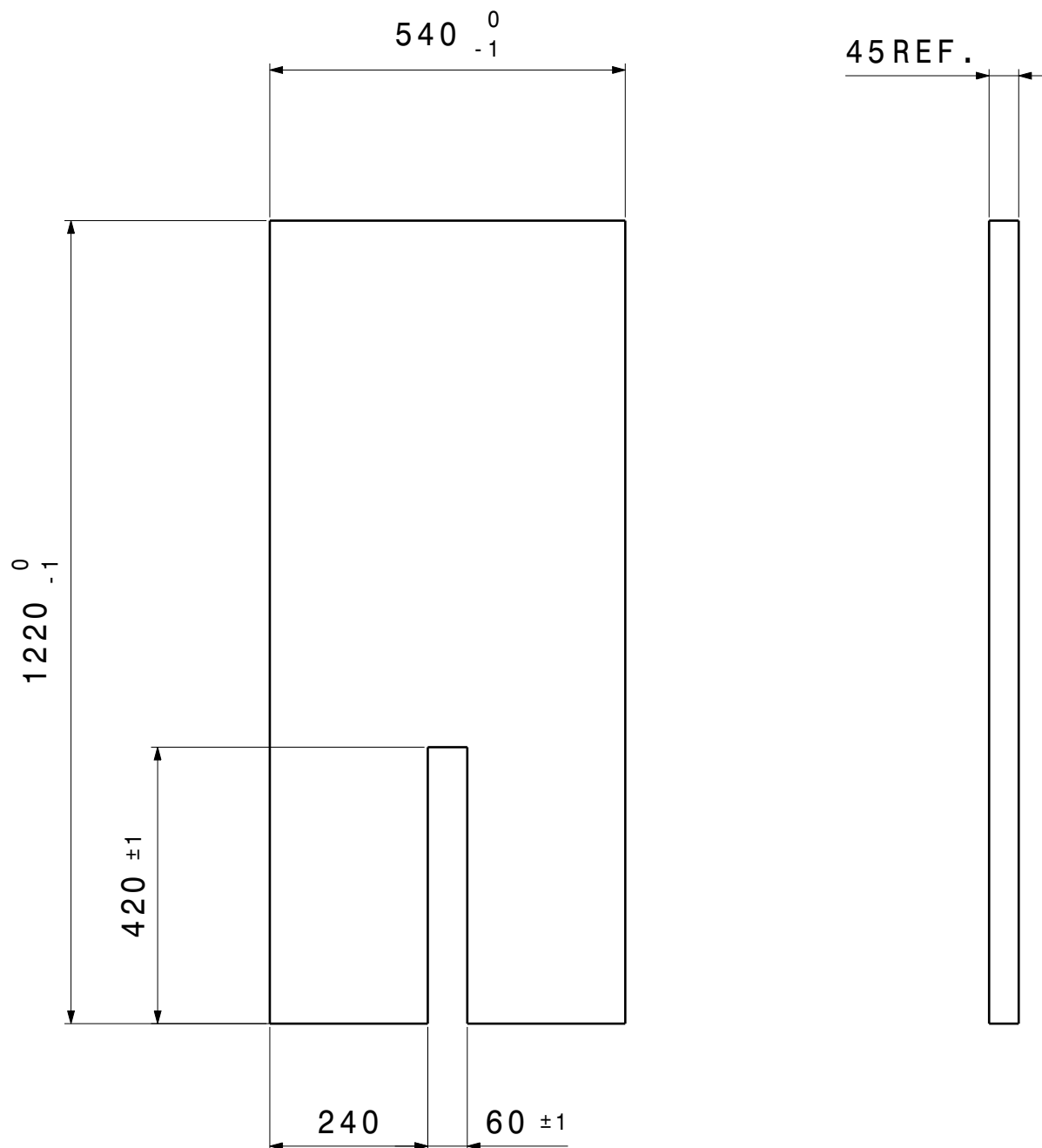
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Status:  
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National Institute for  
Subatomic Physics  
Science Park 105, 1098XG Amsterdam


