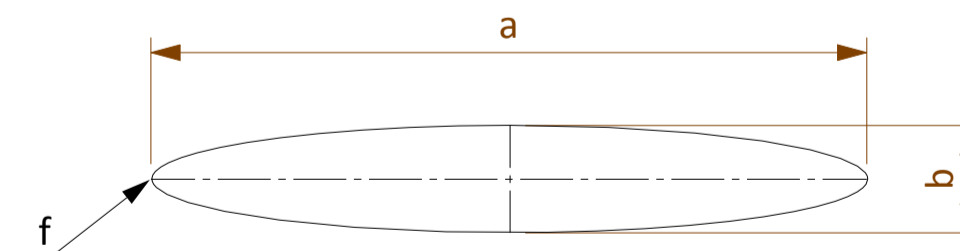
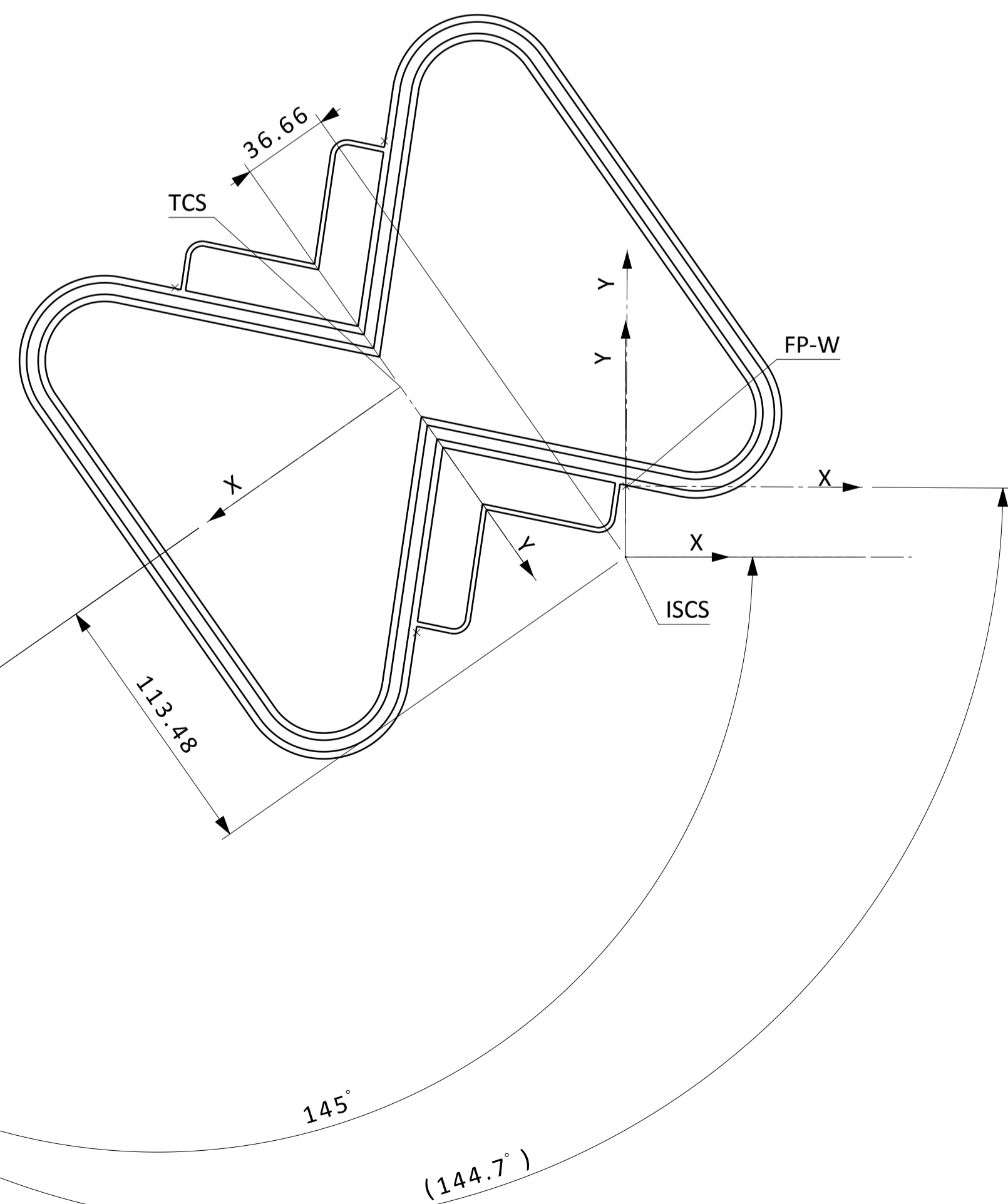
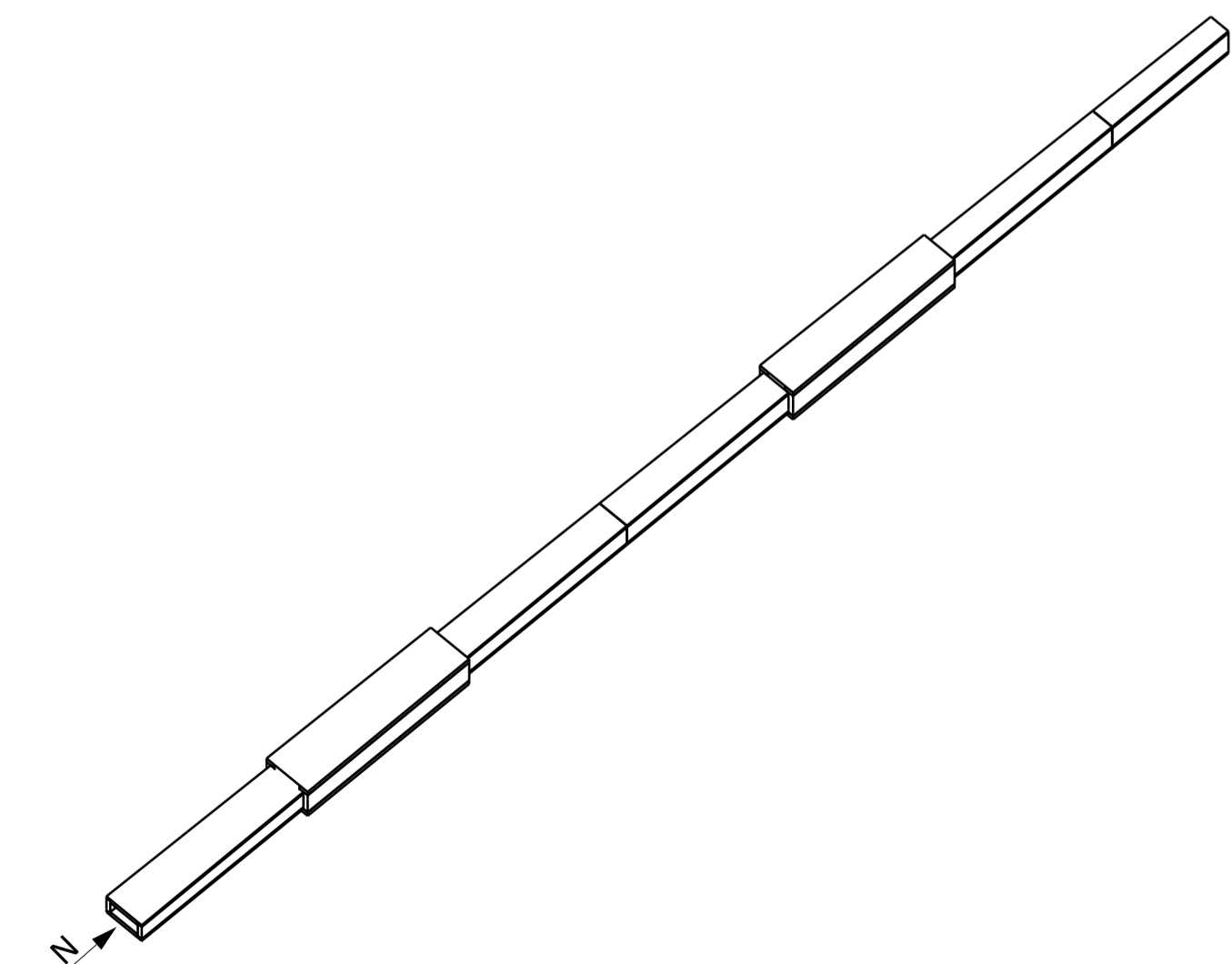


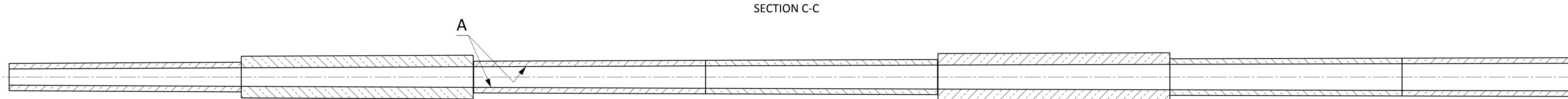
DETAIL A (1:2)



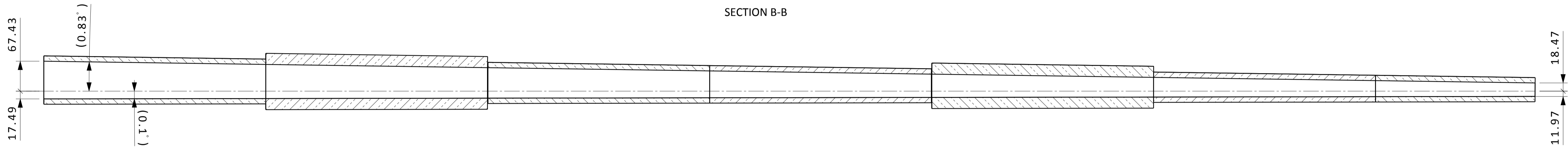
NOTES:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with $a=28846\text{mm}$, $b=80\text{mm}$, $f=577\text{mm}$ (From ISCS). Geometry simplified by 200 to 500mm long straight sections. Implementation on beamport W02



ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		BEER NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 06/03/2017
Documentation protection as per ISO 16016		DRAWN BY eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		DESIGN SITE	
ESS Lund		CHECKED BY	
APPROVED BY		LIFECYCLE LABEL	
QUALITY CONTROLLED BY		REV. SHEET	
		Preliminary 1.0 1/2	
		LEVEL OF MATURITY MC SIZE SCALE	
		M4 A1 1:5	
		Produced to ISO 1101, 8015 and 1302	

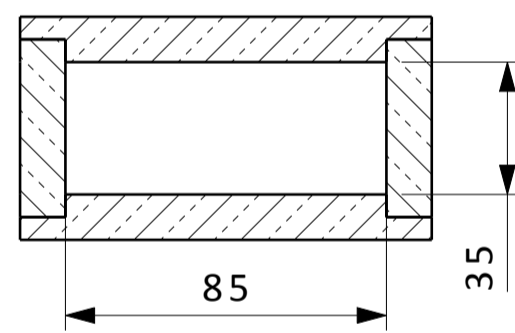


SECTION C-C

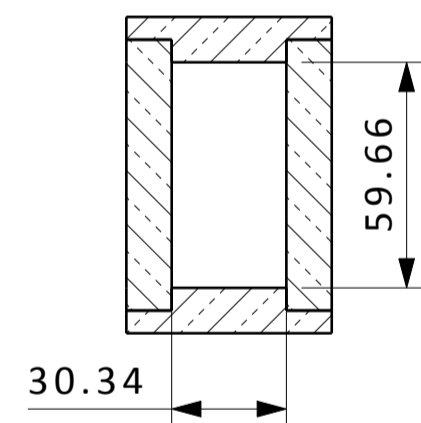


SECTION B-B

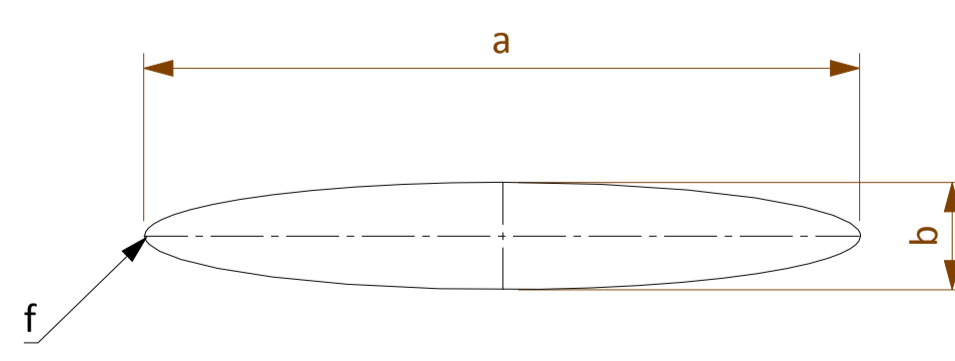
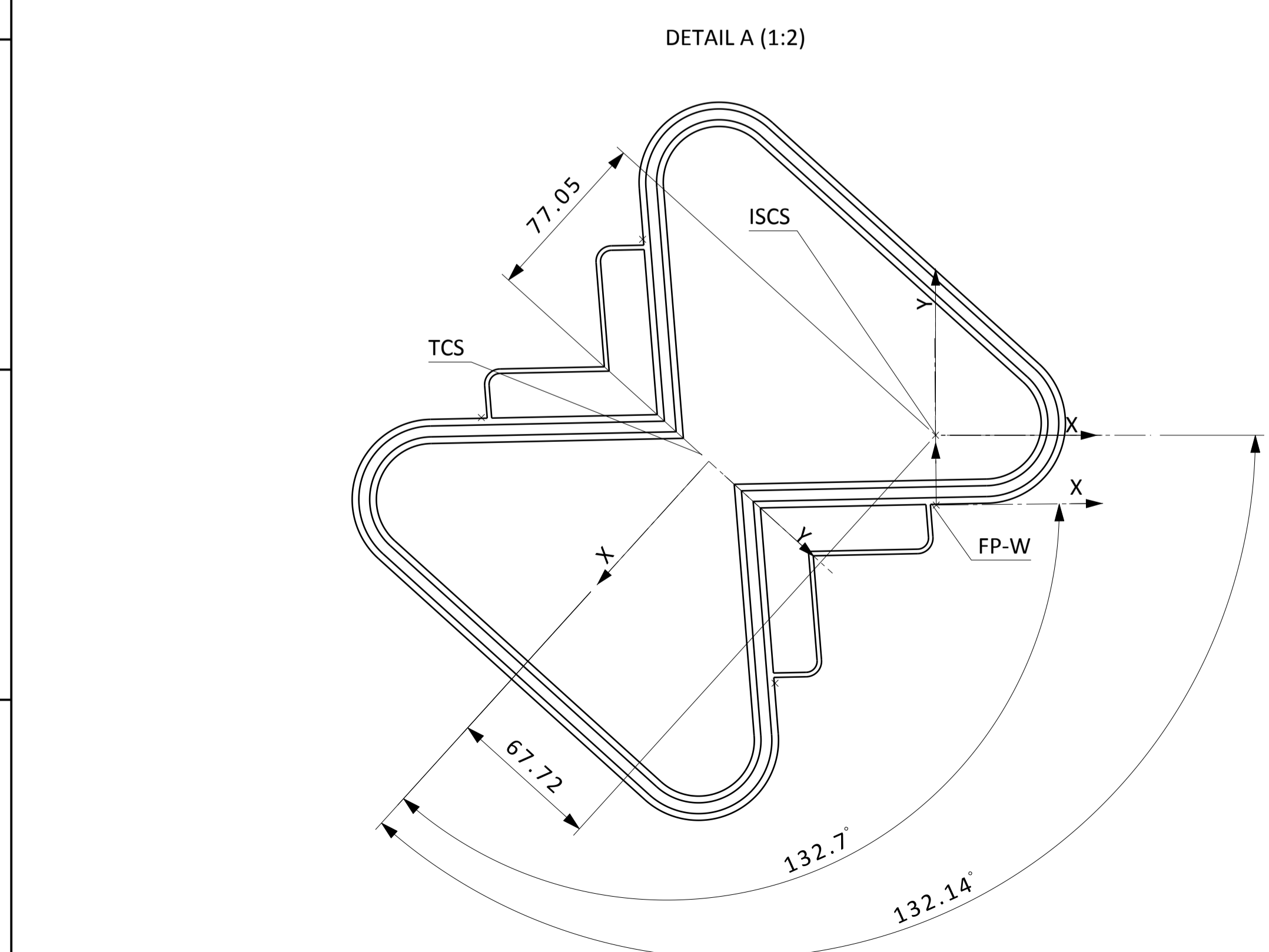
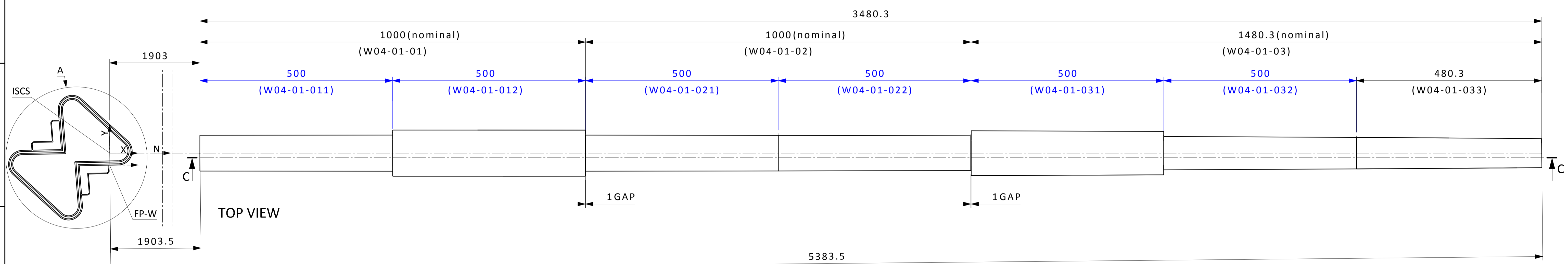
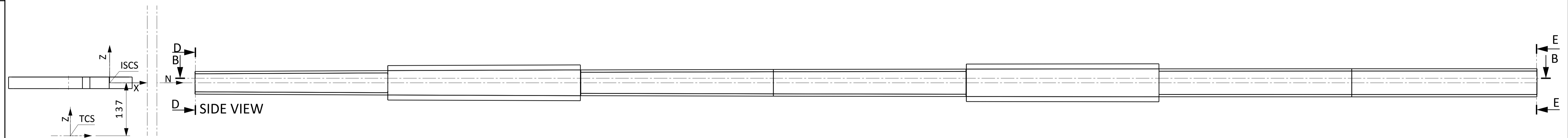
SECTION CUT D-D
AT 2027mm
SCALE 1:2



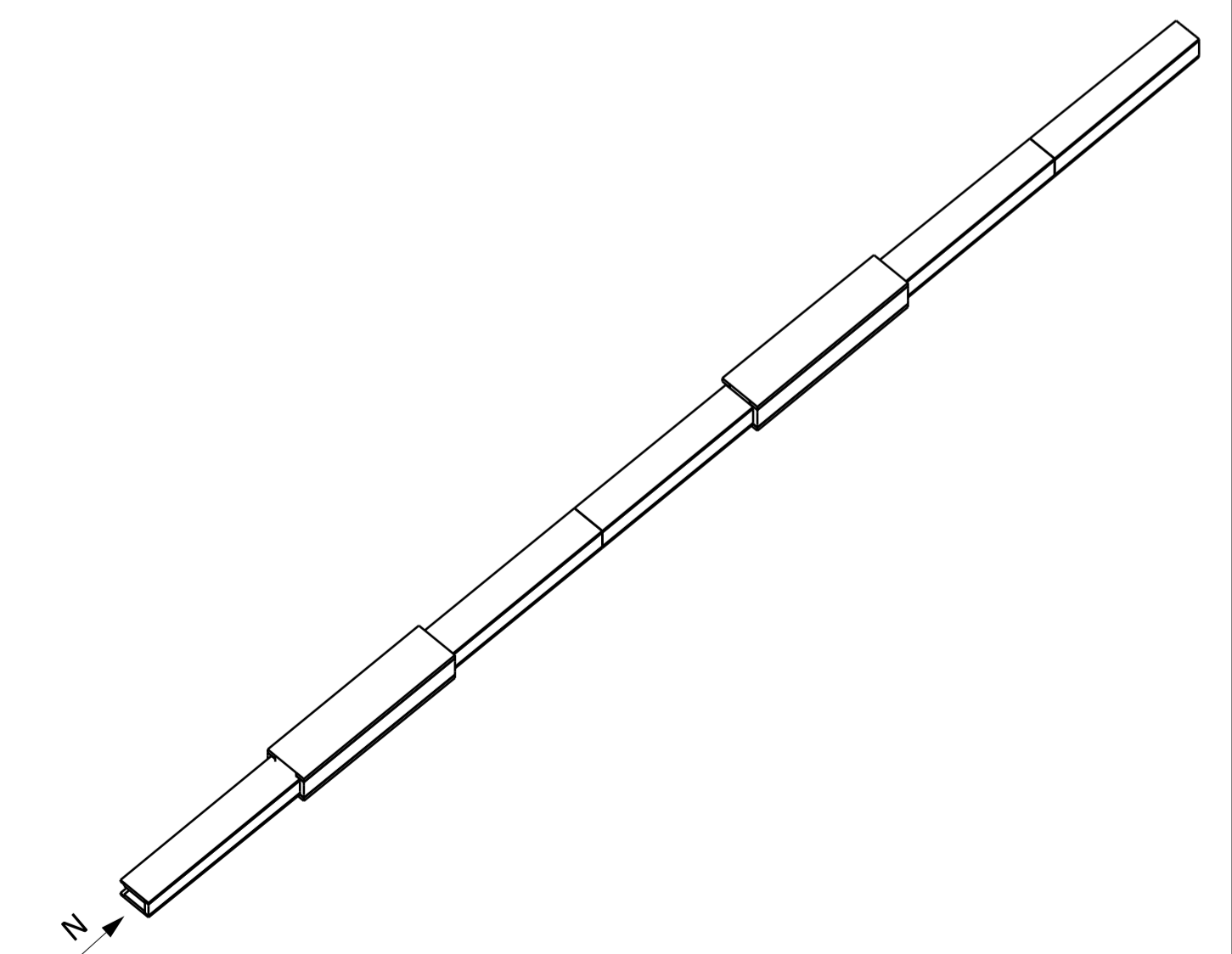
SECTION CUT E-E
AT 5402,7mm
SCALE 1:2



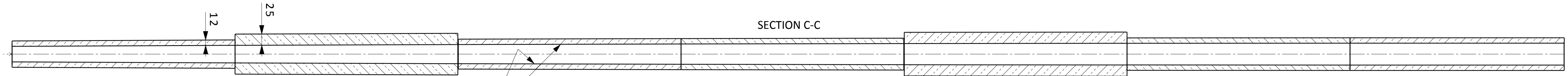
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		BEER NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5,5	
Chamfers, Radii and Angular Dim's:		MODELED BY	DRAWING CREATED
ISO 2768-mK		eriknilsson	06/03/2017
SURFACE FINISH Min. Ra 3.2		DRAWN BY	DRAWING RELEASED
Documentation protection as per ISO 16016		eriknilsson	
EUROPEAN SPALLATION SOURCE		CHECKED BY	DRAWING NUMBER
DESIGN SITE		APPROVED BY	ESS-0099137.2
ESS Lund		QUALITY CONTROLLED BY	LIFECYCLE LABEL
			REV. SHEET
			Preliminary 1.0 2/2
			LEVEL OF MATURITY MC SIZE SCALE
			M4 A1 1:5
			Produced to ISO 1101, 8015 and 1302