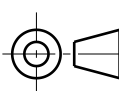
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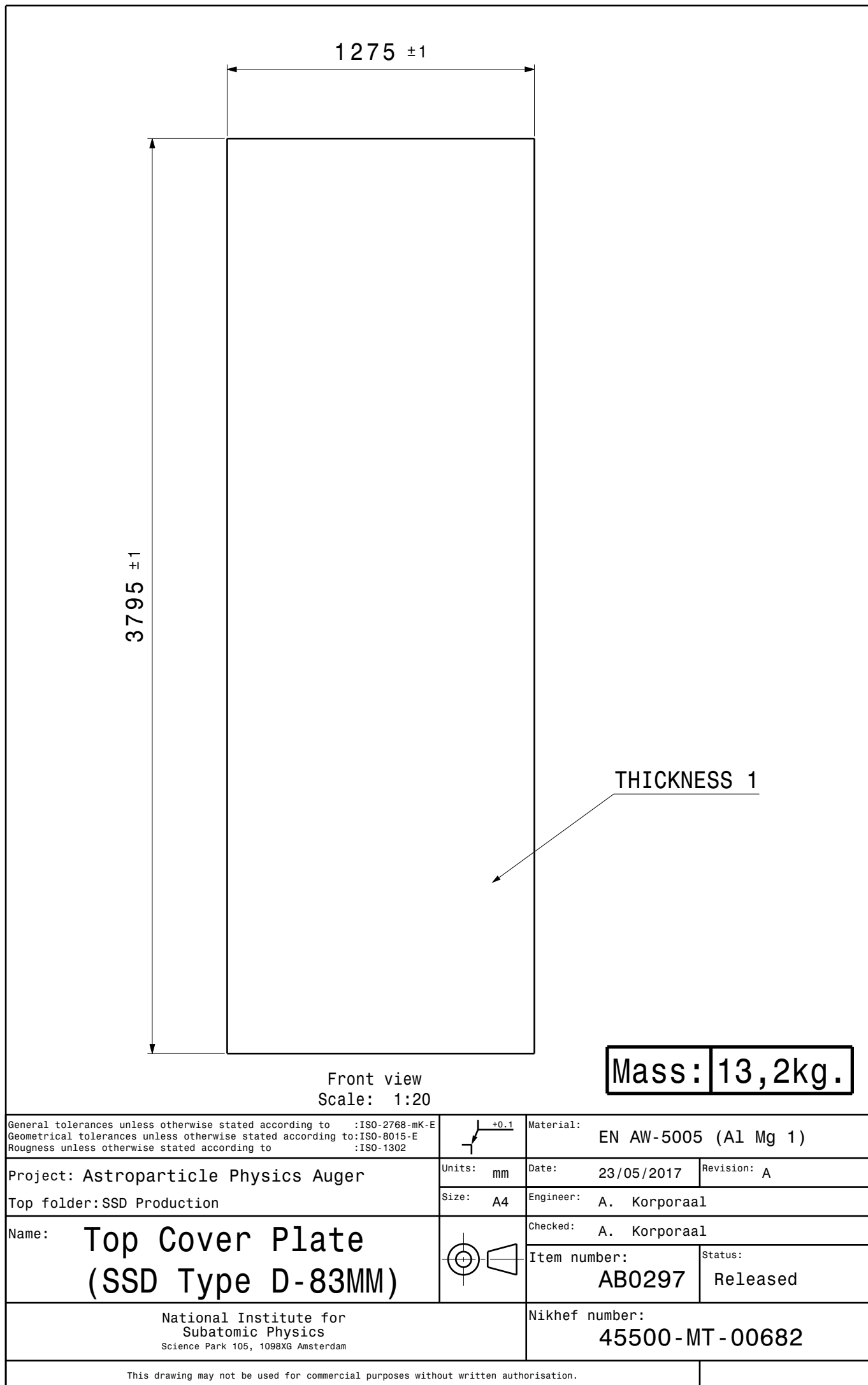


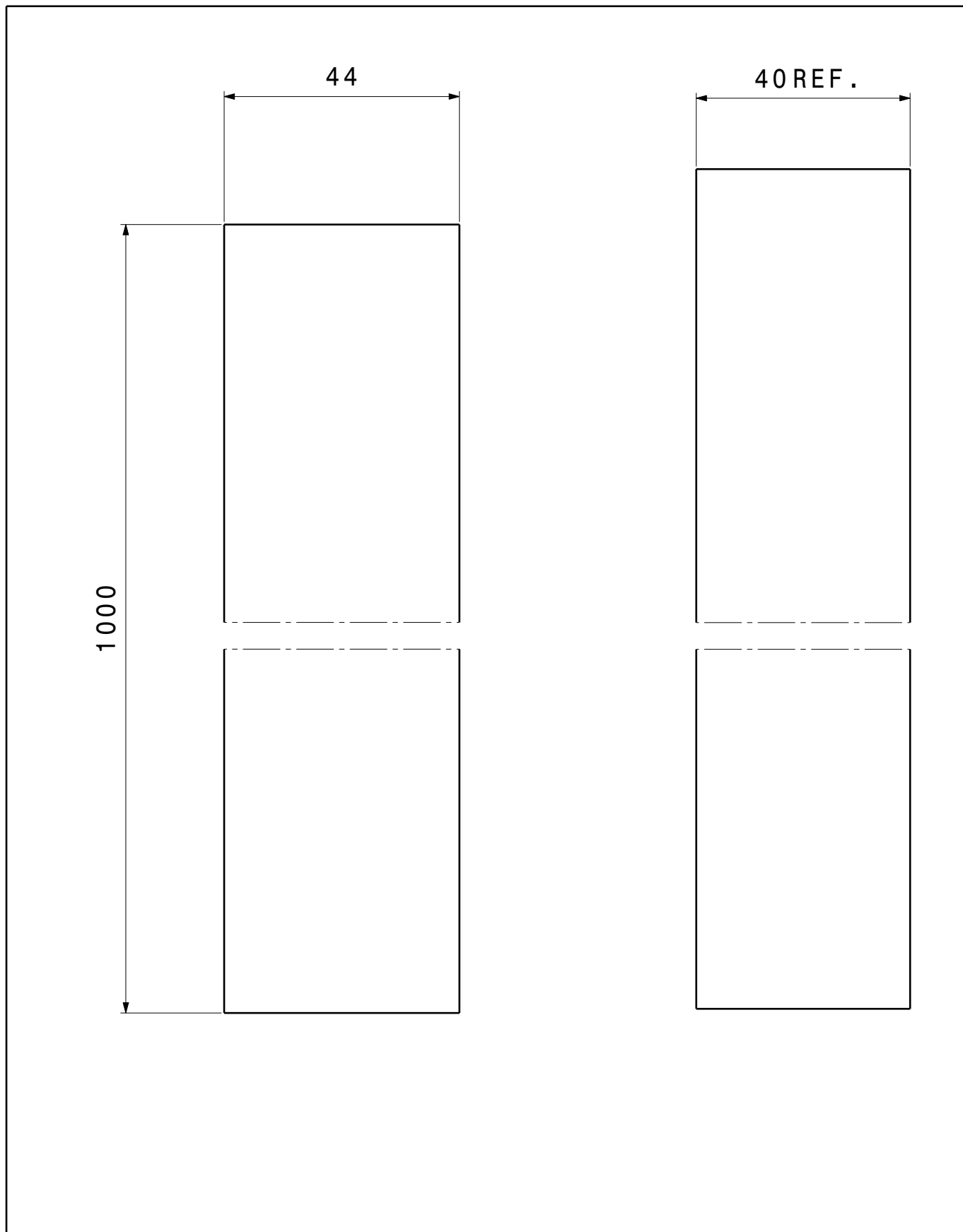
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
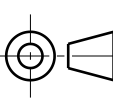
Right view  
Scale: 1:10

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 +0.1 Material: Styropor EPS 040-DES;Thickness 45mm		
Project: Astroparticle Physics Auger		Units: mm	Date: 02/11/2017	Revision: B
Top folder:SSD Production		Size: A4	Engineer: A. Korporaal	
Name: EPS_Plate_1220x540x45mm (Central Part)			Checked: A. Korporaal	
			Item number: AB0340	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00778	
This drawing may not be used for commercial purposes without written authorisation.				

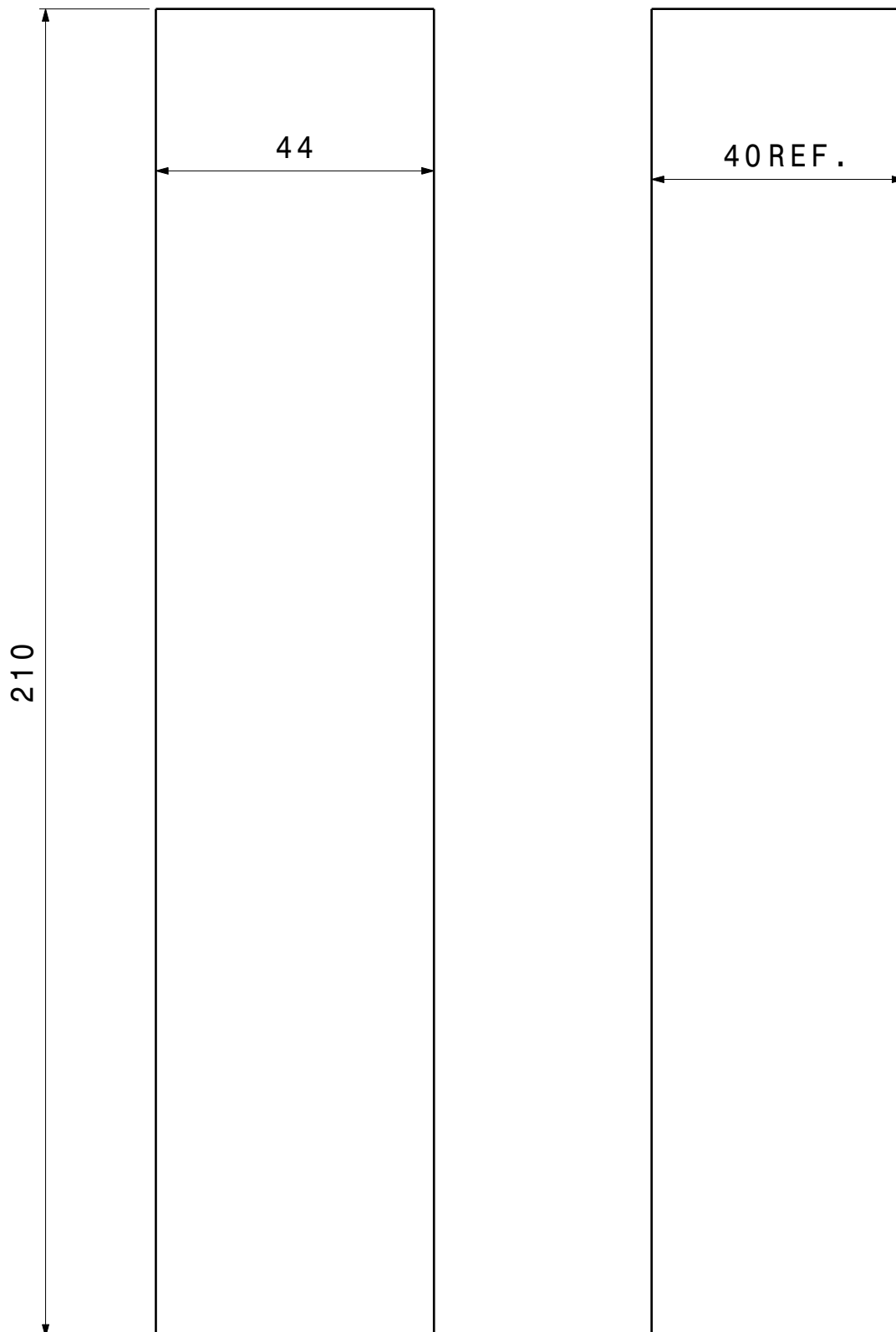



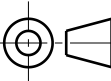


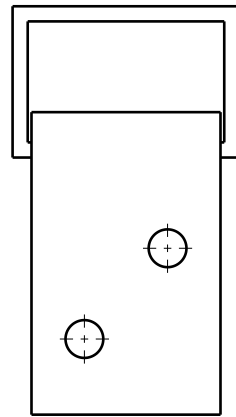


General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302		 +0.1		Material: EPS Foam 40mm	
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 02/06/2017	Revision: A	
		Size: A4	Engineer: A. Korporaal		
Name:  EPS Plate1000x44x40mm			Checked: A. Korporaal		
			Item number: AB0298	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00699		
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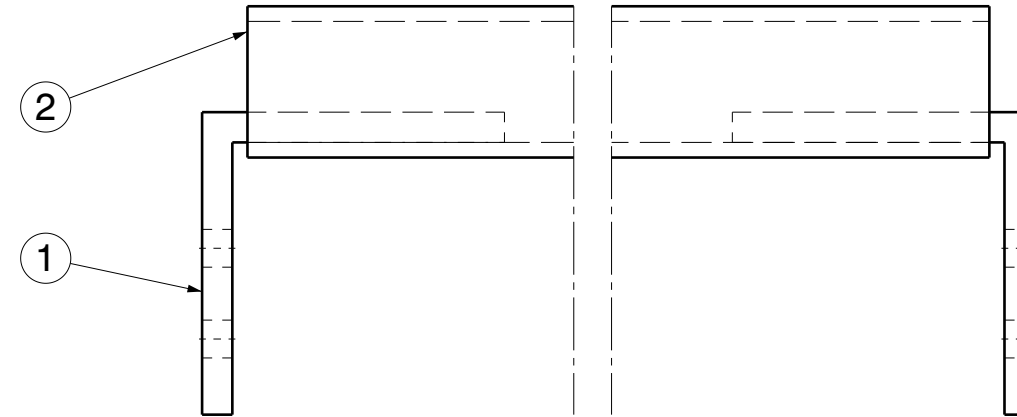