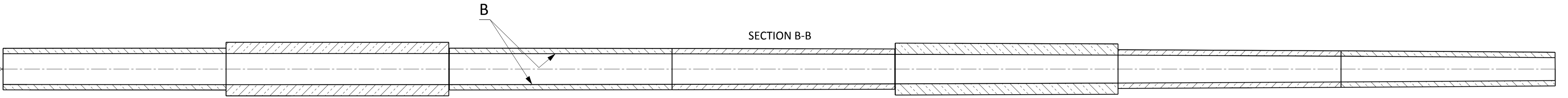
Notes:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with $a=9243,089\text{mm}$, $b=48,862\text{mm}$, $f=543,7$ (From ISCS)
 B: Elliptical left and right section. Ellipse with $a=8288,207\text{mm}$, $b=69,634\text{mm}$, $f=-1574,1$ (From ISCS)
 Implementation on beamport W04



ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		BIFROST NBOA Assembly	
Linear Dimensions, Form and Position:	ISO 2768-mK	MODELED BY	eriknilsson
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	DRAWING CREATED	07/03/2017
SURFACE FINISH	Min. Ra 3.2	DRAWN BY	eriknilsson
Documentation protection as per	ISO 16016	DRAWING RELEASED	
EUROPEAN SPALLATION SOURCE		CHECKED BY	
DESIGN SITE		APPROVED BY	
ESS Lund		QUALITY CONTROLLED BY	
LIFECYCLE LABEL		REV.	SHEET
Preliminary		1.0	1/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1		1:5
Produced to ISO 1101, 8015 and 1302			

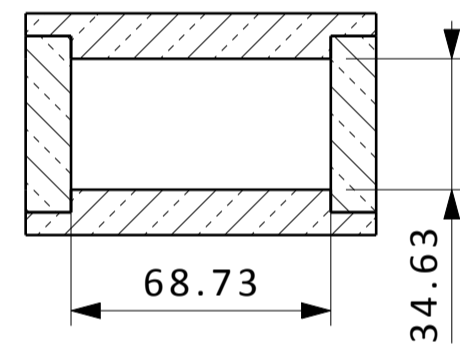


SECTION C-C

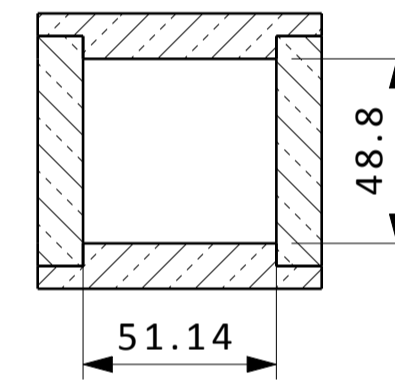



SECTION B-B

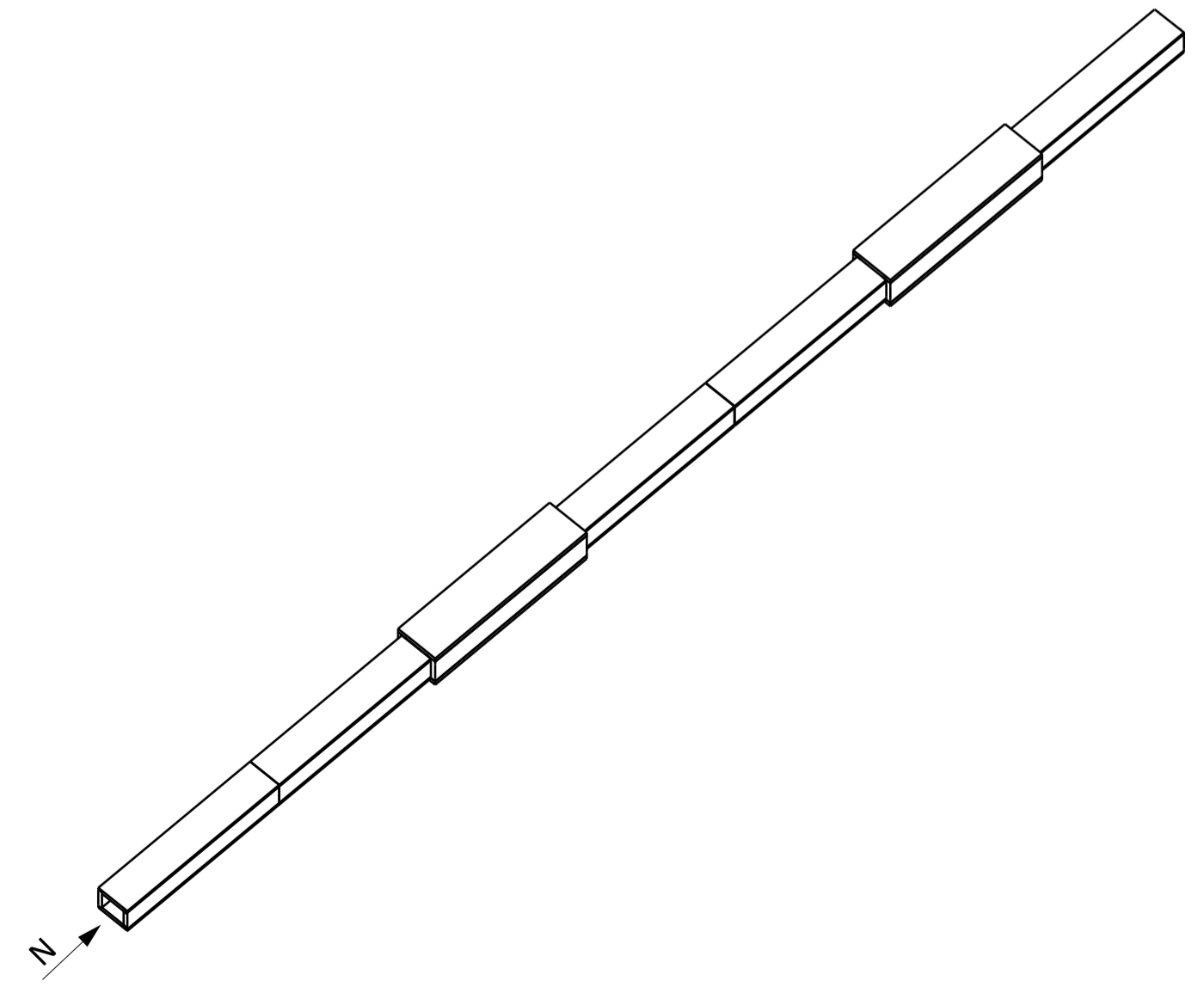
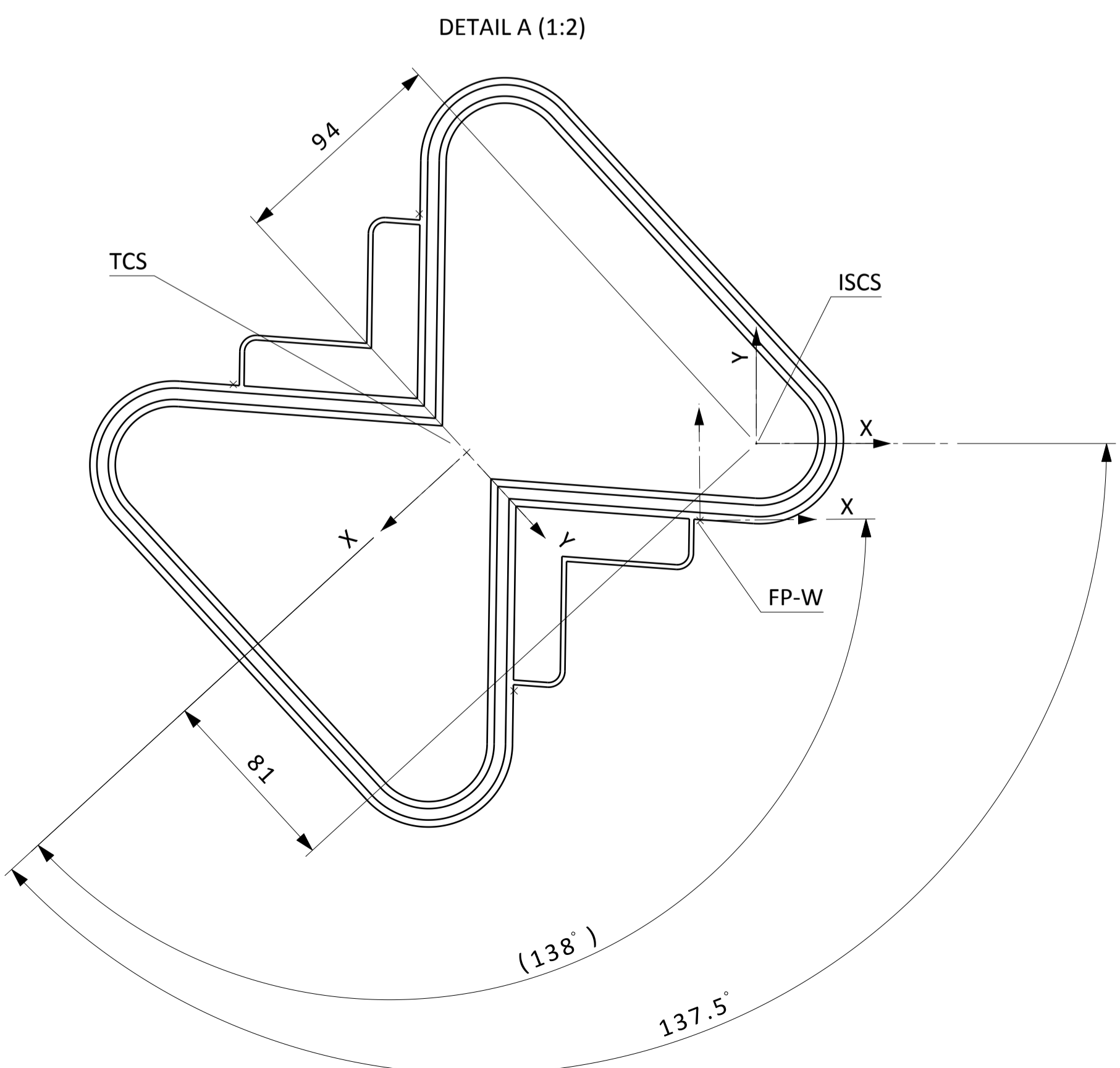
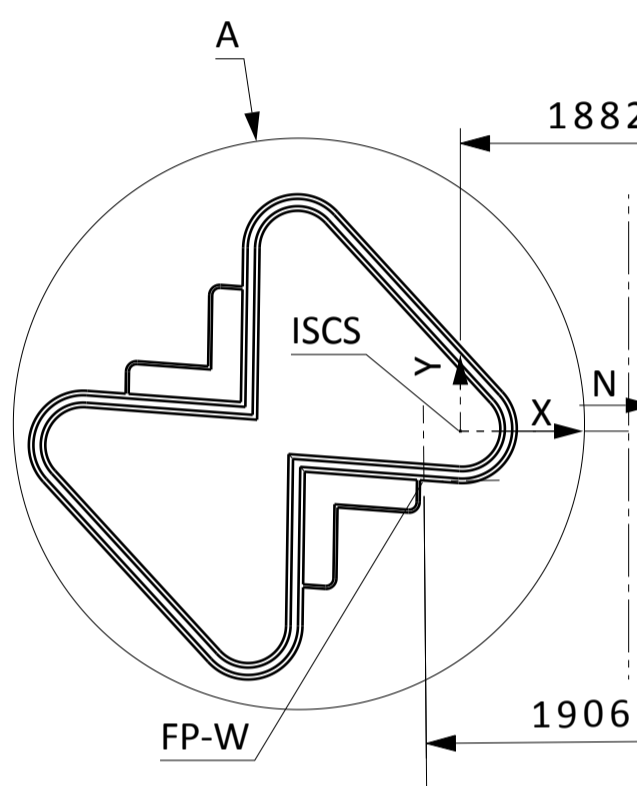
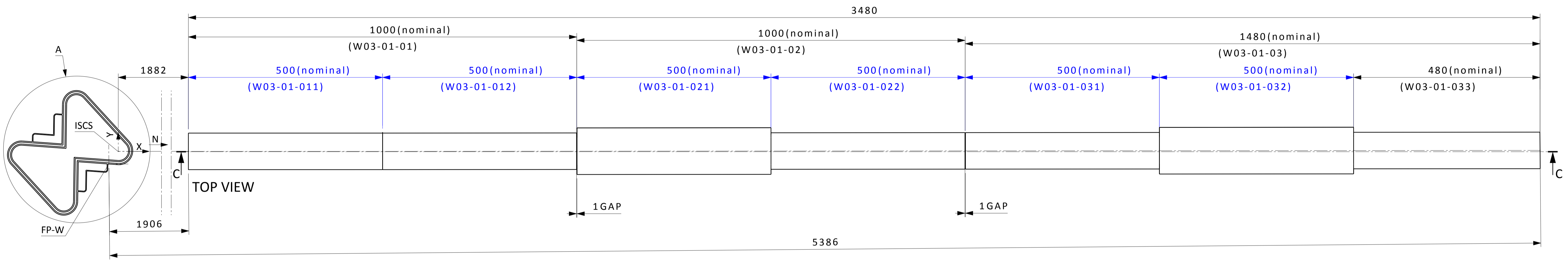
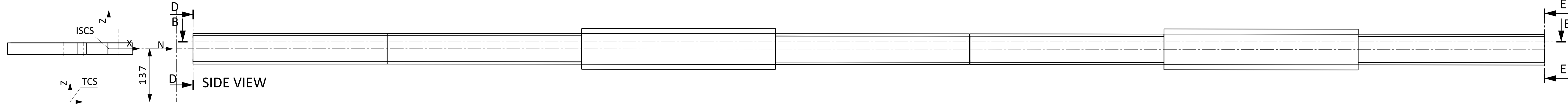
SECTION CUT D-D
AT 1903mm
SCALE 1:2



SECTION CUT E-E
AT 5383,3mm
SCALE 1:2

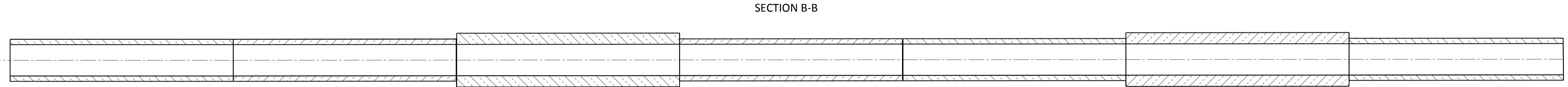
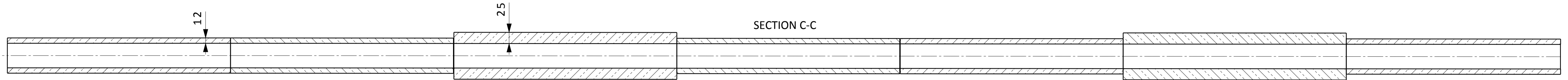


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		BIFROST NBOA Assembly	
Linear Dimensions, Form and Positions:	ISO 2768-mK	MODELED BY	R2-RS.5
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	eriknilsson	07/03/2017
SURFACE FINISH	Min. Ra 3.2	DRAWN BY	eriknilsson
Documentation protection as per	ISO 16016	CHECKED BY	
 EUROPEAN SPALLATION SOURCE DESIGN SITE ESS Lund	APPROVED BY	DRAWING NUMBER	
	QUALITY CONTROLLED BY	ESS-0099277.2	
LIFECYCLE LABEL		REV.	SHEET
Preliminary		1.0	2/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1		1:5
Produced to ISO 1101, 8015 and 1302			

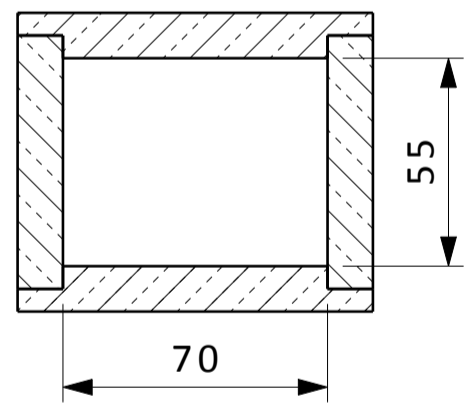


Notes:
 TCS = Target coordinate system
 FP-W = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator.
 Defined by instrument team as translation and/or rotation from TCS.
 Implementation on beamport W03

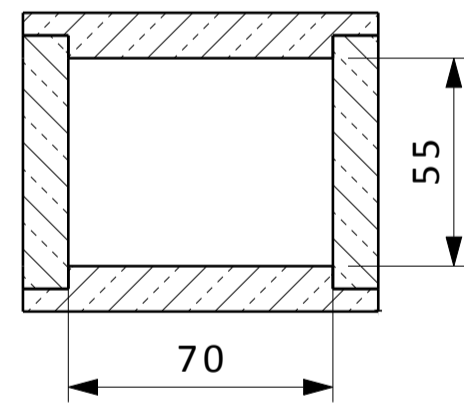
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		CSPEC NBOA Assembly	
Linear Dimensions, Form and Position:	ISO 2768-mK	MODELED BY	R2-RS.5
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	eriknilsson	28/02/2017
SURFACE FINISH	Min. Ra 3.2	DRAWN BY	eriknilsson
Documentation protection as per ISO 16016		CHECKED BY	
EUROPEAN SPALLATION SOURCE		APPROVED BY	
DESIGN SITE		QUALITY CONTROLLED BY	
ESS Lund			
DRAWING NUMBER		REV.	SHEET
ESS-0098382.2		Preliminary	1.0 1/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1	1:5	
Produced to ISO 1101, 8015 and 1302			




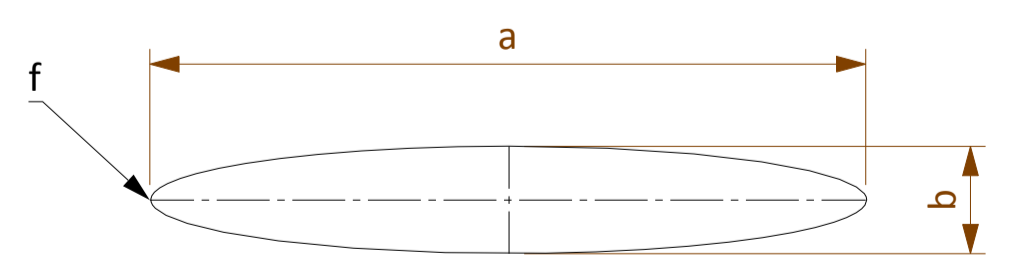
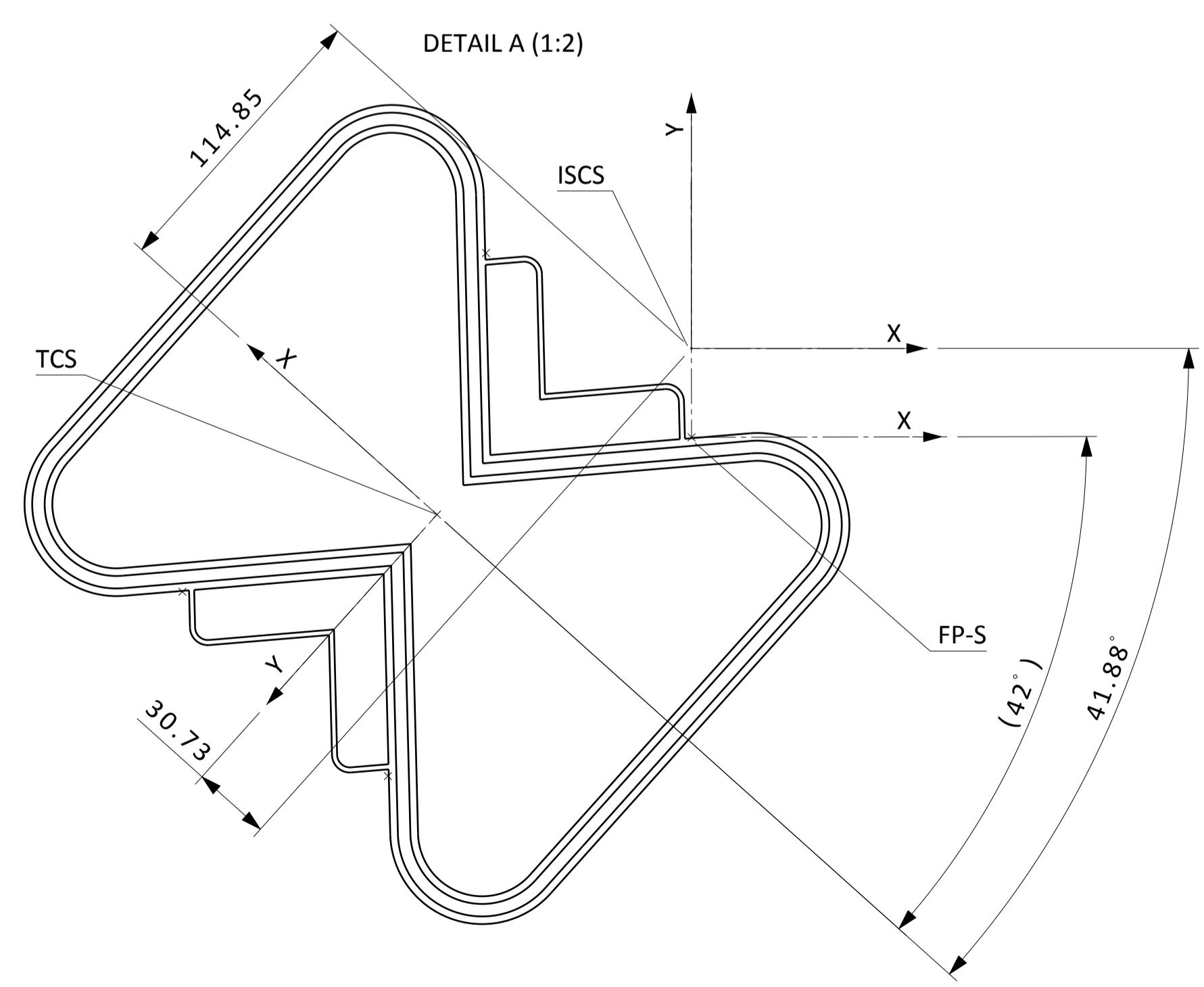
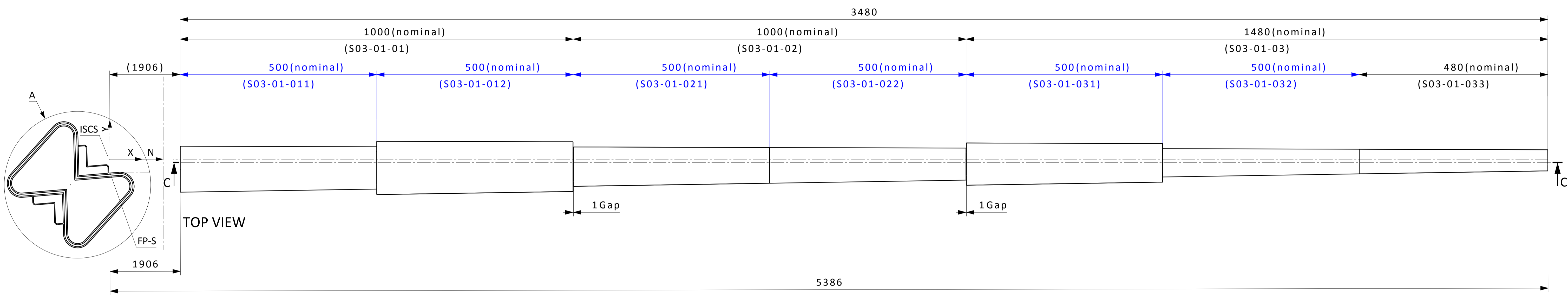
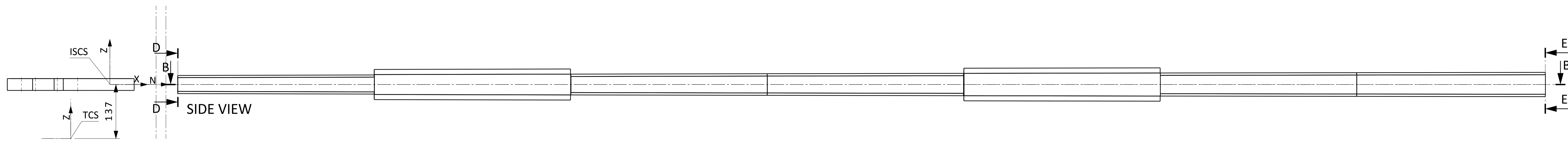
SECTION CUT D-D
AT 1882mm
SCALE 1:2