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		Size: A4	Engineer: A. Korporaal		
Name:  EPS Plate 210x44x40mm			Checked: A. Korporaal		
			Item number: AB0299	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00783		
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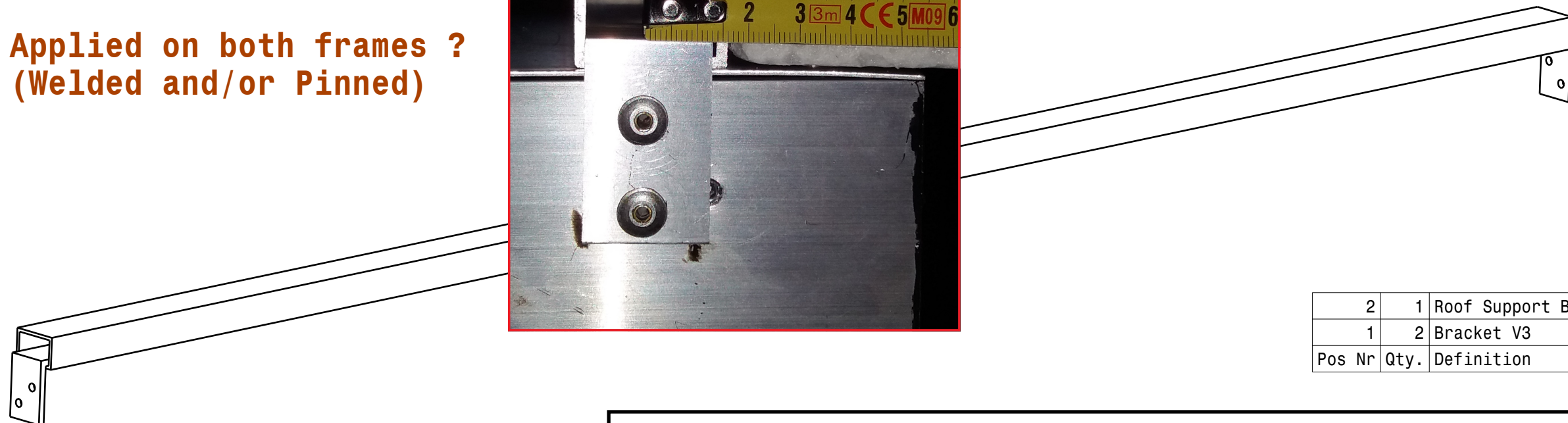
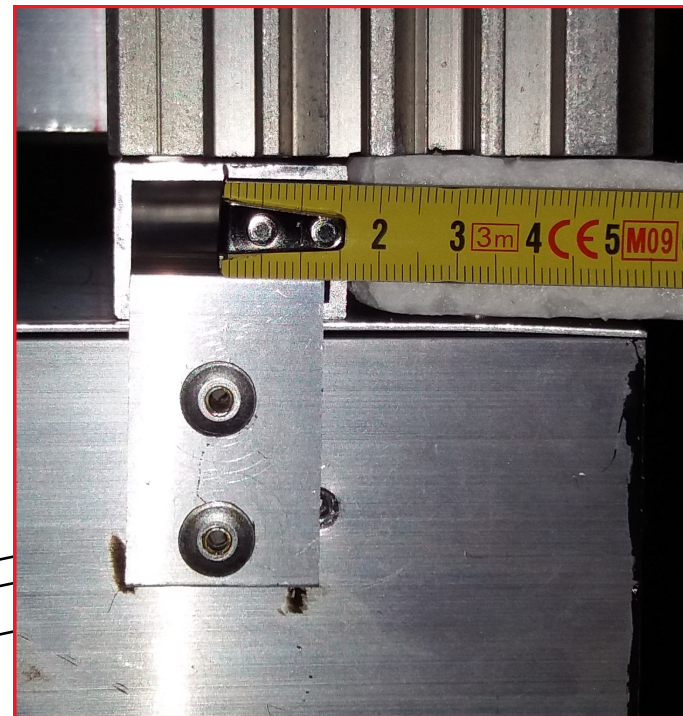


Left view  
Scale: 1:1



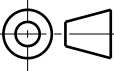
Front view  
Scale: 1:1

Applied on both frames ?  
(Welded and/or Pinned)

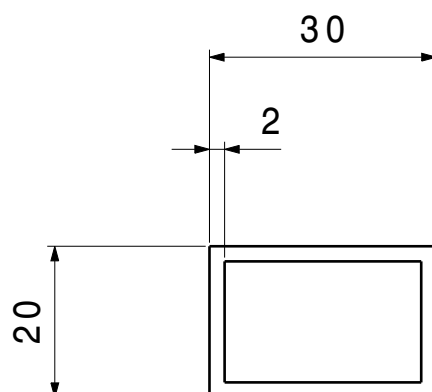
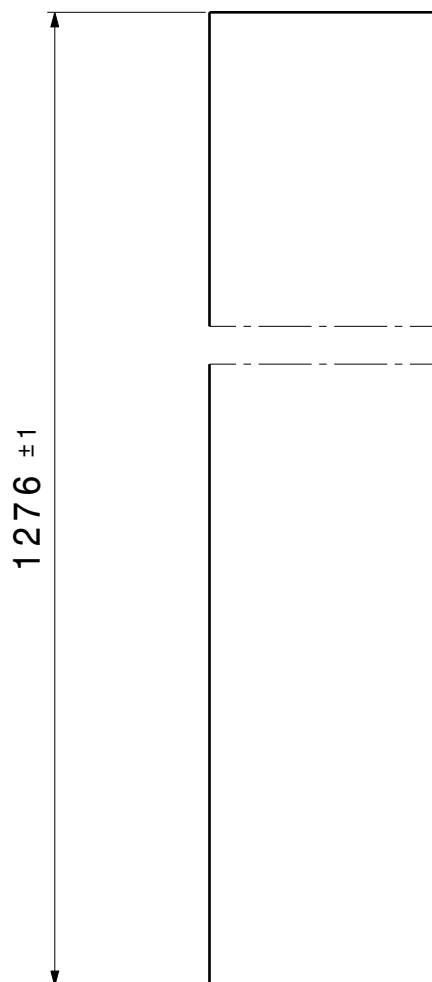



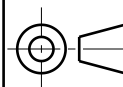
2	1	Roof Support Beam	AB0307	A
1	2	Bracket V3	AB0308	A
Pos Nr	Qty.	Definition	Item No	Rev

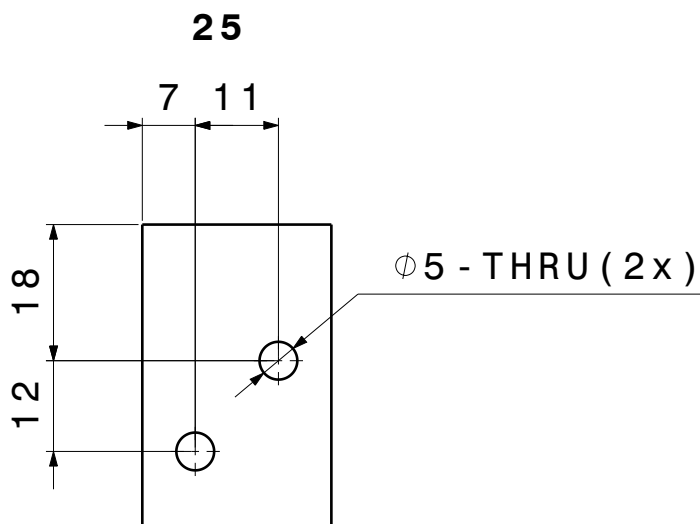
DS-SMARTEAM®-Editor V5-6R2015 Service Pack 3 Product/Part Revision  
(RELATED DRAWING(S) COULD HAVE DIFFERENT REVISION(S) !

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 12/07/2017	Revision: C
		Size: A3	Engineer: A. Korporaal	
Name: Roof Support Ass'y (SSD Production)			Checked: A. Korporaal	
			Item number: AB0309	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam		Nikhef number: 45500-MT-00708		
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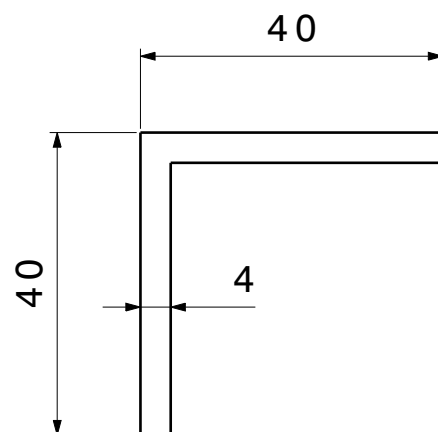




General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302				Material: Alum. EN AW-60XX	
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 09/06/2017		Revision: A
		Size: A4	Engineer: A. Korporaal		
Name:  Roof Support Beam			Checked: A. Korporaal		
			Item number: AB0307	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00710		
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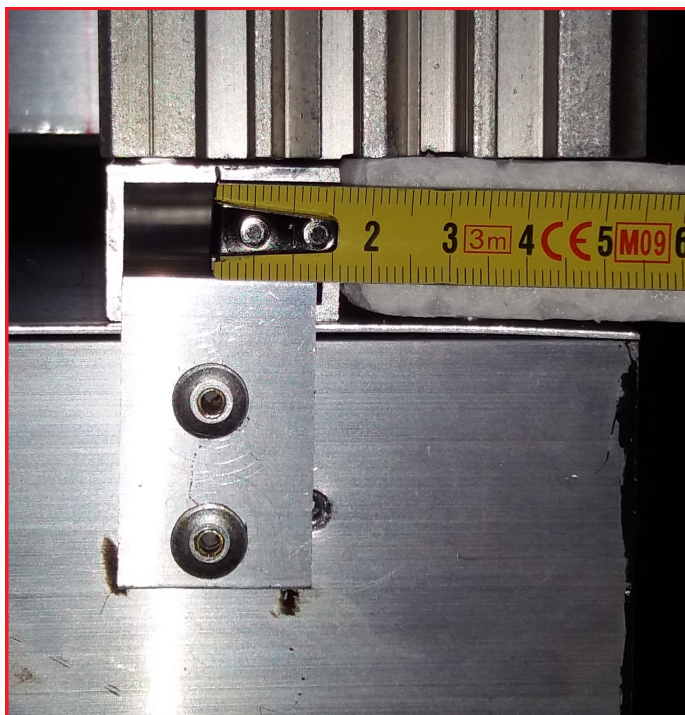