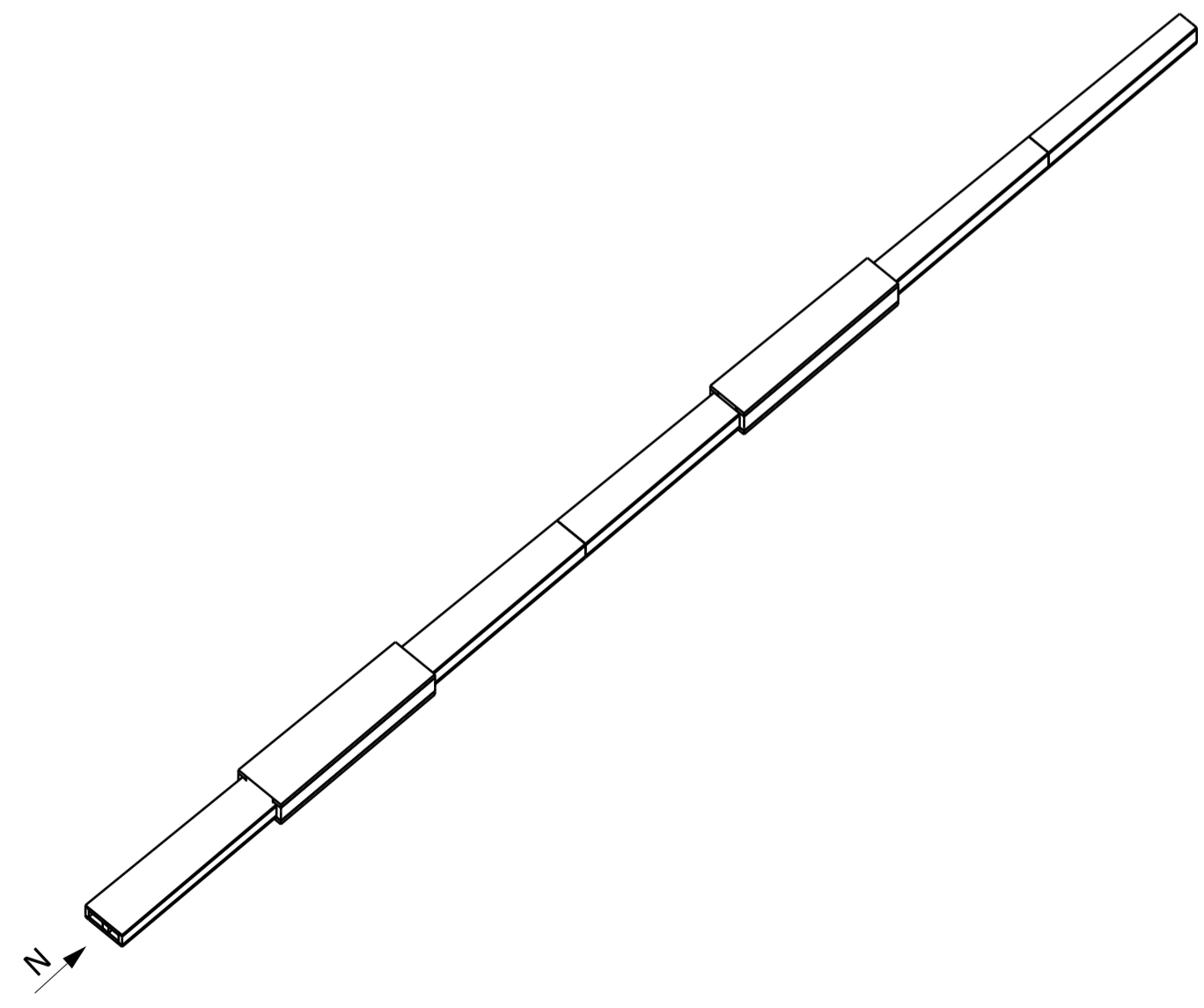
SECTION CUT E-E
AT 5362mm
SCALE 1:2



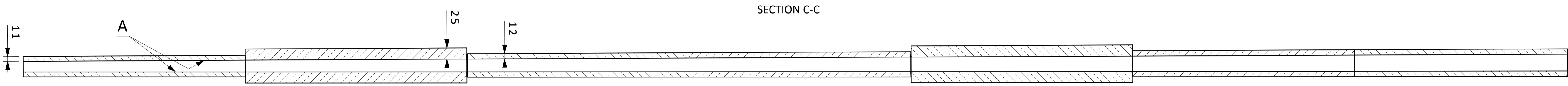
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE		
General Tolerances		CSPEC NBOA Assembly		
Linear Dimensions, Form and Positions: ISO 2768-mK		MODELED BY	DRAWING CREATED	
Chamfers, Radii and Angular Dim's: ISO 2768-vK		eriknilsson	28/02/2017	
SURFACE FINISH Min. Ra 3.2		DRAWN BY	DRAWING RELEASED	
Documentation protection as per ISO 16016		eriknilsson		
 EUROPEAN SPALLATION SOURCE DESIGN SITE ESS Lund	CHECKED BY	DRAWING NUMBER		
	APPROVED BY	ESS-0098382.2		
	QUALITY CONTROLLED BY	LIFECYCLE LABEL	REV.	SHEET
Produced to ISO 1101, 8015 and 1302		Preliminary	1.0	2/2
		LEVEL OF MATURITY	MC	SCALE
		M4	A1	1:5



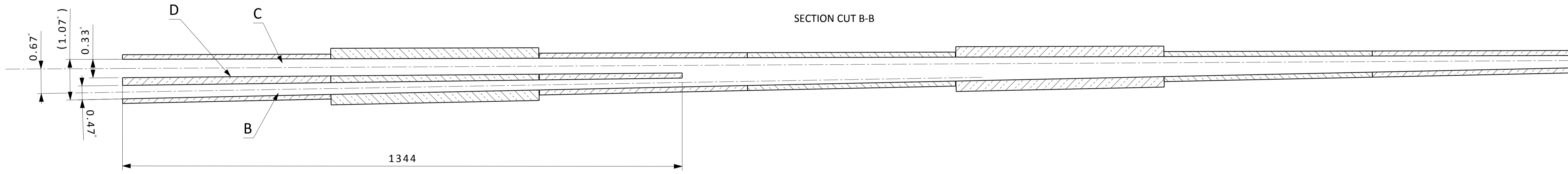
Notes:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with $a=47860\text{mm}$, $b=58,6\text{mm}$, $f=-180$ (From ISCS)
 B: Cold beam channel
 C: Thermal beam channel
 D: Divider
 Implementation on beamport S03



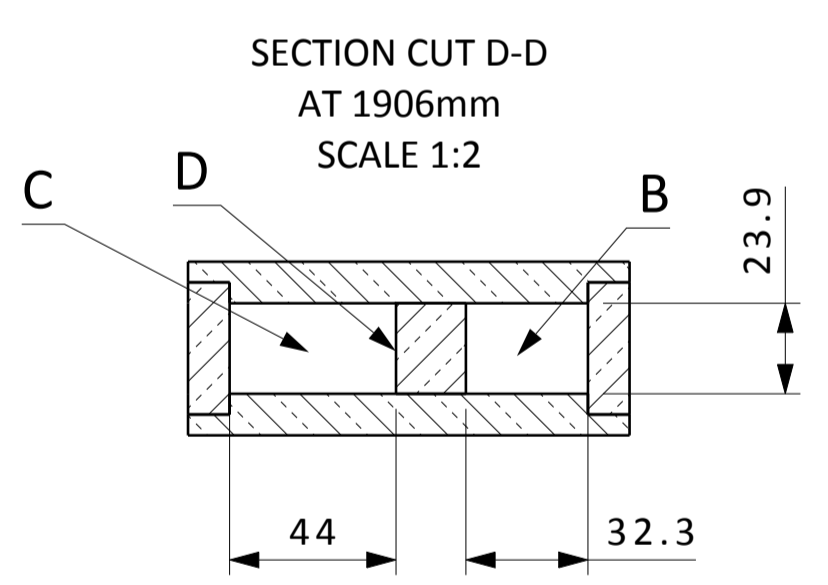
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		DREAM NBOA Assembly	
Linear Dimensions, Form and Position:	ISO 2768-mK	MODELED BY	R2-RS.5
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	eriknilsson	DRAWING CREATED 28/02/2017
SURFACE FINISH	Min. Ra 3.2	eriknilsson	DRAWING RELEASED
Documentation protection as per ISO 16016		LIFECYCLE LABEL	
EUROPEAN SPALLATION SOURCE		CHECKED BY	REV. SHEET
DESIGN SITE		APPROVED BY	Preliminary 1.0 1/2
ESS Lund		QUALITY CONTROLLED BY	LEVEL OF MATURITY MC SIZE SCALE
			M4 A1 1:5
			Produced to ISO 1101, 8015 and 1302



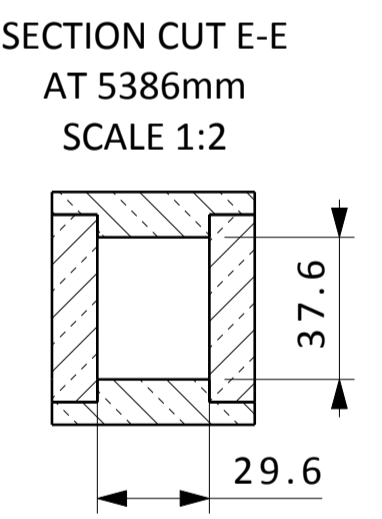
SECTION C-C



SECTION CUT B-B

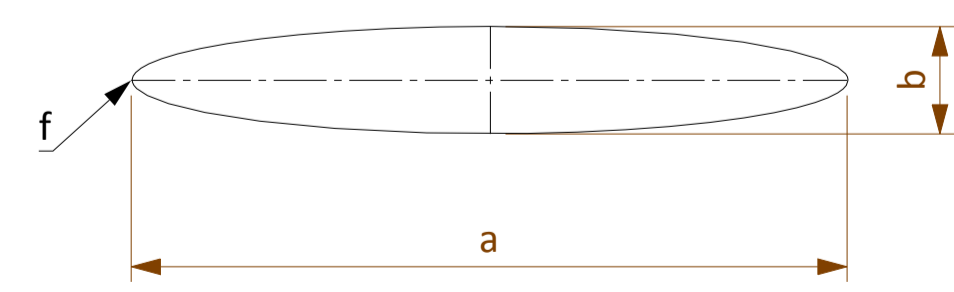
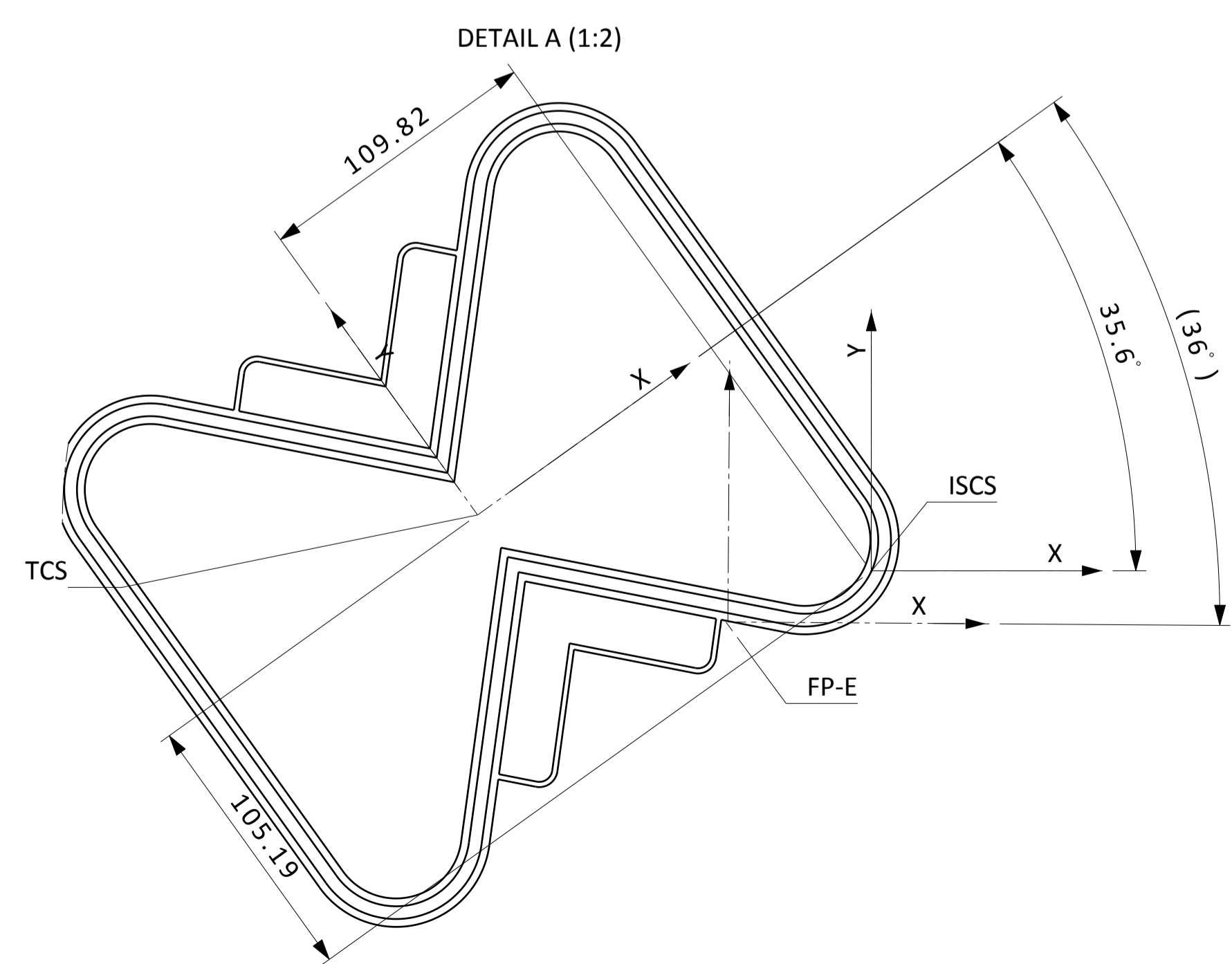
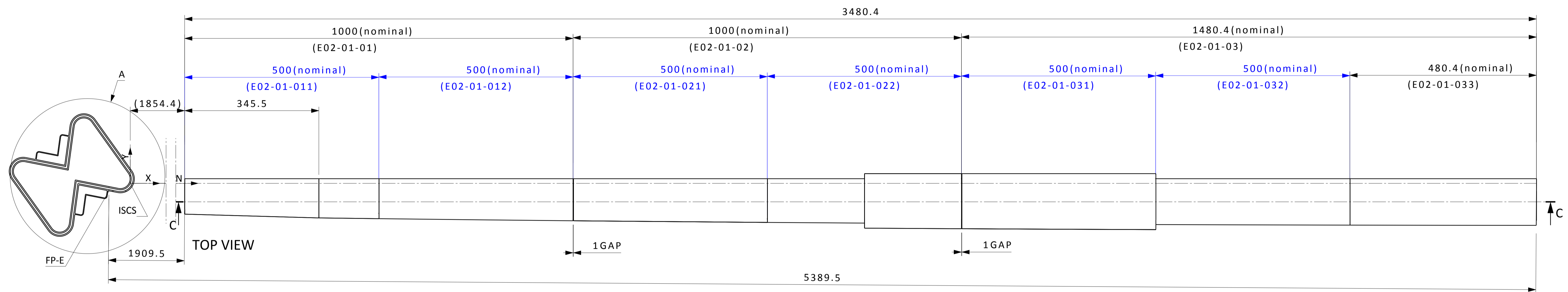
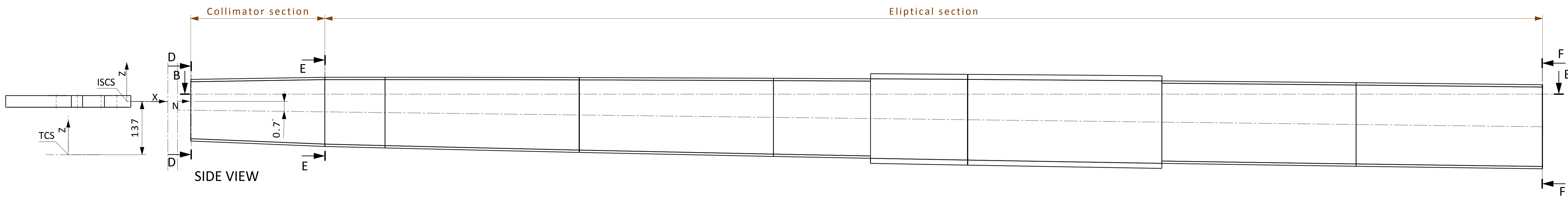


SECTION CUT D-D
AT 1906mm
SCALE 1:2

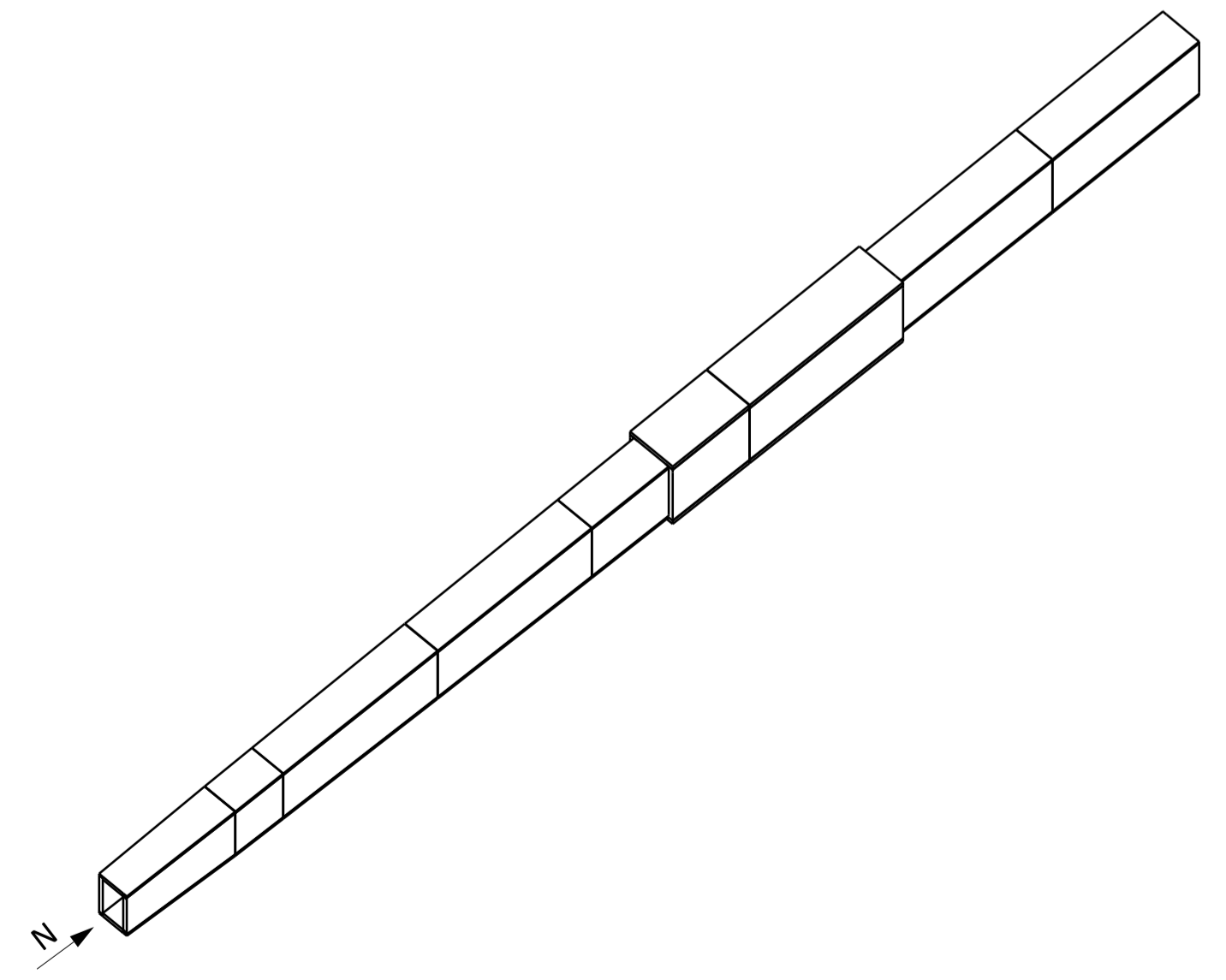


SECTION CUT E-E
AT 5386mm
SCALE 1:2

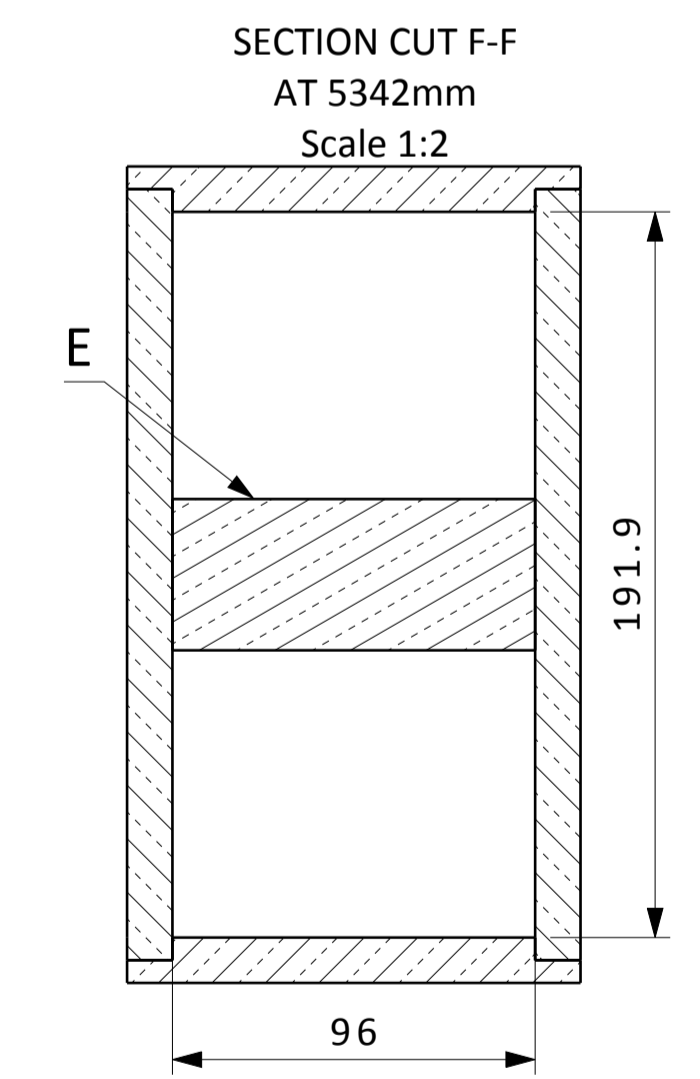
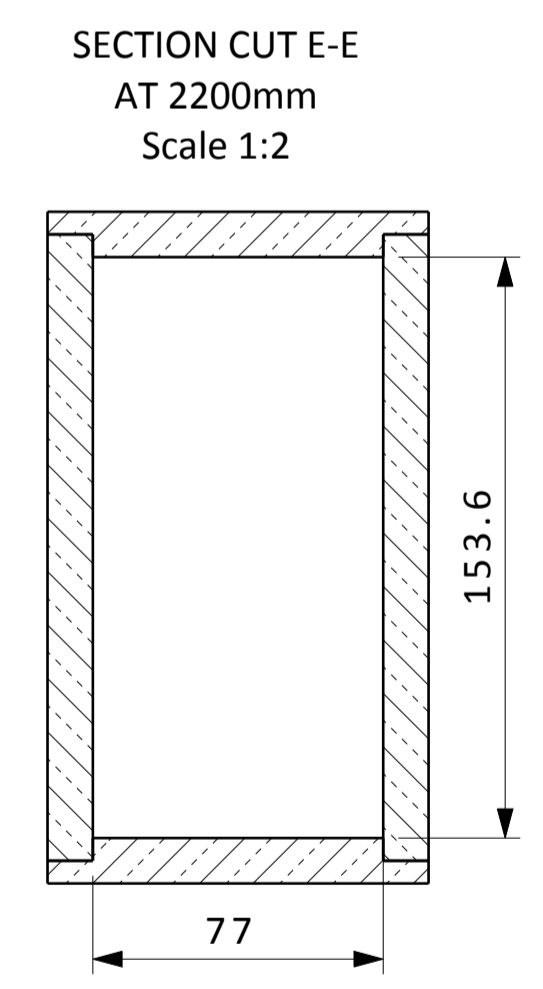
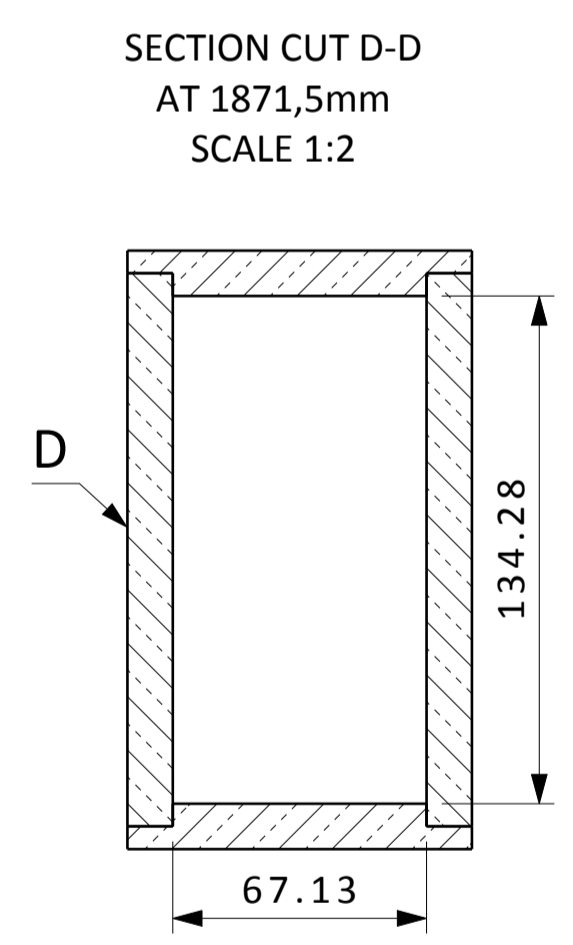
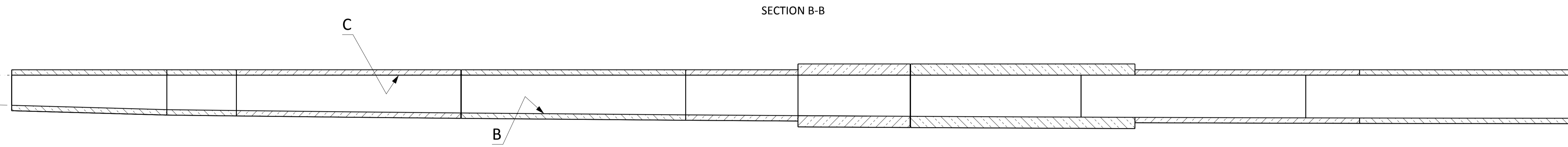
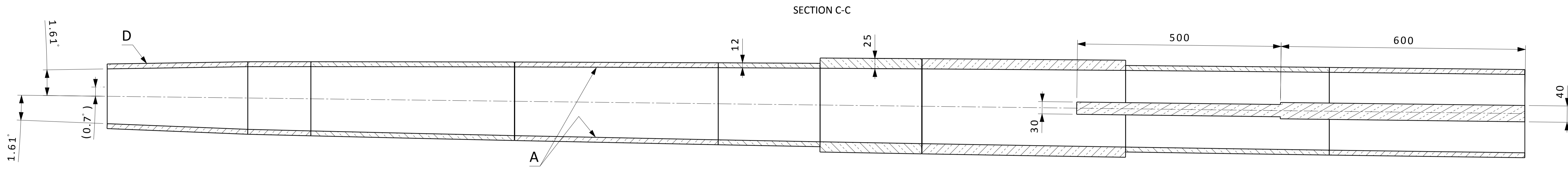
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		DREAM NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5.5	
Chamfers, Radii and Angular Dim's:		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 28/02/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		LIFECYCLE LABEL	
DESIGN SITE		REV.	
ESS Lund		1.0	
APPROVED BY		SHEET	
QUALITY CONTROLLED BY		2/2	
Produced to ISO 1101, 8015 and 1302		LEVEL OF MATURITY MC	
		SIZE	
		SCALE	
		M4 A1 1:5	
DRAWING NUMBER			
ESS-0098428.2			



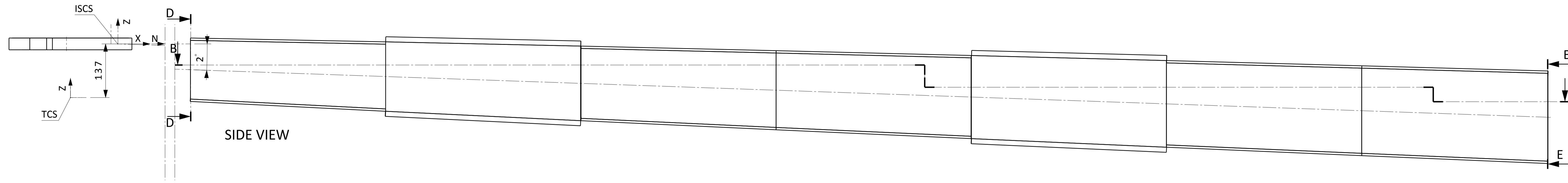
Notes:
 TCS = Target coordinate system
 FP-E = Moderator east sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with $a=11001,68\text{mm}$, $b=192\text{mm}$, $f=-0,84$ (From ISCS)
 B: Elliptical right side. Ellipse with $a=11001,68\text{mm}$, $b=192\text{mm}$, $f=-0,84$ (From ISCS)
 C: Left side is straight and un-coated
 D: Collimator section
 E: Copper Wedge
 Implementation on beamport S03



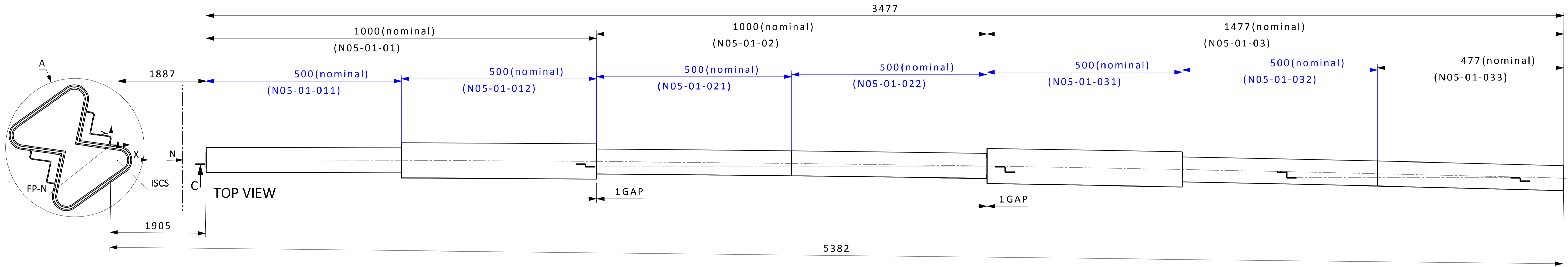
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		ESTIA NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5,5	
Chamfers, Radii and Angular Dim's:		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH		ISO 2768-vK	DRAWING CREATED 01/03/2017
Min. Ra 3.2		DRAWN BY eriknilsson	DRAWING RELEASED
Documentation protection as per ISO 16016		LIFECYCLE LABEL	
EUROPEAN SPALLATION SOURCE		REV. SHEET	
DESIGN SITE		Preliminary 1.0 1/2	
ESS Lund		LEVEL OF MATURITY MC SIZE SCALE	
QUALITY CONTROLLED BY		M4 A1 1:5	
		Produced to ISO 1101, 8015 and 1302	



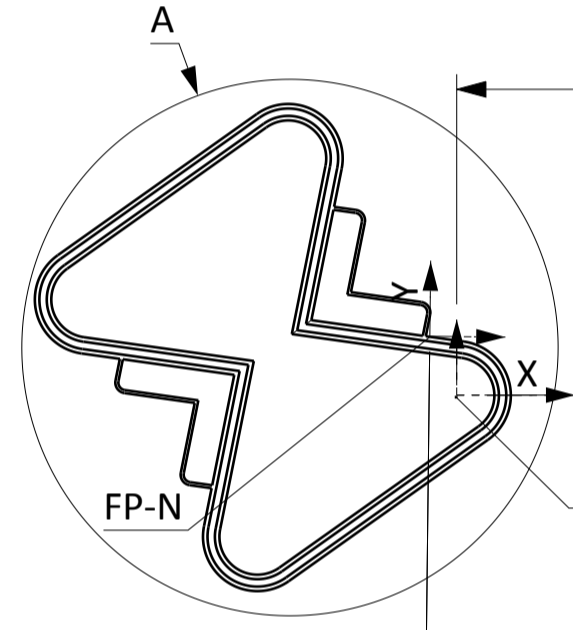
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		ESTIA NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5,5	
Chamfers, Radii and Angular Dim's:		MODELED BY	DRAWING CREATED
SURFACE FINISH Min. Ra 3.2		eriknilsson	01/03/2017
Documentation protection as per ISO 16016		DRAWN BY	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		eriknilsson	
DESIGN SITE		CHECKED BY	DRAWING NUMBER
ESS Lund			ESS-0098542.2
APPROVED BY		LEVEL OF MATURITY	REV.
QUALITY CONTROLLED BY		M4	A1
		SIZE	SHEET
		A1	2/2
		SCALE	
		1:5	
Produced to ISO 1101, 8015 and 1302			



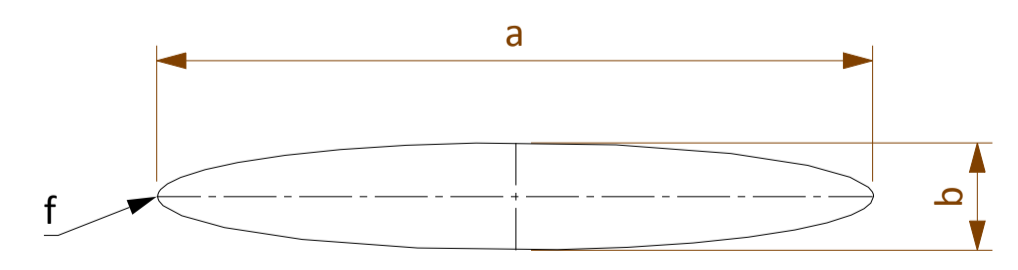
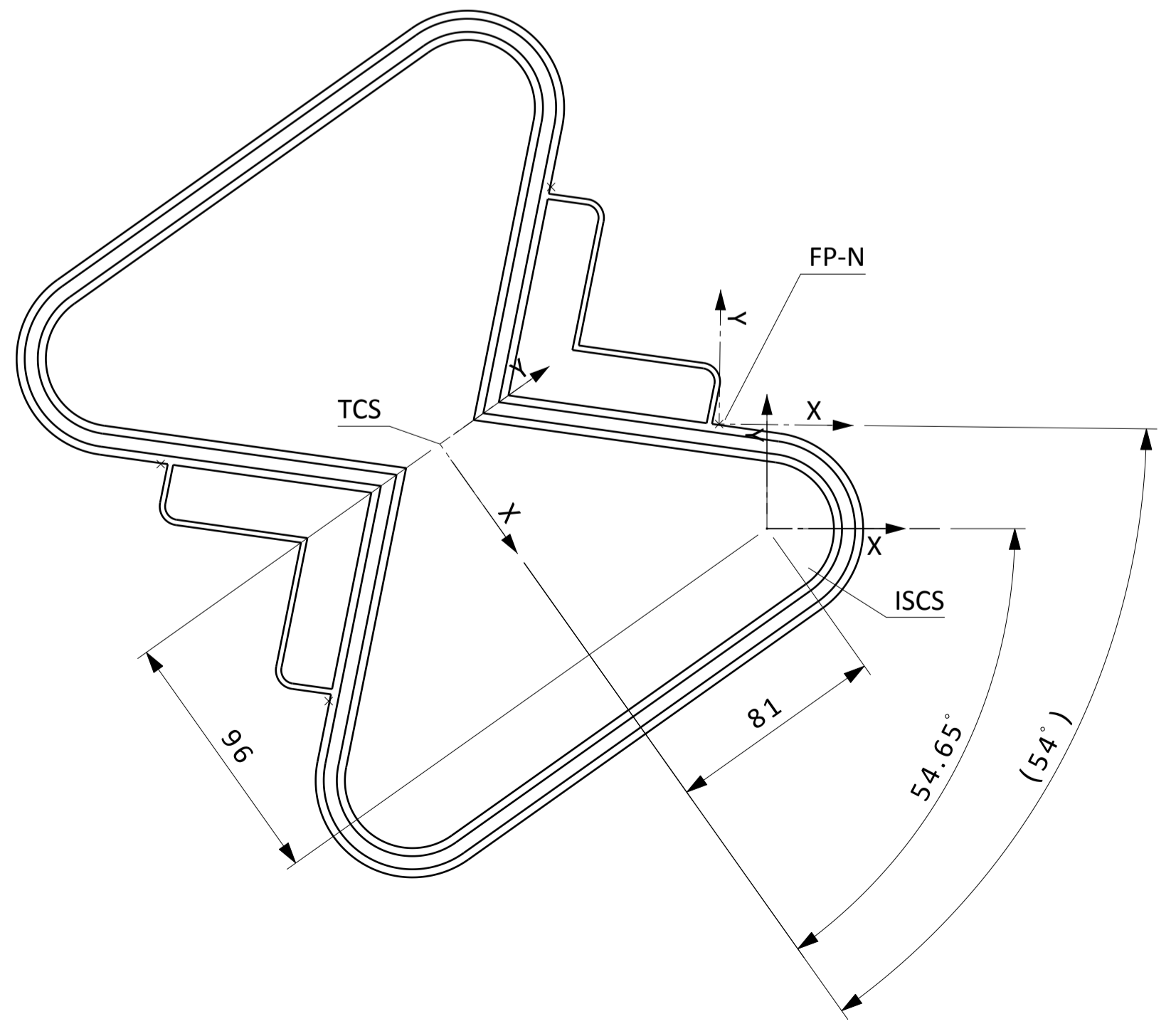
SIDE VIEW



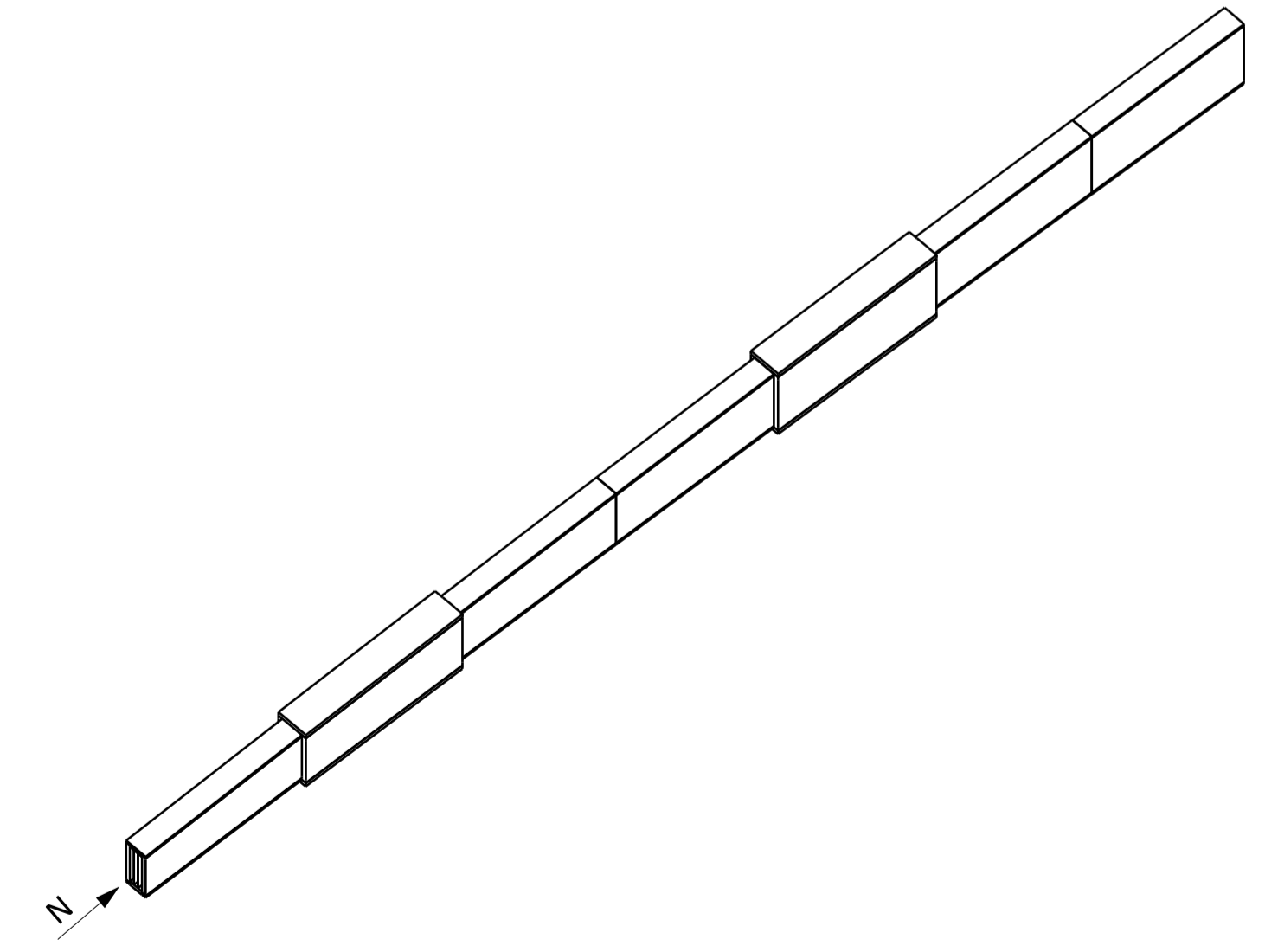
TOP VIEW



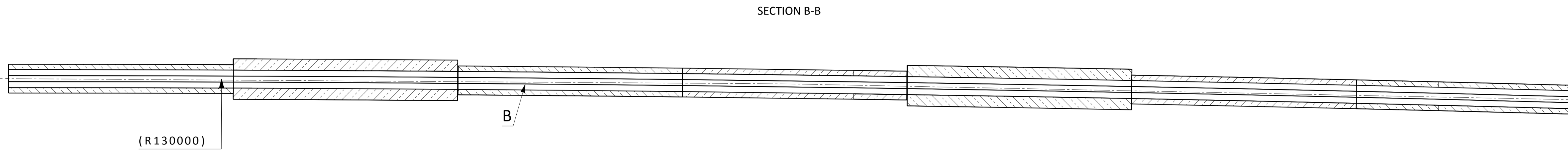
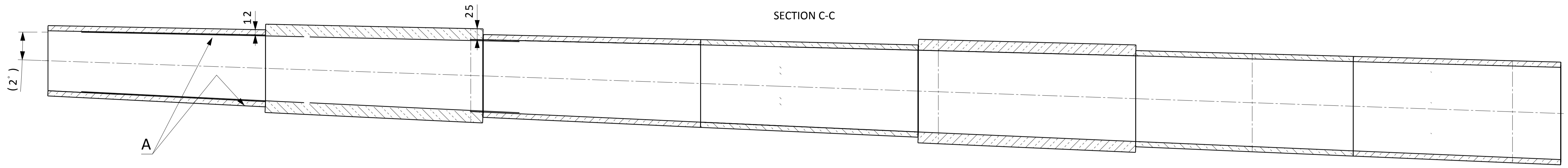
DETAIL A (1:2)