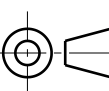
Front view  
Scale: 1:1



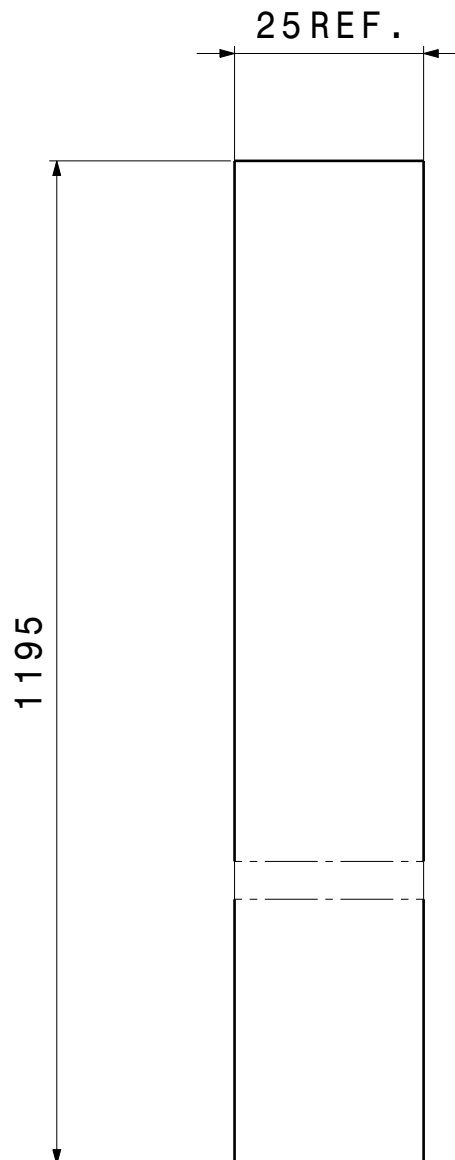
Right view  
Scale: 1:1

10


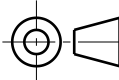


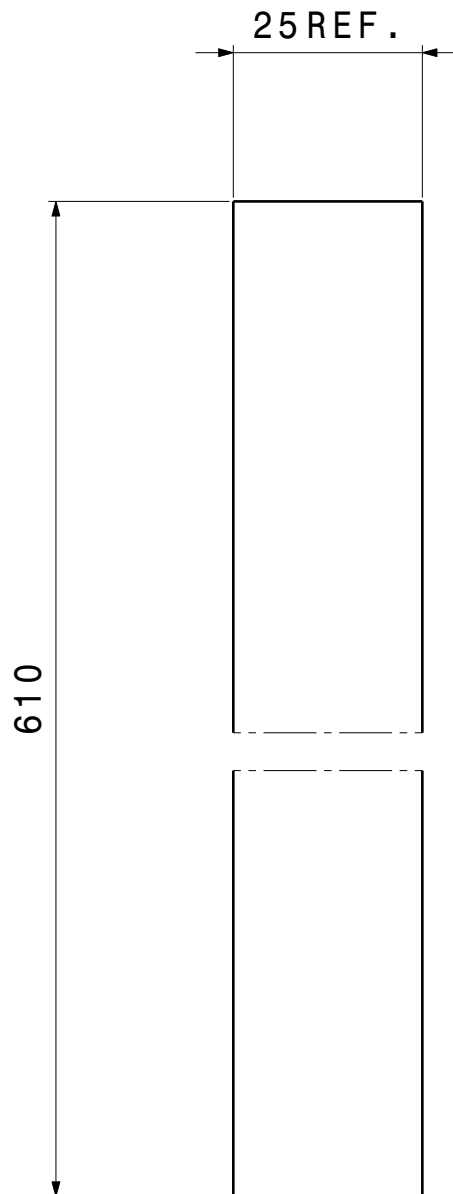
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Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 09/06/2017	Revision: A	
		Size: A4	Engineer: A. Korporaal		
Name:  Bracket V3			Checked: A. Korporaal		
			Item number: AB0308	Status: Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00709		
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
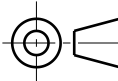





Front view  
Scale: 1:1

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: TESA 4970-25x0.24mm	
Project: Astroparticle Physics Auger Top folder:SSD Production		Units: mm	Date: 21/06/2017	Revision: A
		Size: A4	Engineer: A. Korporaal	
Name: Double sided tape L1 (TESA 4970-25mm)			Checked: A. Korporaal	
			Item number: AB0310	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00716	
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General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			+0.1	Material: TESA 4970-25x0.24mm			
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units:	mm	Date:	21/06/2017	Revision:	A
		Size:	A4	Engineer:	A. Korporaal		
Name:Double sided tape L2  (TESA 4970-25mm)				Checked:			A. Korporaal
				Item number:		Status:	
				AB0311		Released	
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam				Nikhef number:			45500-MT-00717
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	<b>Assembly steps</b>  <b>SSD Production</b>		
Nikhef number:  <b>45361-ME-00408</b>	Item number:  <b>AB0276</b>	Date: <b>09/05/2017</b>	Page: <b>1 of 4</b>
		Status: In Work	Revision: A
Project: <b>Astroparticle Physics Auger</b>			
Department: <b>Mechanical Engineering</b>		Top folder: <b>SSD Production</b>	

## Description

This document describes the necessary actions and instructions to successfully assemble an SSD.

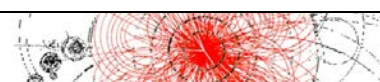
The information in this document is part of the engineering documents and together form the necessary information.

The information has been generated based on a small series production occupied by the engineering array built in the first quarter of 2017 and is operational now on the pampa near Malargue. It is based on experience of the Auger group of **KIT** (Karlsruher Institute of Technology Campus Nord Eggenstein-Leopoldshafen Germany)



## Part 1: SSD Housing assembly steps

Created by: A.Korporaal	Checked by: .....	Approved by: .....
Distribution list:		