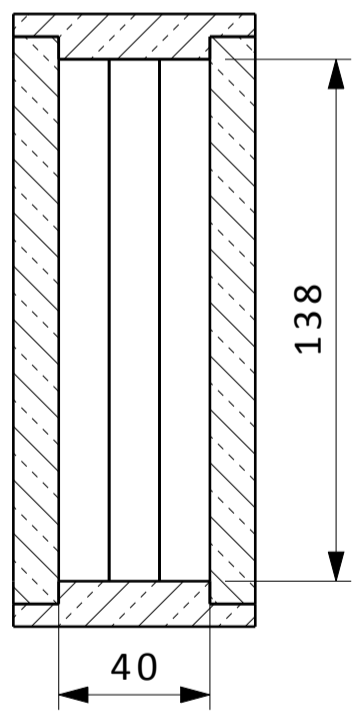
Notes:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with a=22760mm, b=250mm, f=0 (From ISCS)
 B: Multichannel bender: R=130m, 3 Channels, M=4
 Implementation on beamport N05



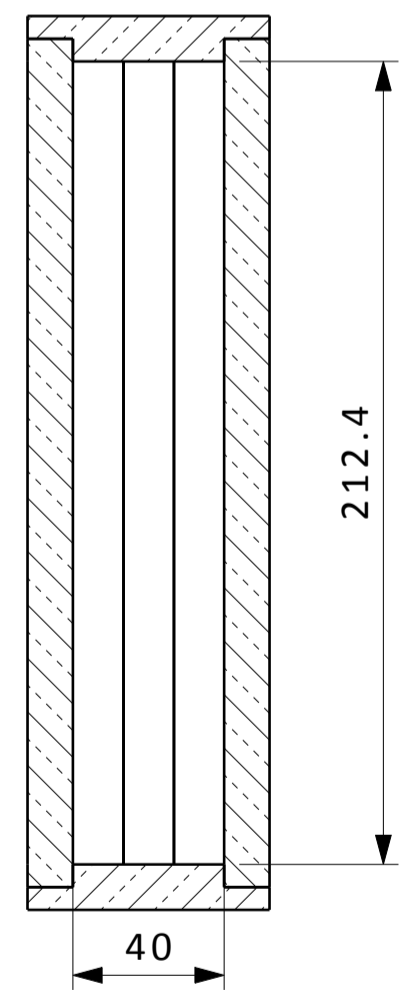
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		FREIA NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5.5	DRAWING NUMBER
Chamfers, Radii and Angular Dim's:		ISO 2768-mK	ERIKNILSSON
SURFACE FINISH:		ISO 2768-vK	22/02/2017
Min. Ra 3.2		DRAWN BY	DRAWING RELEASED
Documentation protection as per ISO 16016		ERIKNILSSON	ERIKNILSSON
EUROPEAN SPALLATION SOURCE		CHECKED BY	LIFECYCLE LABEL
DESIGN SITE		APPROVED BY	REV. SHEET
ESS Lund		QUALITY CONTROLLED BY	Preliminary 1.0 1/2
			LEVEL OF MATURITY MC SIZE SCALE
			M4 A1 1:5
			Produced to ISO 1101, 8015 and 1302




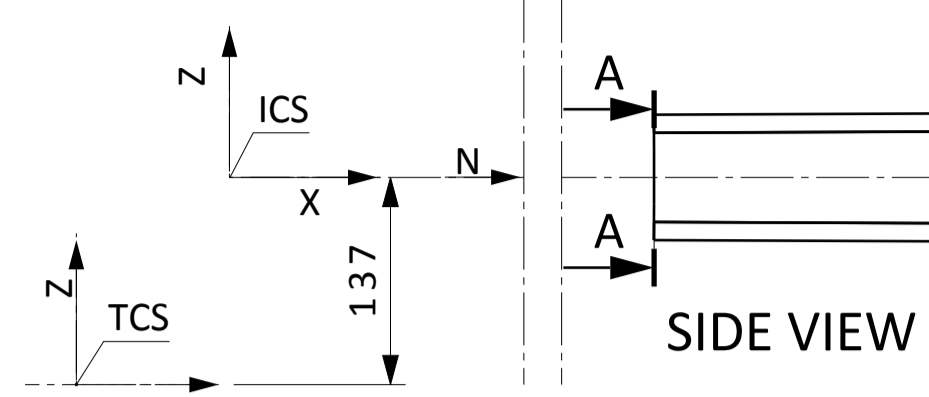
SECTION CUT D-D
AT 1887mm
Scale 1:2



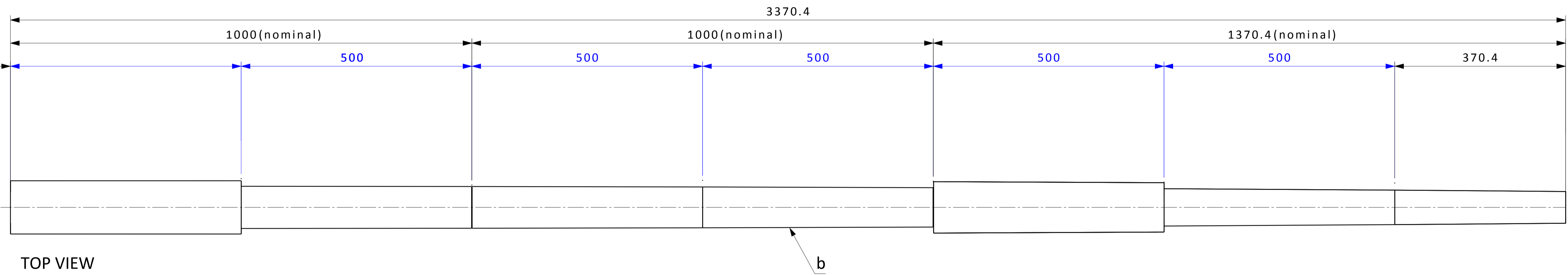
SECTION CUT E-E
AT 5364mm
Scale 1:2



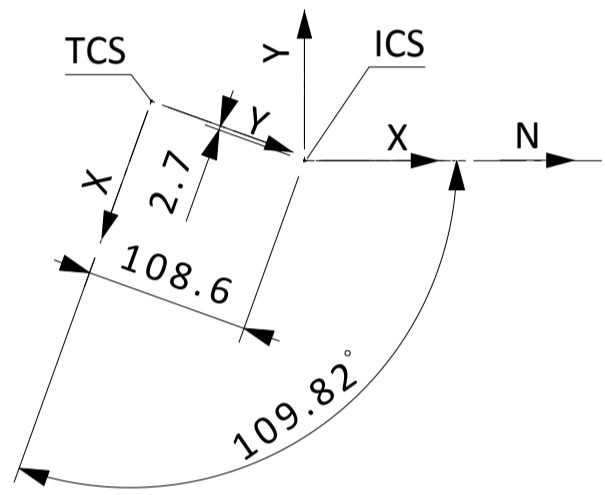
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		FREIA NBOA Assembly	
Linear Dimensions:	ISO 2768-mK	MODELED BY	eriknilsson
Form and Position:	ISO 2768-mK	DRAWING CREATED	22/02/2017
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	DRAWN BY	eriknilsson
SURFACE FINISH	Min. Ra 3.2	DRAWING RELEASED	
Documentation protection as per ISO 16016		CHECKED BY	
 EUROPEAN SPALLATION SOURCE DESIGN SITE ESS Lund		APPROVED BY	
		QUALITY CONTROLLED BY	
		LIFE CYCLE LABEL	
		DRAWING NUMBER	
		ESS-0097204.2	
		Preliminary 1.0 2/2	
		LEVEL OF MATURITY	MC
		SIZE	A1
		SCALE	1:5
Produced to ISO 1101, 8015 and 1302			



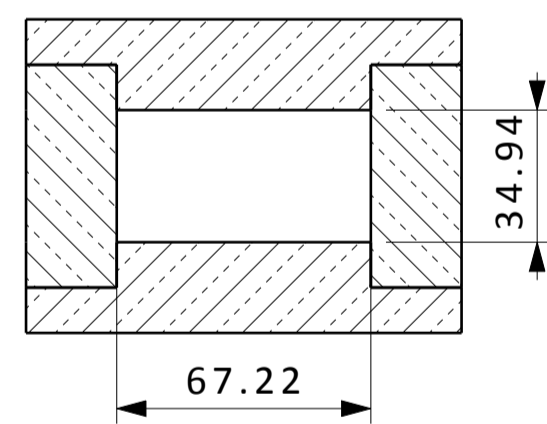
SIDE VIEW



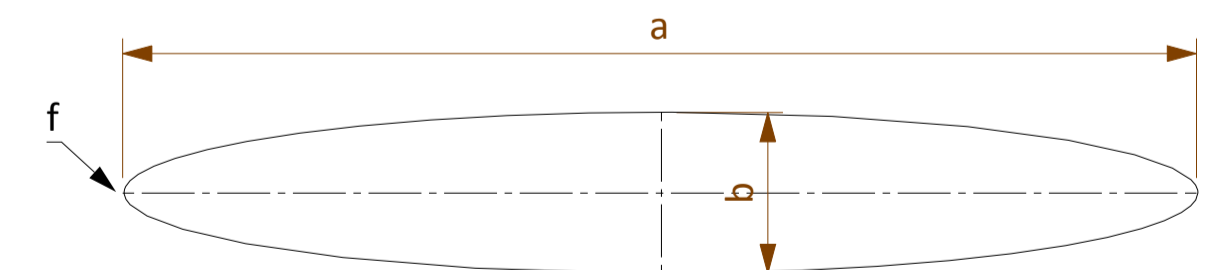
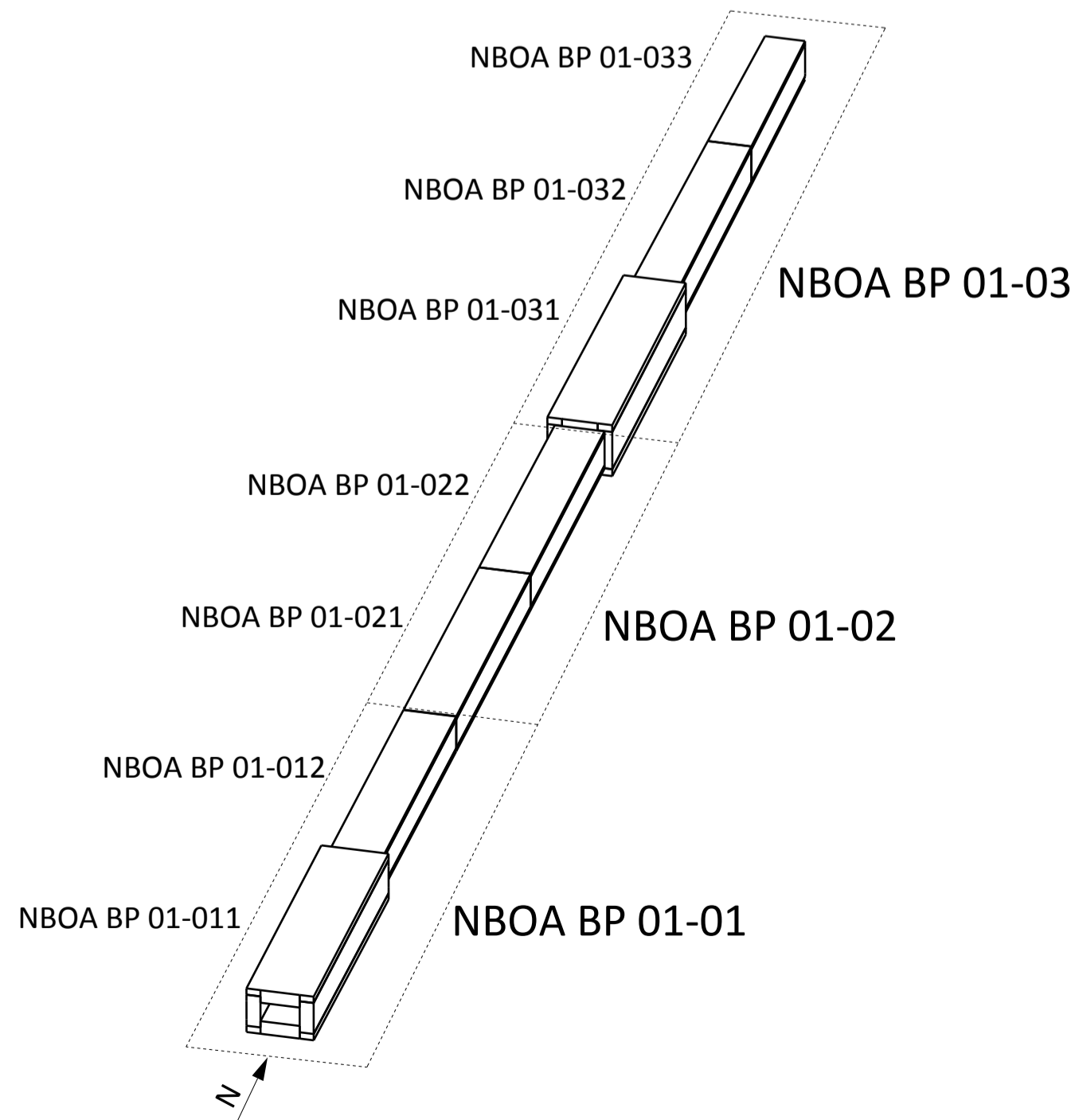
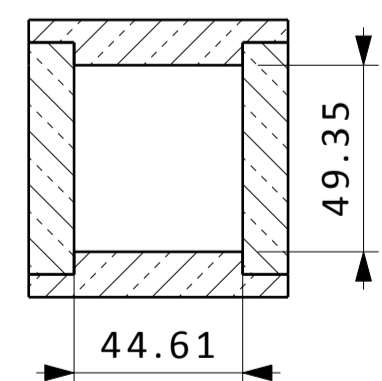
TOP VIEW



SECTION CUT A-A
AT 2018.7mm
SCALE 1:2

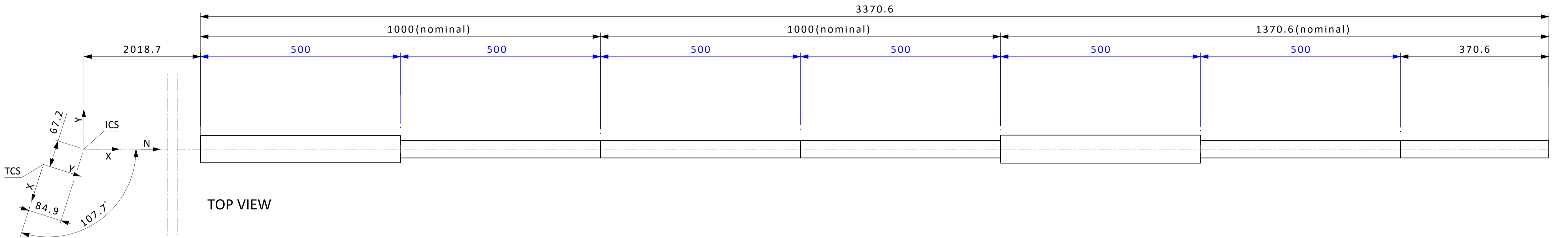
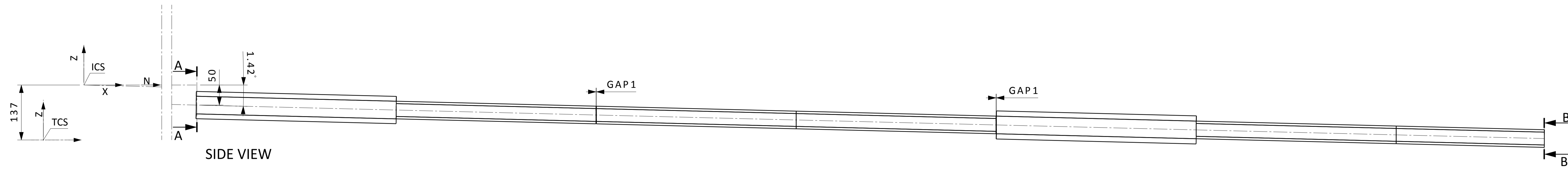


SECTION CUT B-B
AT 5389.1mm
SCALE 1:2

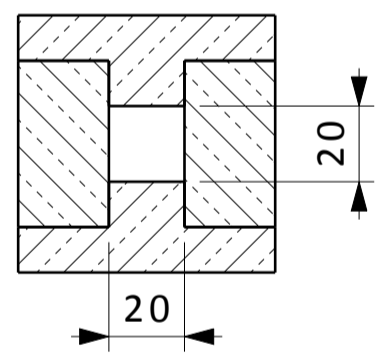


NOTES:
 A: Elliptical top and bottom section. Ellipse with $a=10466.823\text{mm}$, $b=49.446\text{mm}$, $f=488.69\text{mm}$
 B: Elliptical side sections. Ellipse with $a=8244.209\text{mm}$, $b=67.378\text{mm}$, $f=1822.572\text{mm}$

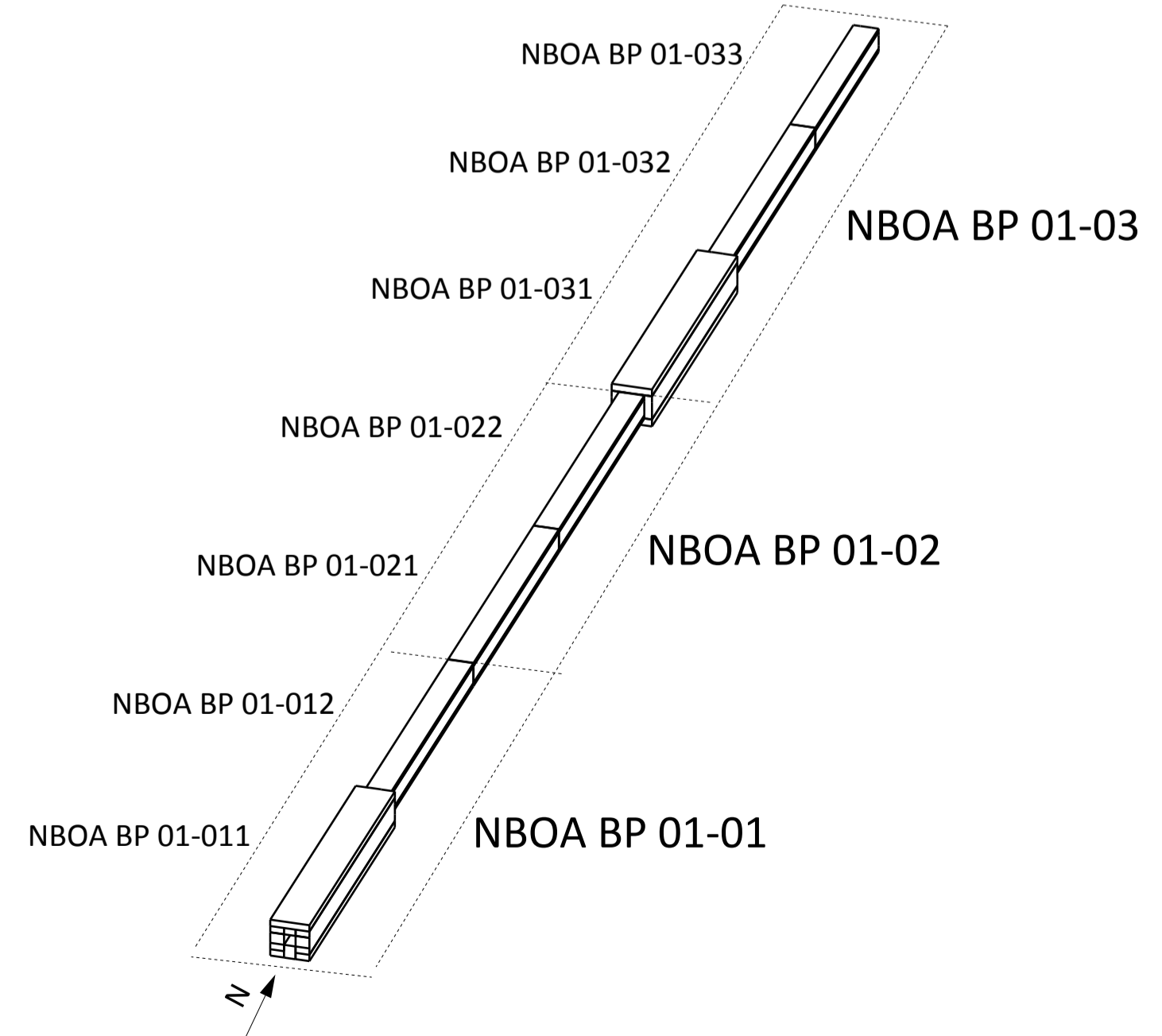
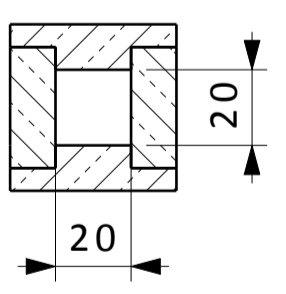
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		HEIMDAL Thermal NBOA Assembly	
Linear Dimensions, Form and Position		R2-RS.5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 22/02/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		DESIGN SITE	APPROVED BY
ESS Lund		QUALITY CONTROLLED BY	LIFECYCLE LABEL
ESS		ESS Lund	REV. SHEET
Preliminary		1.0	1/1
LEVEL OF MATURITY MC		SIZE	SCALE
M4		A1	1:5
Produced to ISO 1101, 8015 and 1302			



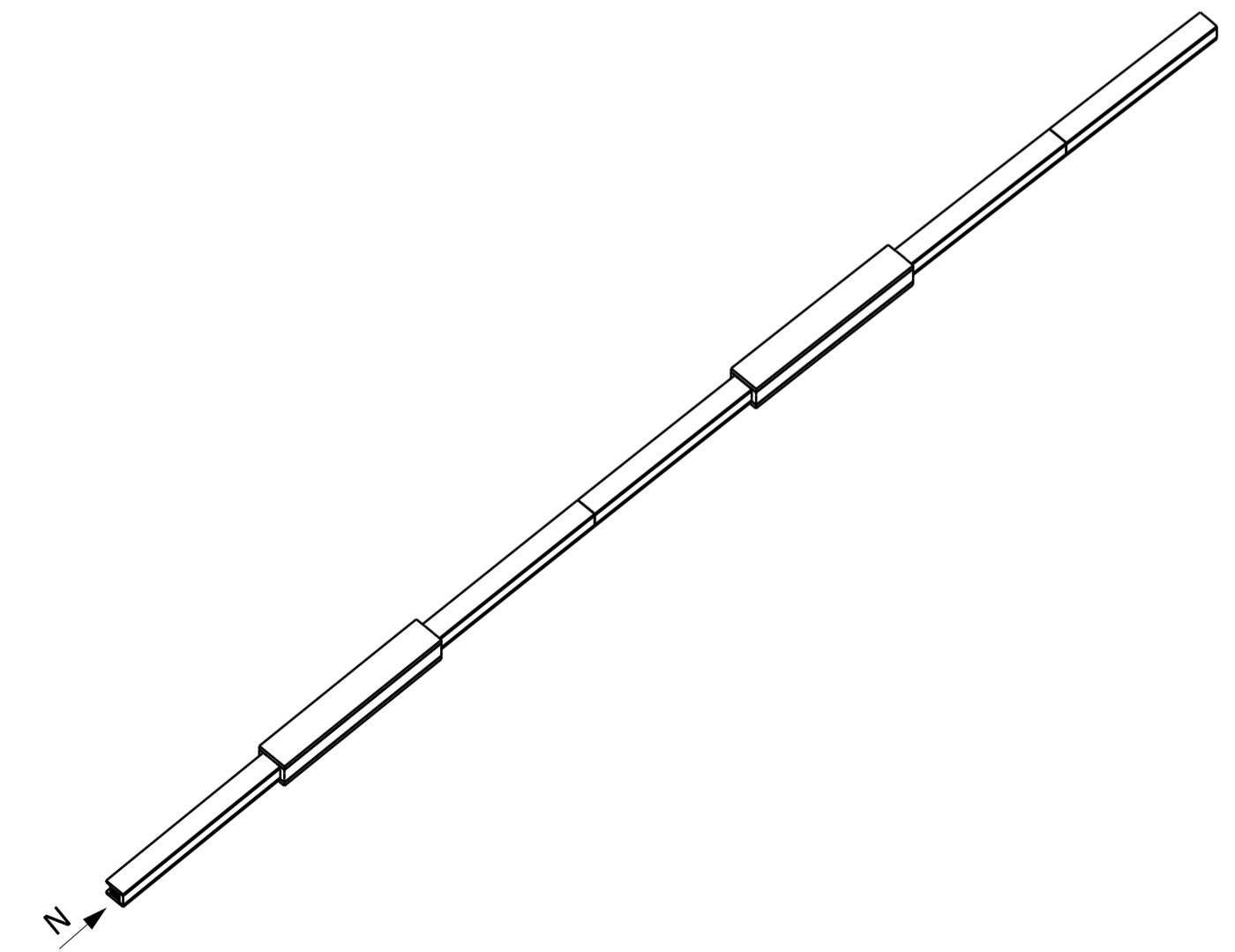
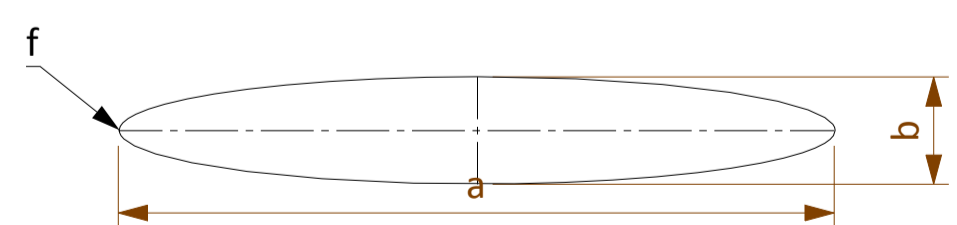
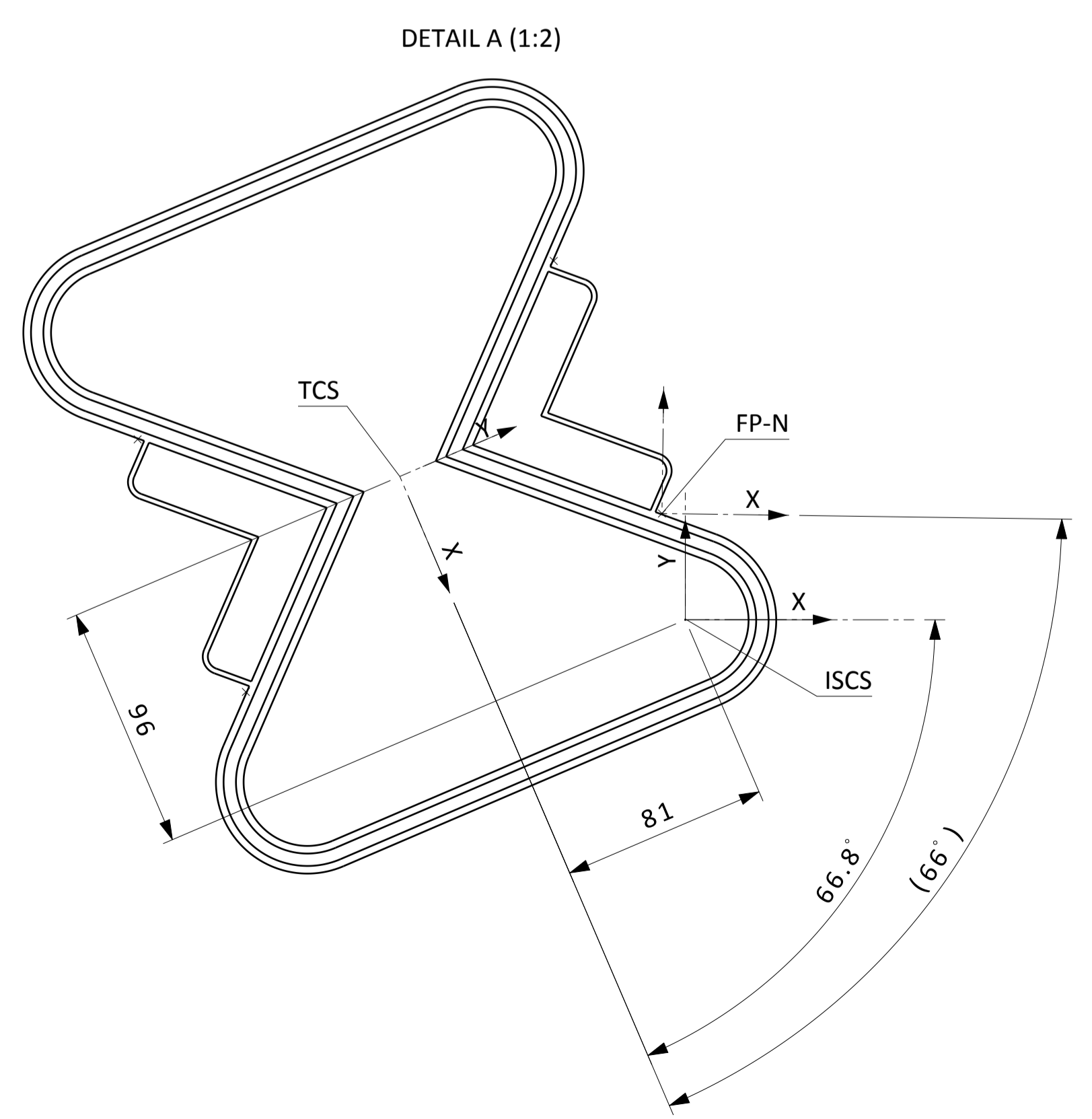
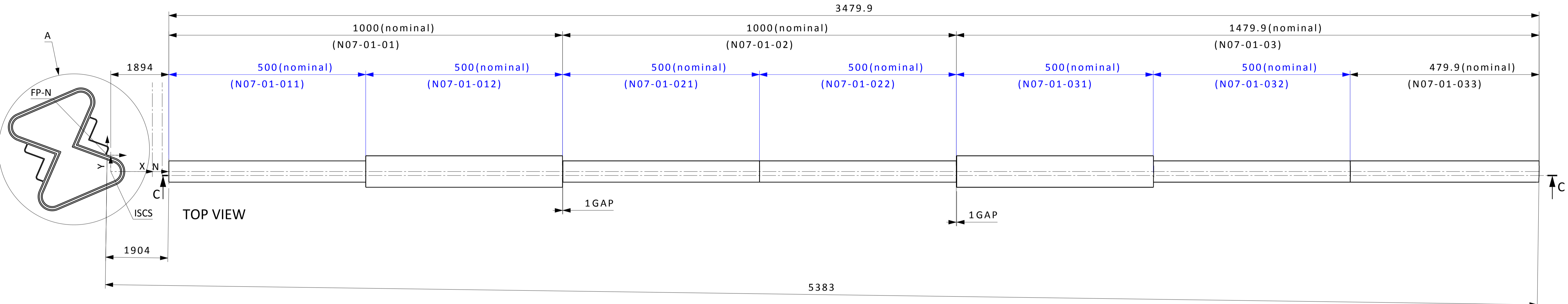
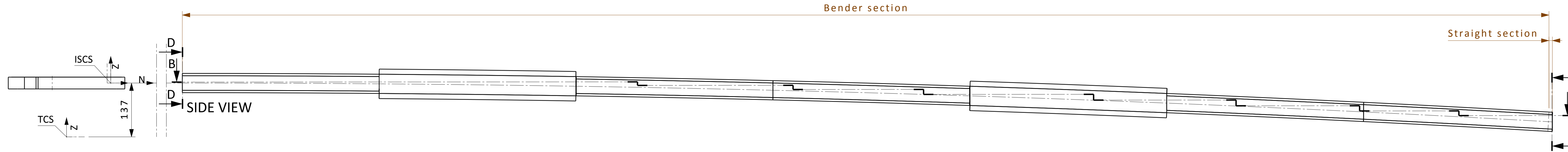
SECTION CUT A-A
AT 2018.7mm
SCALE 1:2



SECTION CUT B-B
AT 5389.3mm
SCALE 1:2

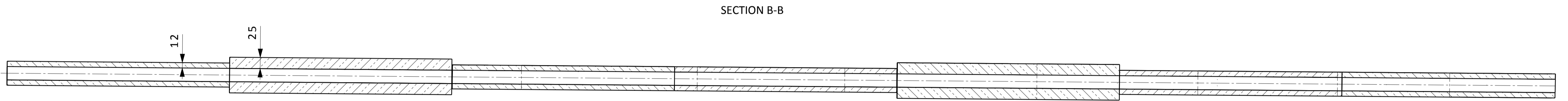
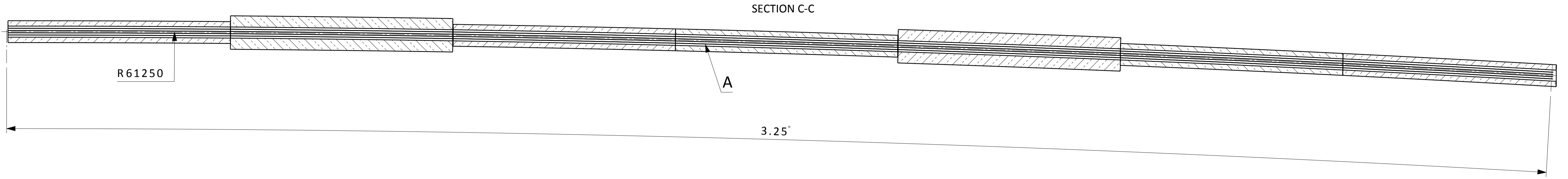


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		HEIMDAL Cold NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 22/02/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		DRAWING NUMBER	
DESIGN SITE		ESS-0097332.2	
ESS Lund		LIFECYCLE LABEL	
APPROVED BY		LEVEL OF MATURITY	REV.
QUALITY CONTROLLED BY		M4	1/1
		SIZE	SCALE
		A1	1:5
Produced to ISO 1101, 8015 and 1302			

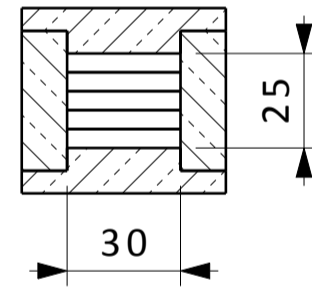


NOTES:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Multichannel Bender: R=61,25m, 5 Channels, M=3
 Implementation on beamport N07

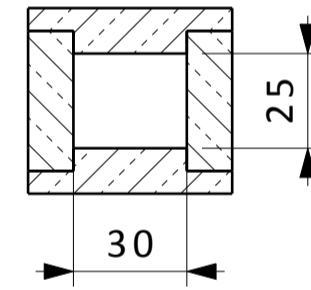
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		LOKI NBOA Assembly	
Linear Dimensions, Form and Position: ISO 2768-mK		R2-R5.5	
Chamfers, Radii and Angular Dim's: ISO 2768-vK		MODELED BY	DRAWING CREATED
SURFACE FINISH: Min. Ra 3.2		eriknilsson	18/04/2017
Documentation protection as per ISO 16016		DRAWN BY	DRAWING RELEASED
eriknilsson		eriknilsson	
CHECKED BY		LIFECYCLE LABEL	
APPROVED BY		Preliminary	REV. SHEET
ESS Lund		1.0	1/2
DESIGN SITE		LEVEL OF MATURITY	MC SIZE SCALE
ESS Lund		M4 A1	1:5
QUALITY CONTROLLED BY		Produced to ISO 1101, 8015 and 1302	



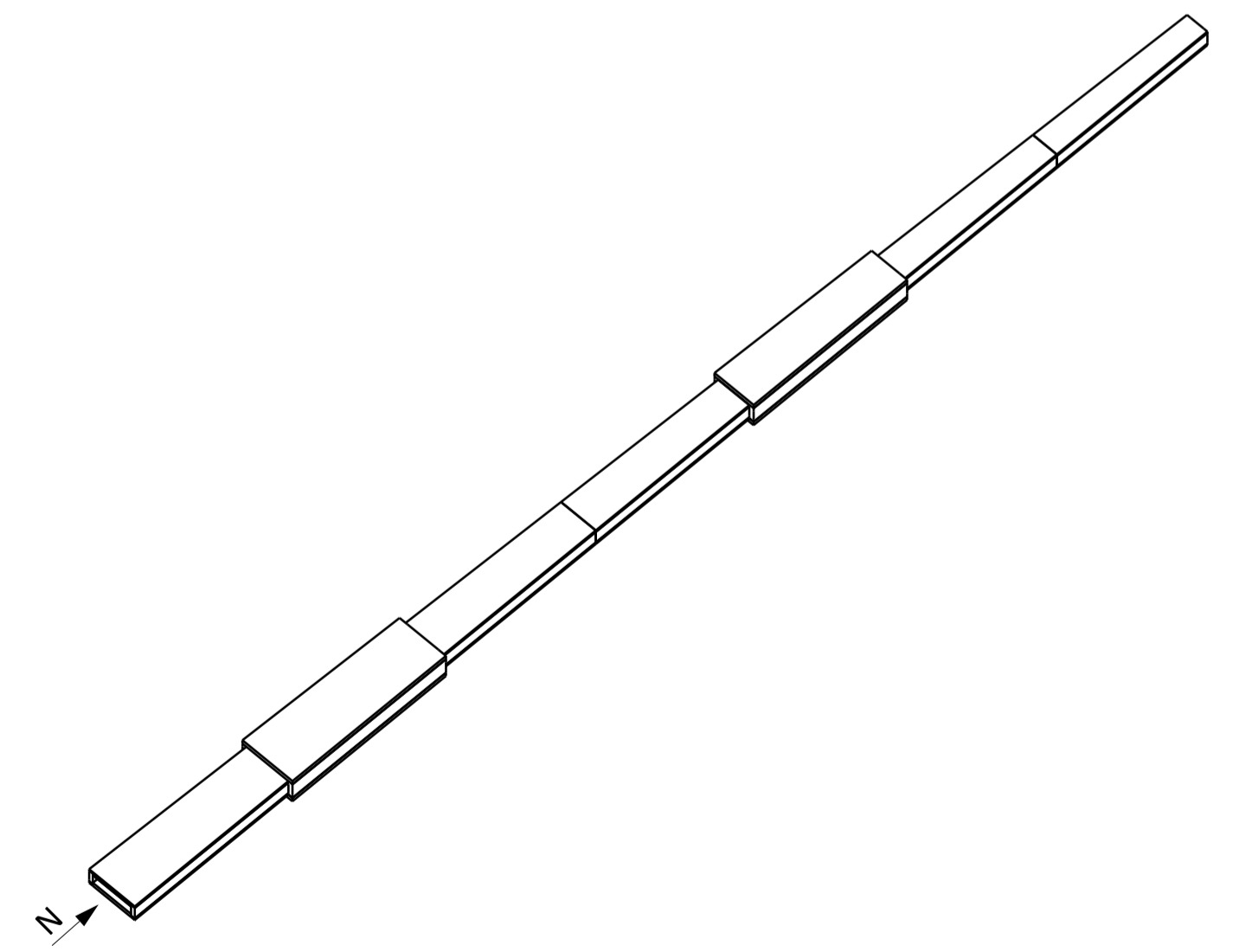
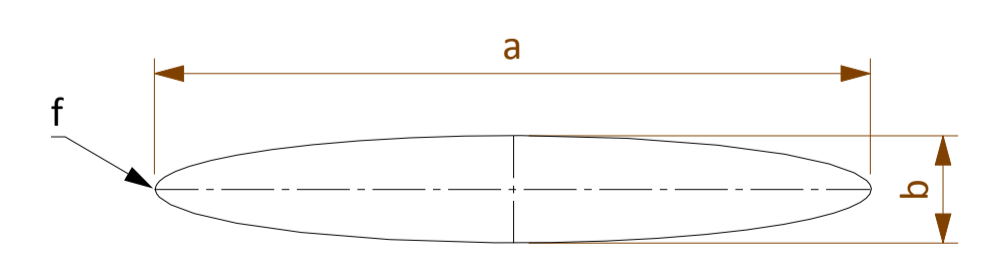
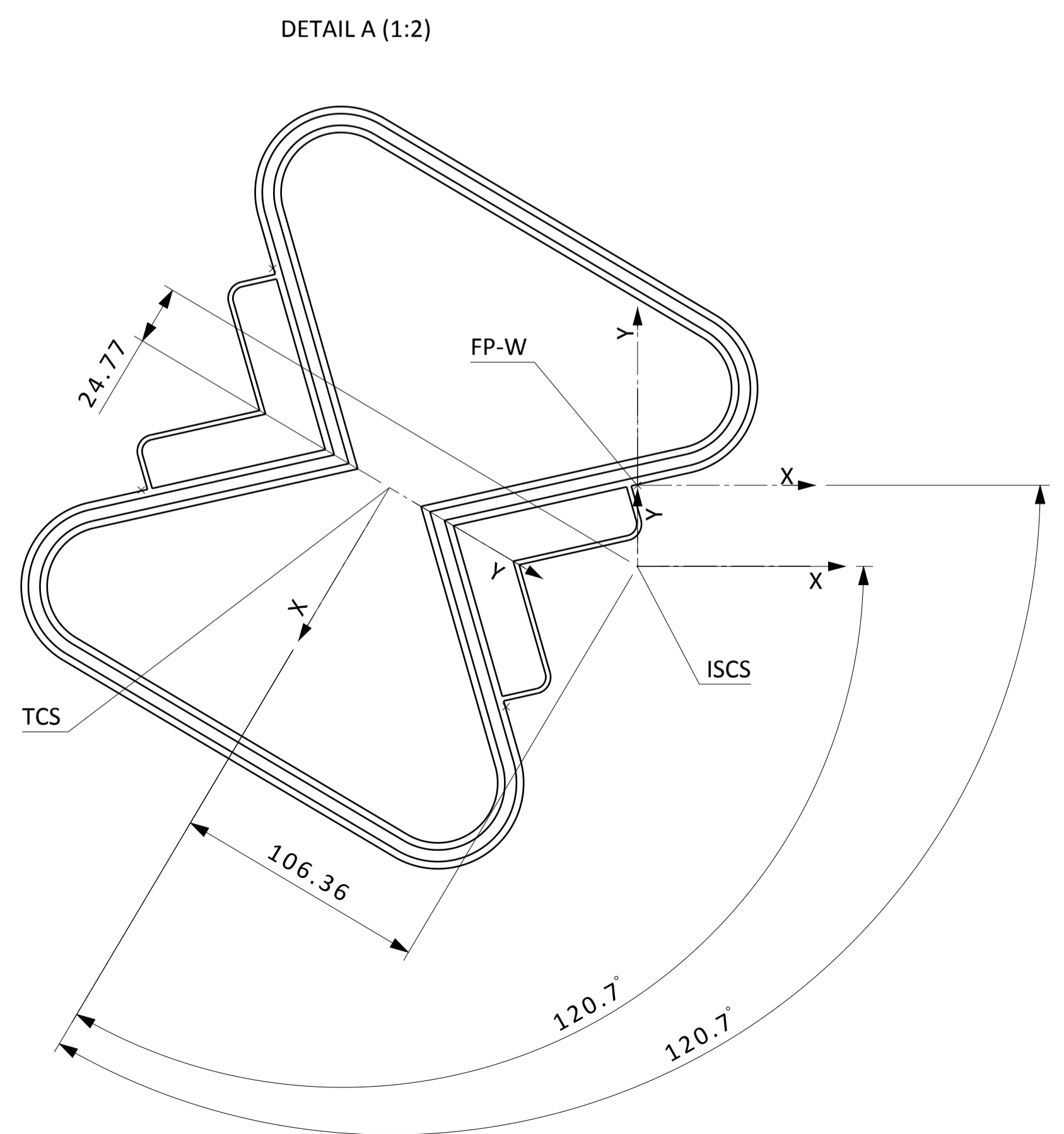
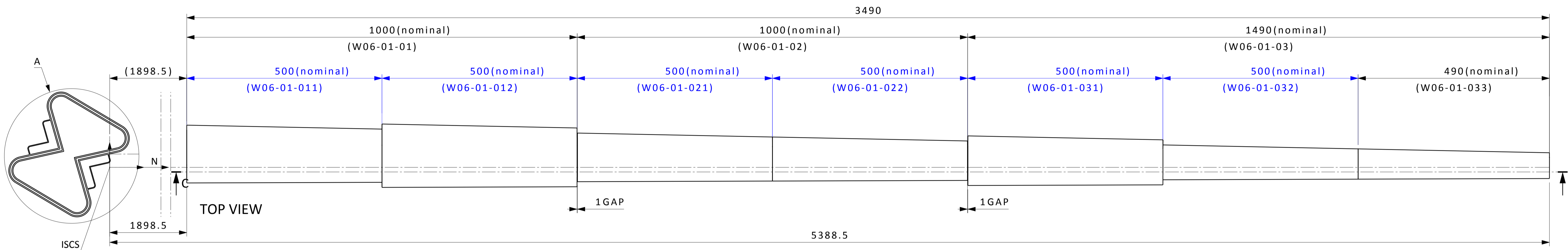
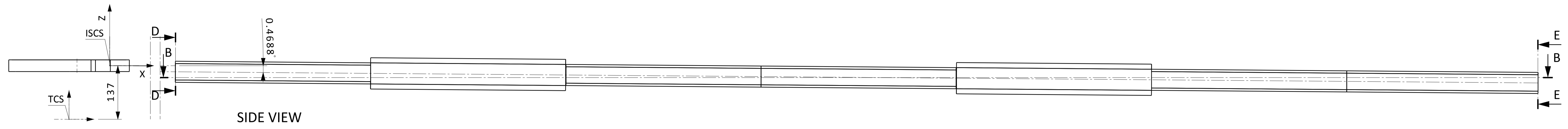
SECTION CUT D-D
AT 1894mm
Scale 1:2