***HISTORY OF CHANGES***

<i>Rev. No.</i>	<i>Date</i>	<i>Pages</i>	<i>Description of changes</i>



### **SSD Housing assembly steps:**

- 1. Drill 2 holes in each frame beam using a template,**
- 2. Clean the holes inside with a sand paper and then with alcohol,**
- 3. Prepare a table (or a support) for assembling the frame (e.g. clamps),**
- 4. Put glue inside one long beam,**
- 5. Insert a corner to each end of the long beam,**
- 6. Put glue to one side of each small beam and plug to the corners in the long beam (together these three beams make a U structure),**
- 7. Prepare the second long beam (i.e. glue and then corner inserts),**
- 8. Close the frame system by plugging the second long beam to the U structure,**
- 9. Fix the frame on the working table by closing clamps on one long and one short side,**
- 10. Measure two diagonal distances (must be the same within a few mm to have a right angle),**
- 11. Fix clamps on all sides,**
- 12. Put nails (notched pins),**
- 13. Check corners and put additional glue if needed (it is usually not needed, because gaps between frame beams are not bigger than 0.2 mm and there is enough leaked glue for sealing),**
- 14. Clean the surface of the bottom 3 mm of the profile with alcohol for gluing a composite panel (no grinding is needed),**
- 15. Put the glue and spread it with a taping knife (Spachtel),**
- 16. Remove protection foils from the panel (of course, this can be done in advance),**
- 17. Put the panel inside (by using vacuum holders or simply hands),**
- 18. Check the panel position and adjust it if needed (to have similar distance to all sides of the frame),**
- 19. Press the panel down either with clamps or weights,**
- 20. Quality check (look from the bottom and check if the glue leaks outside in all positions),**  
**Note: In this stage we do additional steps of gluing. Of course, all preparation steps for gluing (drilling and cleaning) are made before because of limited working time of the glue S610.**
- 21. Rivet and glue four brackets (see steps below for drilling five holes),**
- 22. A PMT tube and a fixing flange can be riveted and glued,**

**23. Sintered metal is glued and riveted.**

**Drilling holes for brackets:**

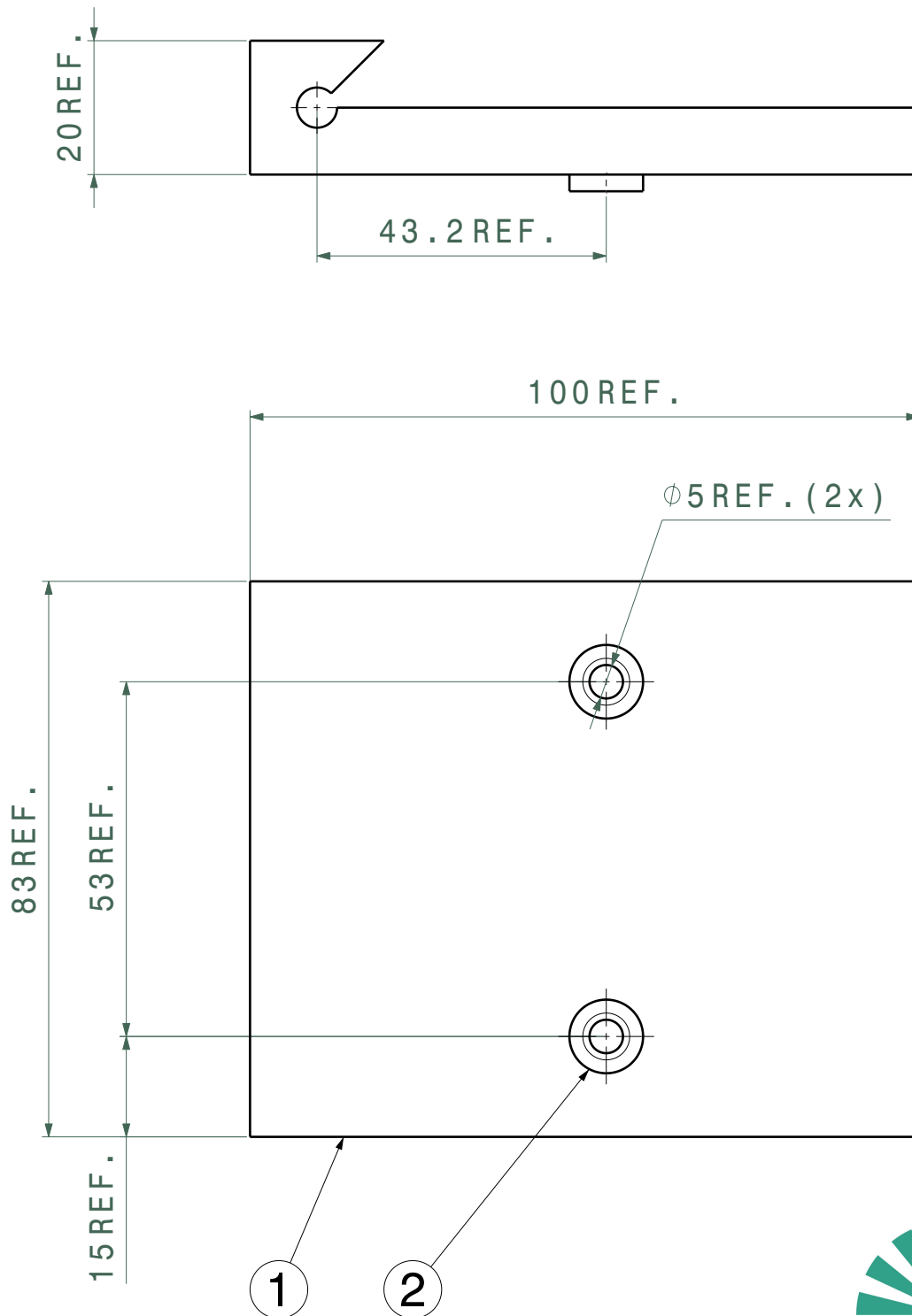
- I. Mark a position for the middle hole of the bracket on the frame,**
- II. Drill the hole,**
- III. Fix the bracket (not permanently) in the middle hole,**
- IV. Drill other holes,**
- V. Clean the holes (deburr, alcohol),**
- VI. Make it for all four brackets.**

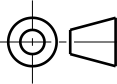
**Notes about gluing:**

- Only the S610 glue is used for all parts of the SSD Housing (enclosure box),**
- The working time of the S610 glue is between 25 and 50 minutes, it depends on the temperature,**
- All parts are prepared before gluing to have enough time to finish points 1.-23.,**
- In this case we use only one mixing nose for the glue,**
- The recommended curing time is 24 hours.**

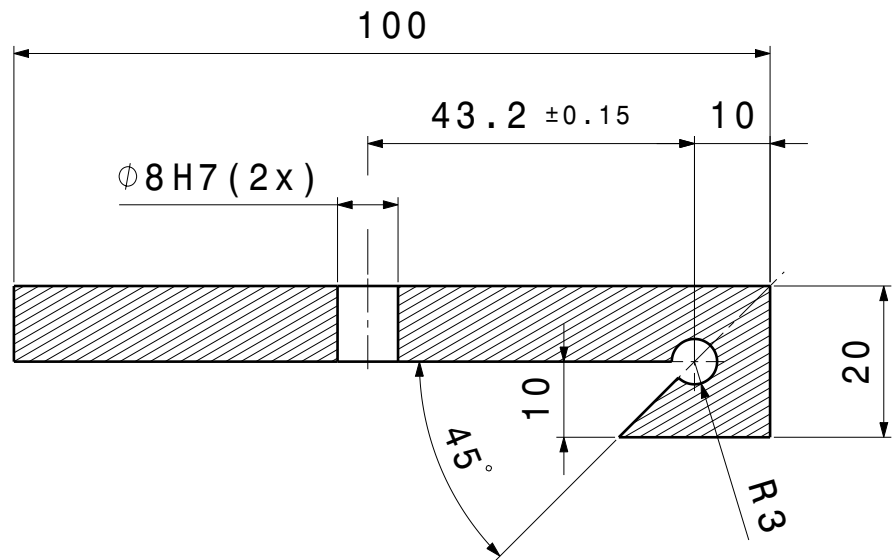
**Other Specifications**

a. n.v.t.

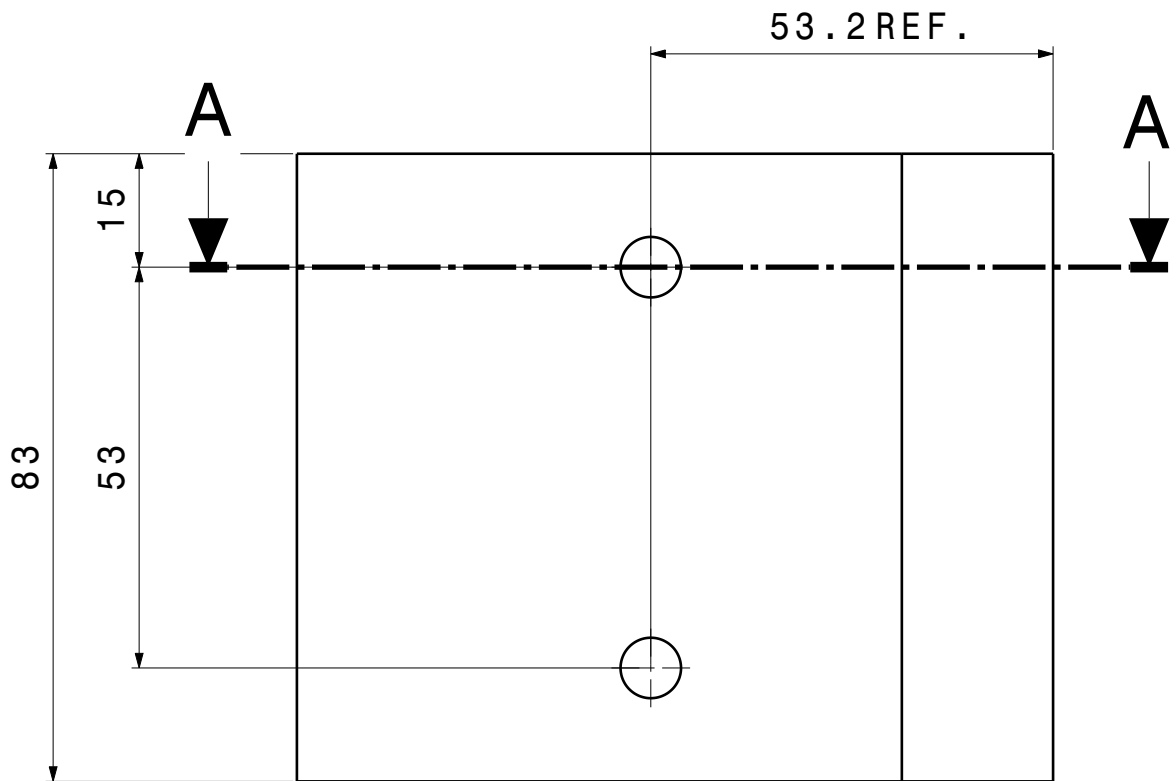


2	2	Guide Bushing (GANTHER DIN172-B5-12-A)	AB0279	45500-MT-00659	A
1	1	Drilling Template (for FOPPE&FOPPE 11008003002)	AB0267	45500-MT-00647	A
Pos Nr	Qty.	Definition	Item No	Nikhef Number	Rev
General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302					
Project: Astroparticle Physics Auger			Units: mm	Date: 21/06/2017	Revision: A
Top folder:SSD Production			Size: A4	Engineer: A. Korporaal	
Name: Drilling Template 1 (Notched Pins)				Checked: A. Korporaal	
				Item number: AB0280	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00719		
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
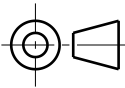




Section view A-A  
Scale: 1:1



Front view  
Scale: 1:1

General tolerances unless otherwise stated according to :ISO-2768-mK-E Geometrical tolerances unless otherwise stated according to:ISO-8015-E Roughness unless otherwise stated according to :ISO-1302			Material: Aluminium 60XX	
Project: Astroparticle Physics Auger  Top folder:SSD Production		Units: mm	Date: 22/06/2017	Revision: A
		Size: A4	Engineer: A. Korporeaal	
Name: Drilling Template (for FOPPE&FOPPE 11008003002)			Checked: A. Korporeaal	
			Item number: AB0267	Status: Released
National Institute for Subatomic Physics Science Park 105, 1098XG Amsterdam			Nikhef number: 45500-MT-00720	
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