SECTION CUT E-E
AT 5373,9
Scale 1:2

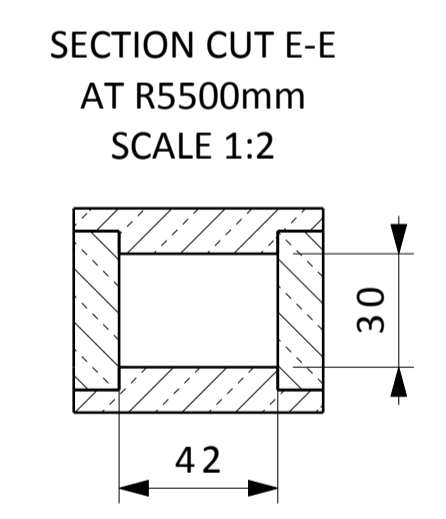
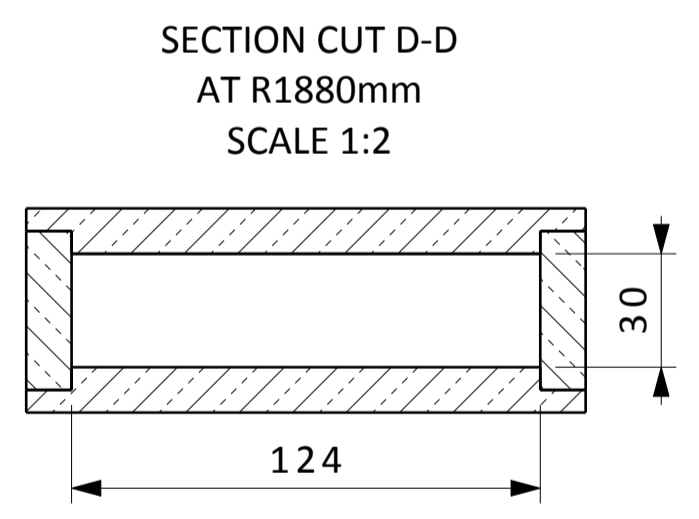
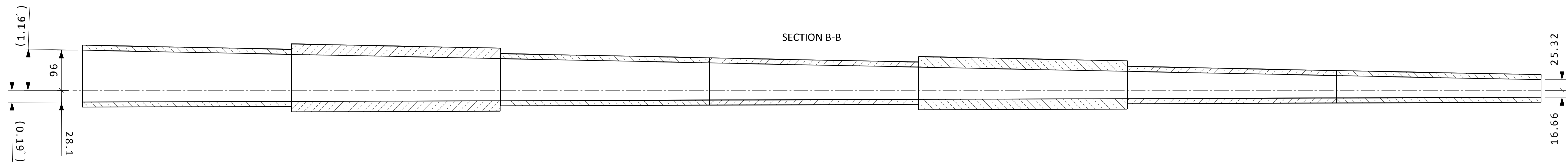
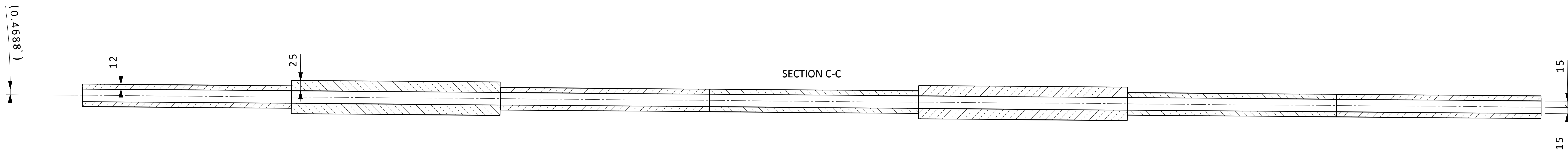


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		LOKI NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5,5	
Chamfers, Radii and Angular Dim's:		MODELED BY	DRAWING CREATED
SURFACE FINISH Min. Ra 3.2		eriknilsson	18/04/2017
Documentation protection as per ISO 16016		DRAWN BY	DRAWING RELEASED
eriknilsson		eriknilsson	
EUROPEAN SPALLATION SOURCE		CHECKED BY	DRAWING NUMBER
DESIGN SITE		APPROVED BY	ESS-0106220.2
ESS Lund		QUALITY CONTROLLED BY	LIFECYCLE LABEL
			REV. SHEET
			Preliminary 1.0 2/2
			LEVEL OF MATURITY MC SIZE SCALE
			M4 A1 1:5
			Produced to ISO 1101, 8015 and 1302

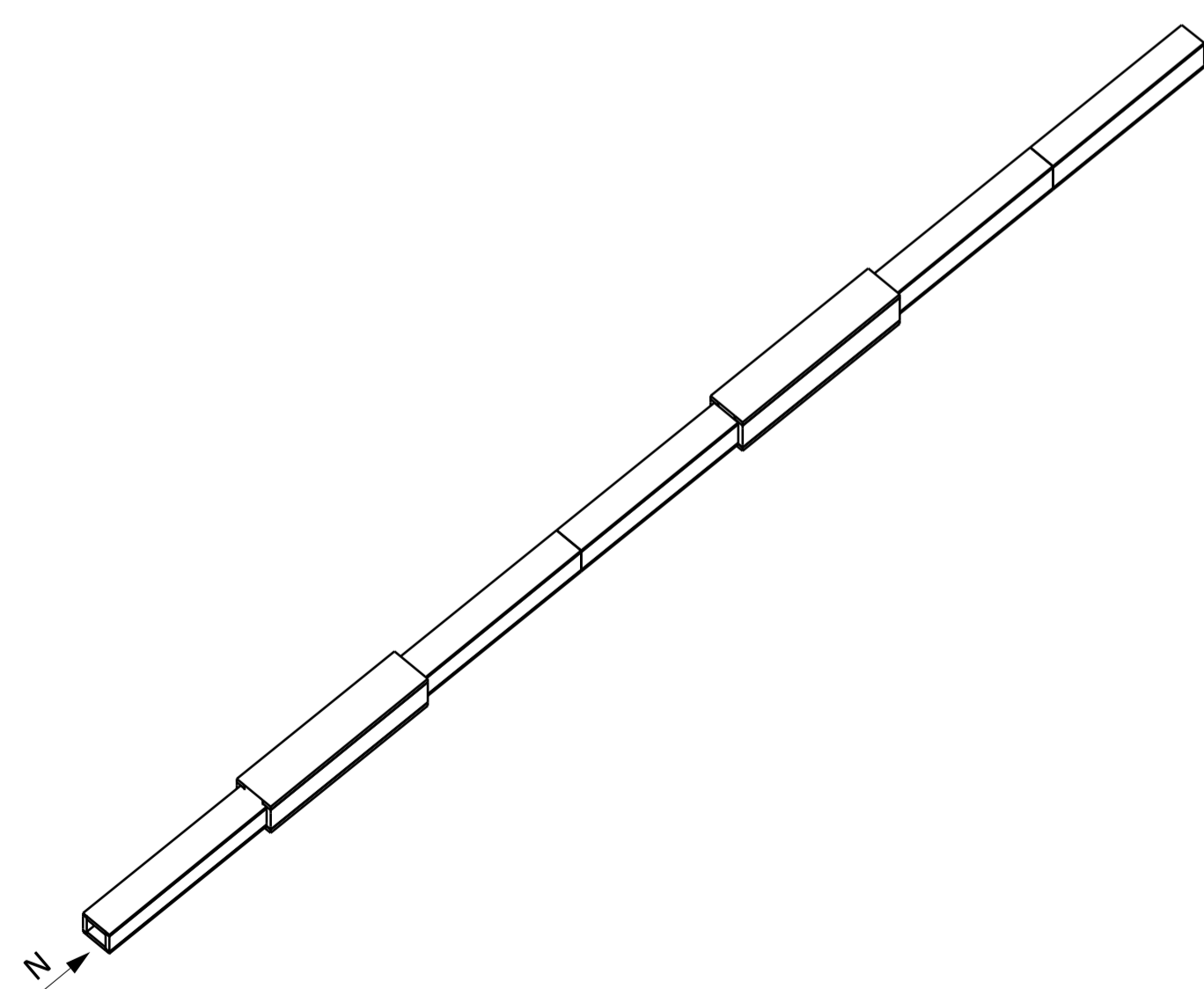
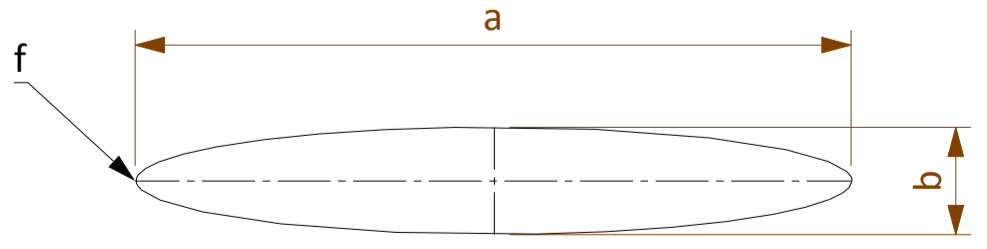
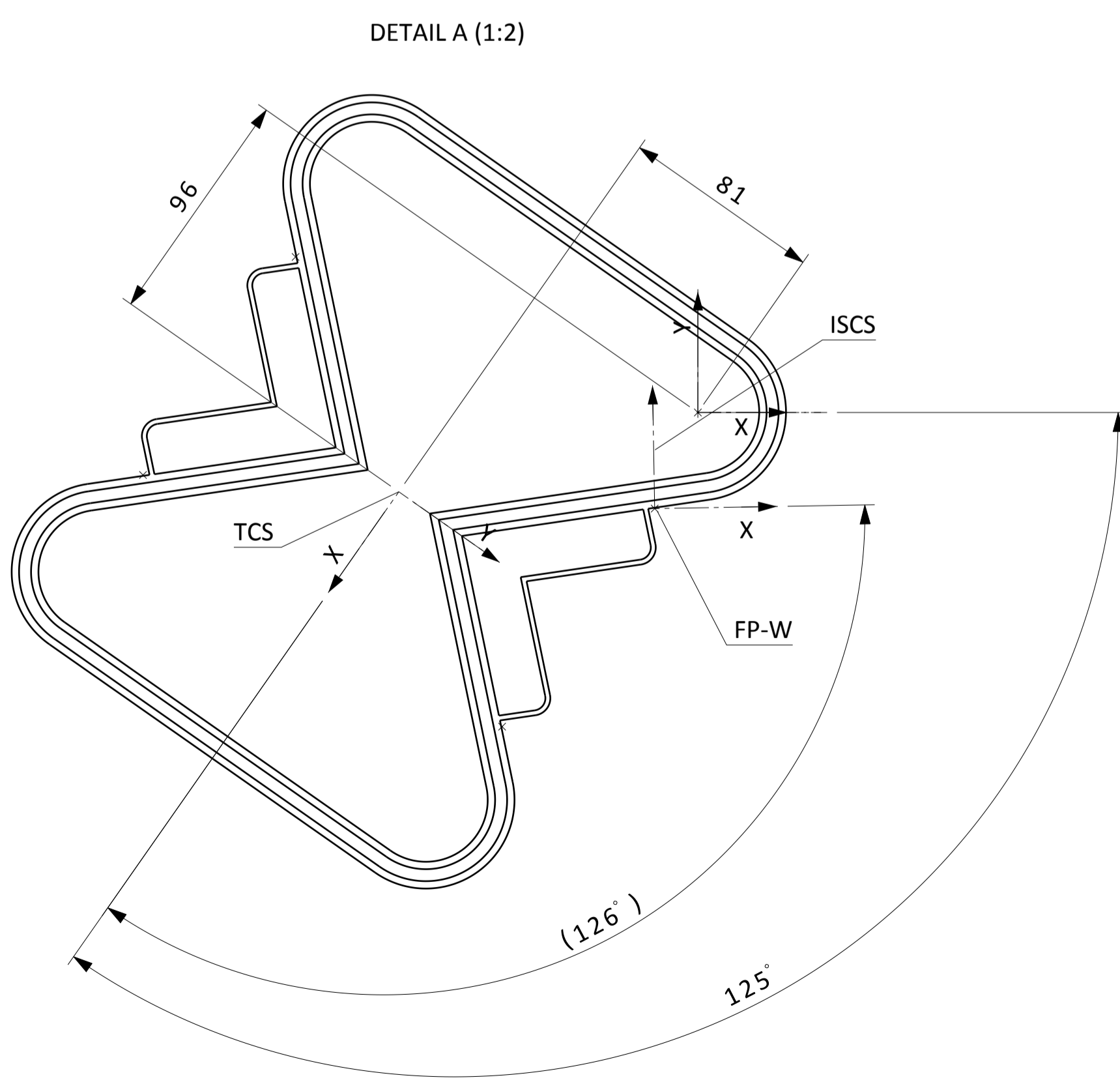
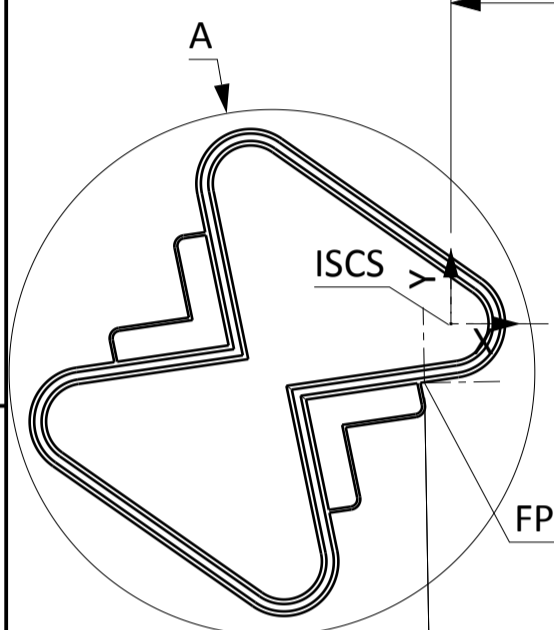
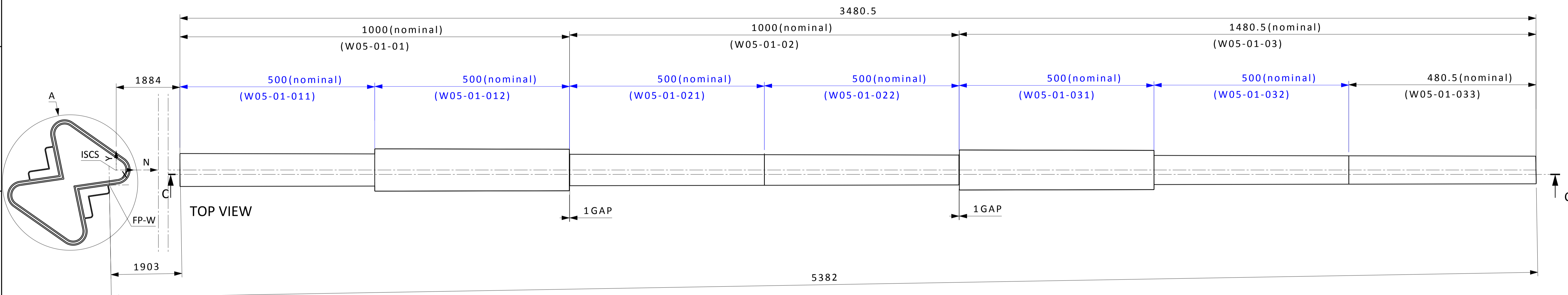
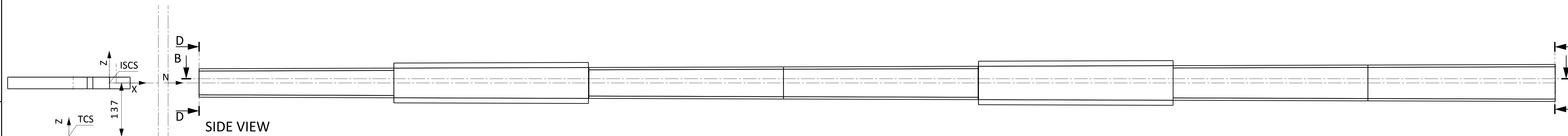


NOTES:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 No coated mirror sections needed in NBOA.
 Implementation on beamport W06

ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		MAGIC NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	DRAWING NUMBER
Chamfers, Radii and Angular Dim's		ISO 2768-mK	ESS-0097539.2
SURFACE FINISH		Min. Ra 3.2	LIFECYCLE LABEL
Documentation protection as per ISO 16016		MODELED BY eriknilsson	REV. 1.0
DESIGN SITE		DRAWING CREATED 23/02/2017	SHEET 1/1
ESS Lund		DRAWN BY eriknilsson	LEVEL OF MATURITY MC
APPROVED BY		CHECKED BY	SIZE A1
QUALITY CONTROLLED BY		APPROVED BY	SCALE 1:5
Produced to ISO 1101, 8015 and 1302			

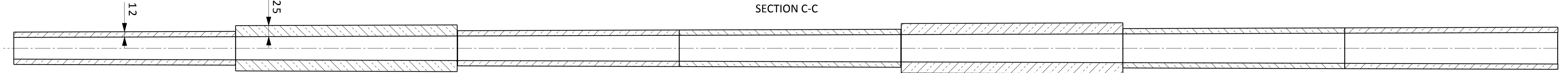


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		MAGIC NBOA Assembly	
Linear Dimensions, Form and Position: ISO 2768-mK		R2-R5.5	
Chamfers, Radii and Angular Dim's: ISO 2768-vK		MODELED BY	DRAWING CREATED
SURFACE FINISH Min. Ra 3.2		eriknilsson	23/02/2017
Documentation protection as per ISO 16016		DRAWN BY	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		eriknilsson	
DESIGN SITE		CHECKED BY	DRAWING NUMBER
ESS Lund			ESS-0097539.2
APPROVED BY		LIFECYCLE LABEL	REV.
QUALITY CONTROLLED BY		Preliminary	1.0
		LEVEL OF MATURITY	SHEET
		M4	1/1
		SIZE	SCALE
		A1	1:5
Produced to ISO 1101, 8015 and 1302			

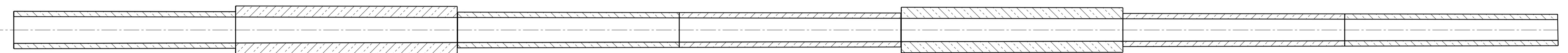


Notes:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 Implementation on beamport W05

ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		MIRACLES NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	
Chamfers, Radii and Angular Dim's		MODELED BY	DRAWING NUMBER
SURFACE FINISH Min. Ra 3.2		eriknilsson	ESS-0098720.2
Documentation protection as per ISO 16016		DRAWN BY	DRAWING RELEASED
ISO 16016		eriknilsson	
EUROPEAN SPALLATION SOURCE		CHECKED BY	LIFECYCLE LABEL
DESIGN SITE		APPROVED BY	REV.
ESS Lund		QUALITY CONTROLLED BY	SHEET
			Preliminary 1.0 1/2
			LEVEL OF MATURITY MC SIZE SCALE
			M4 A1 1:5
			Produced to ISO 1101, 8015 and 1302

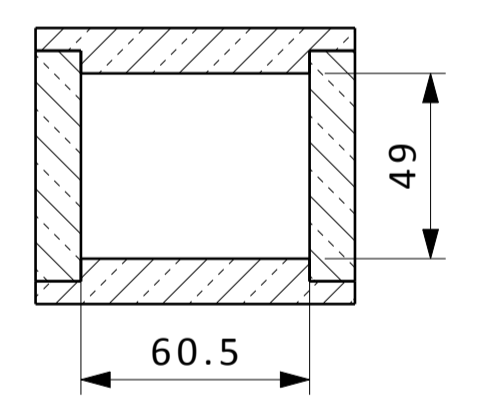


SECTION C-C

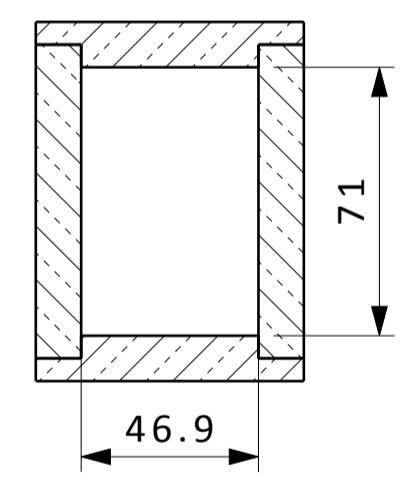


SECTION B-B

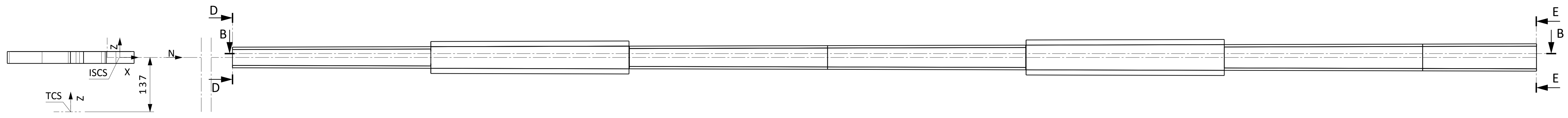
SECTION CUT D-D
AT 1899mm
SCALE 1:2



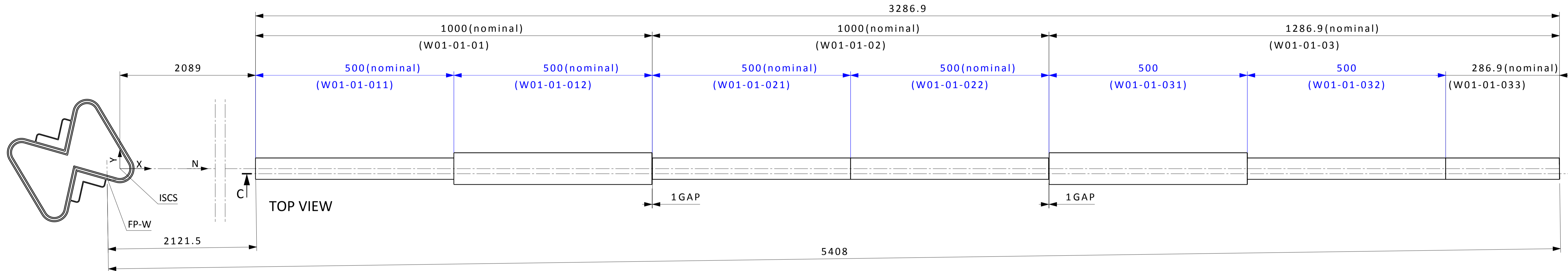
SECTION CUT E-E
AT 5375,4mm
SCALE 1:2



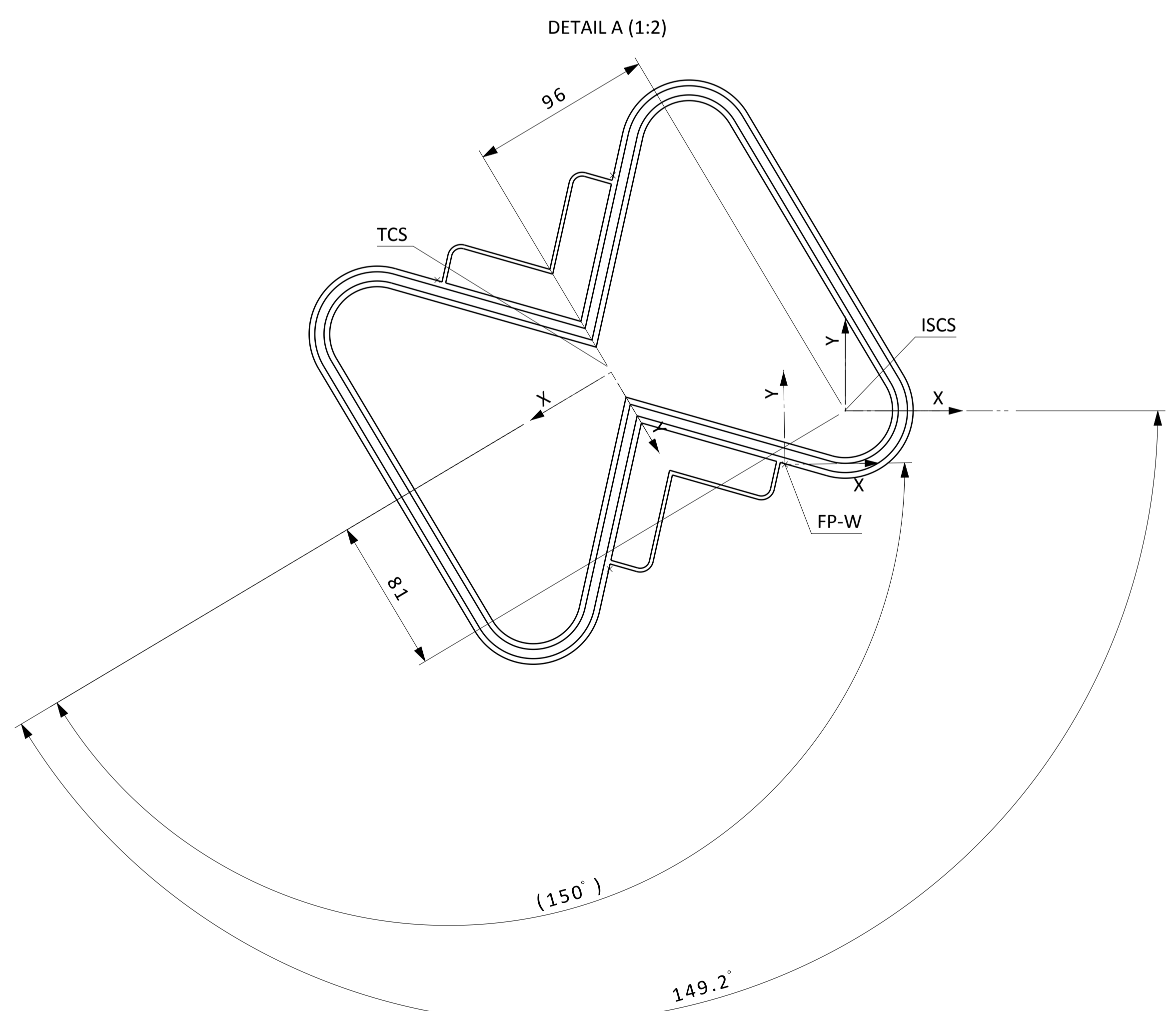
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		- MIRACLES NBOA Assembly	
Linear Dimensions, Form and Positions		R2-R5,5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	eriknilsson
Documentation protection as per ISO 16016		eriknilsson	01/03/2017
EUROPEAN SPALLATION SOURCE		DESIGN SITE	ESS Lund
LIFE CYCLE LABEL		REV.	SHEET
Preliminary		1.0	2/2
LEVEL OF MATURITY		MC	SCALE
M4		A1	1:5
Produced to ISO 1101, 8015 and 1302			



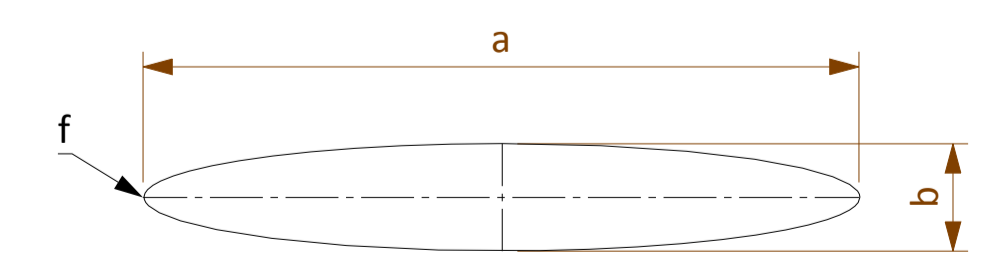
SIDE VIEW



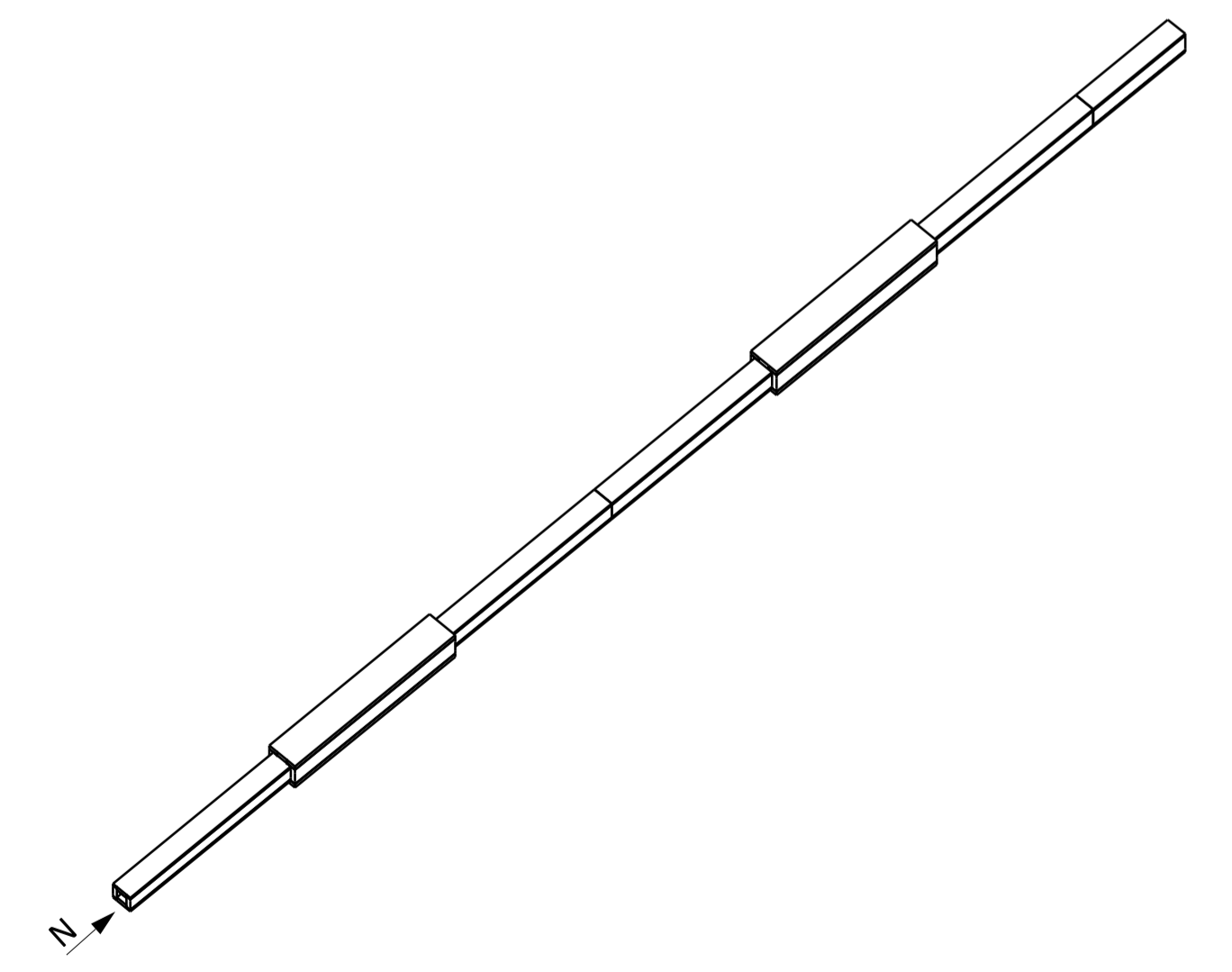
TOP VIEW



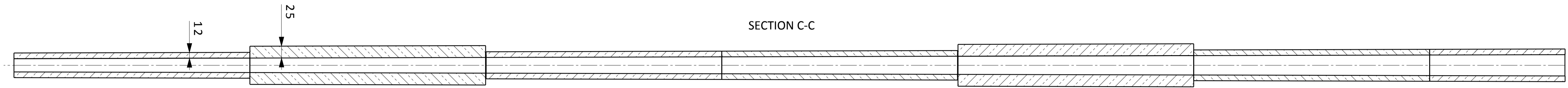
DETAIL A (1:2)



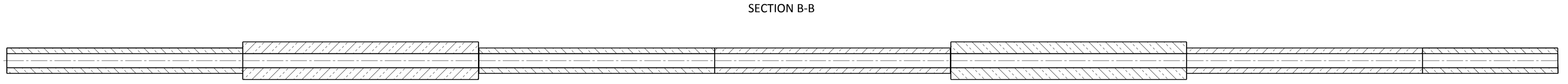
Notes:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 Implementation on beamport W01



ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		NMX NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	18/04/2017
Documentation protection as per ISO 16016		DRAWN BY eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		DESIGN SITE	
ESS Lund		CHECKED BY	
APPROVED BY		DRAWING NUMBER	
QUALITY CONTROLLED BY		ESS-0106554.2	
LIFE CYCLE LABEL		REV.	SHEET
Preliminary		1.0	1/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1	1:5	
Produced to ISO 1101, 8015 and 1302			

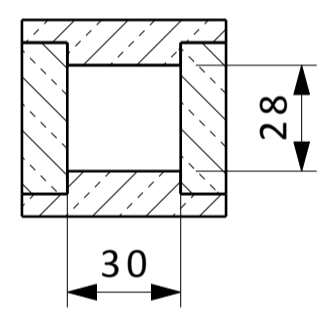


SECTION C-C

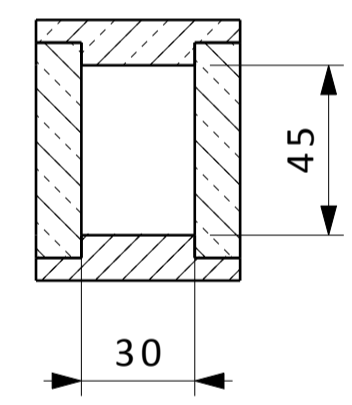


SECTION B-B

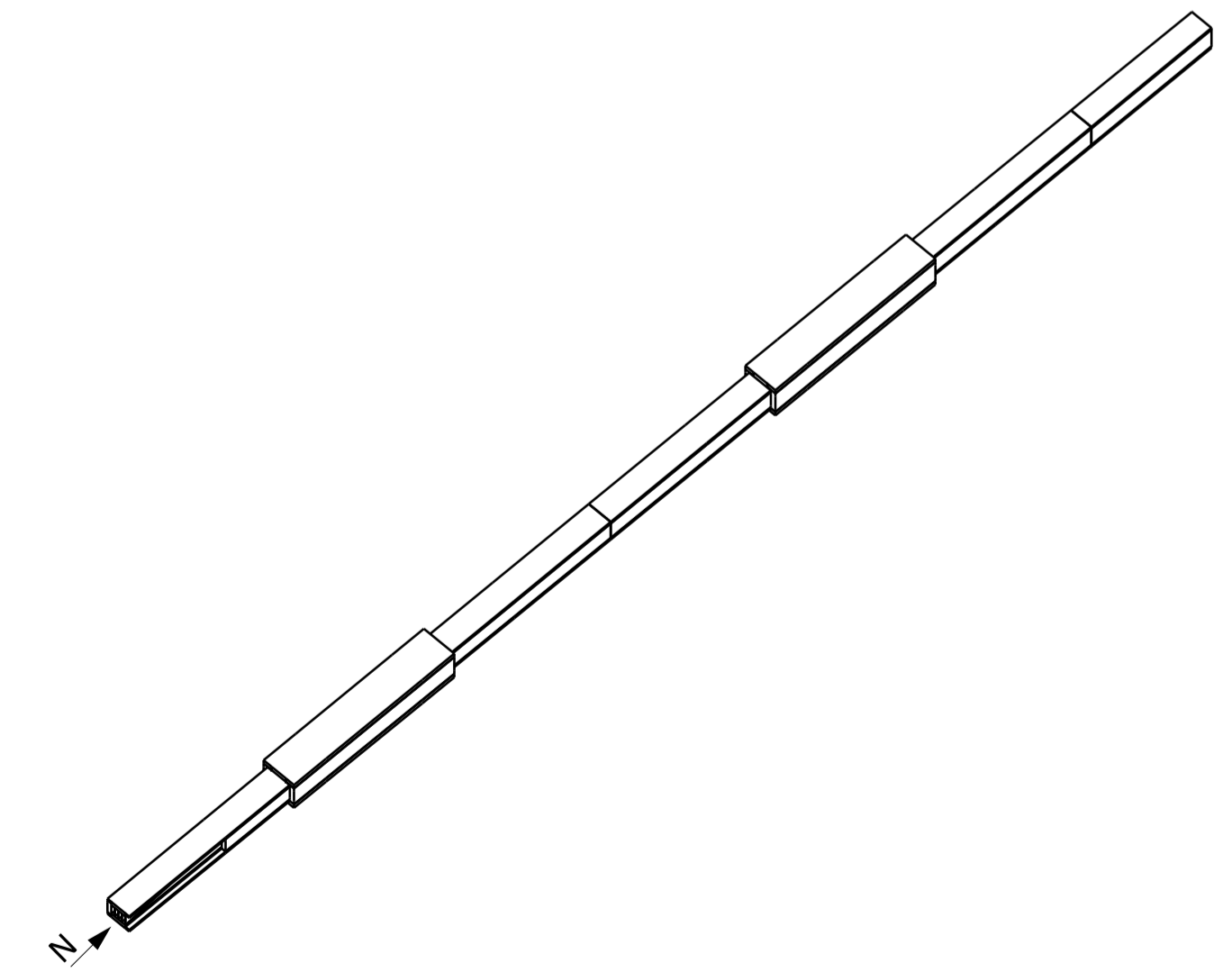
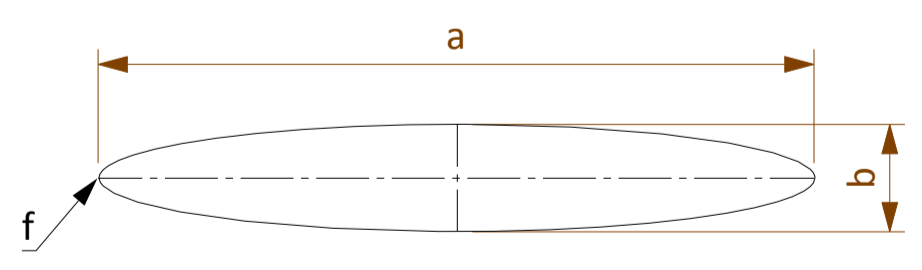
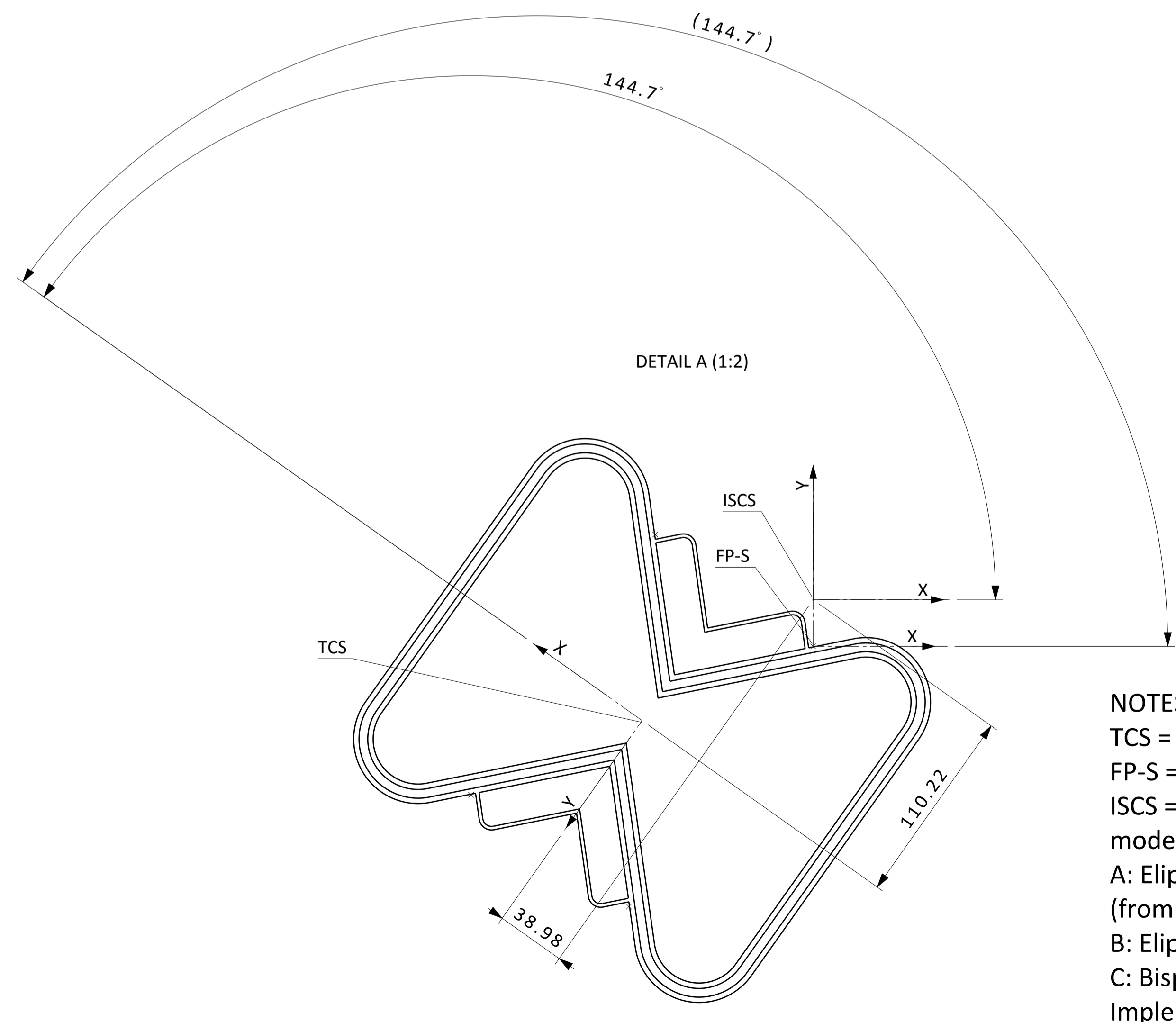
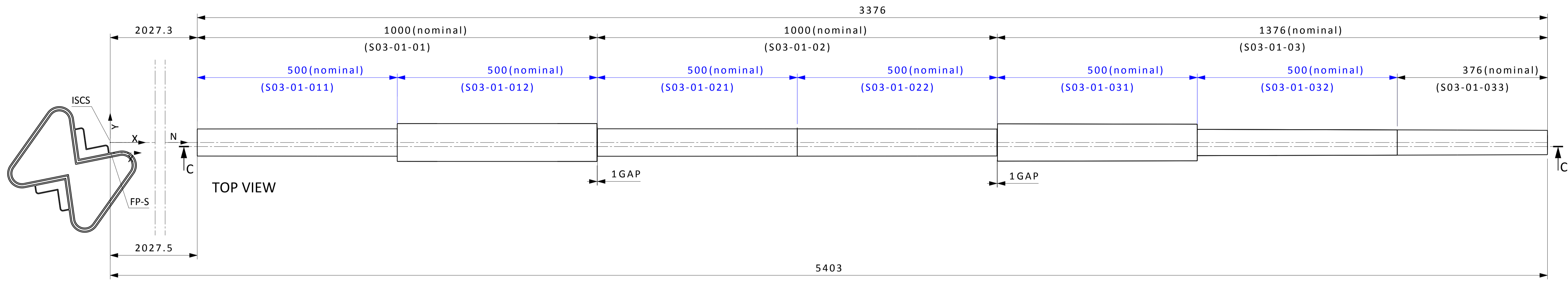
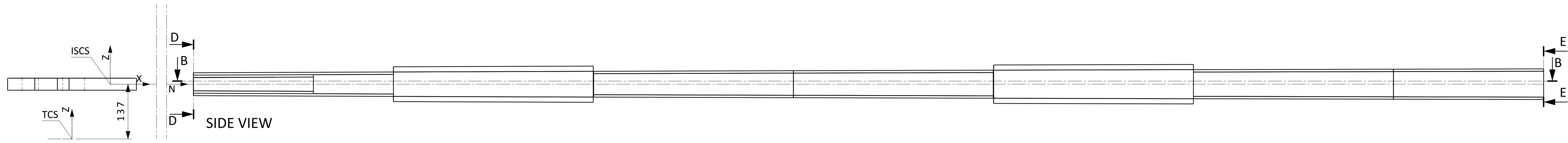
SECTION A-A
AT 2089mm
SCALE 1:2



SECTION B-B
AT 5375,9mm
SCALE 1:2

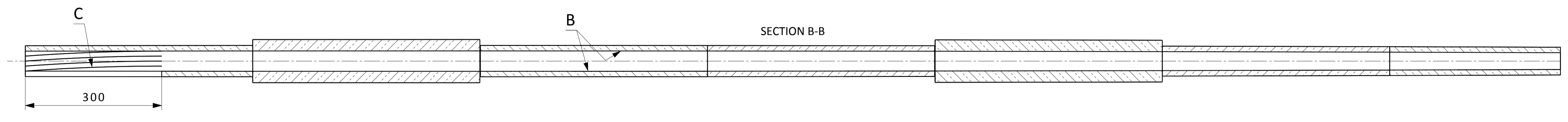
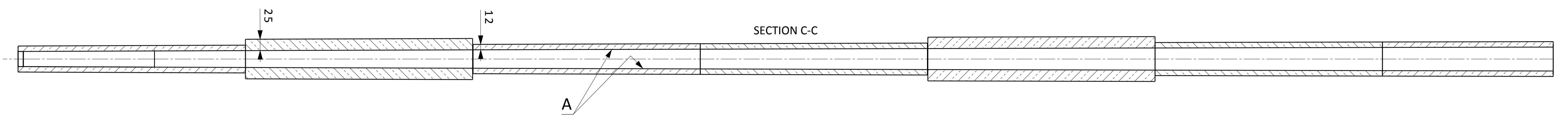


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		- NMX NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5,5	
Chamfers, Radii and Angular Dim's:		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 18/04/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		DRAWN BY eriknilsson	
DESIGN SITE ESS Lund		CHECKED BY	
APPROVED BY		DRAWING NUMBER ESS-0106554.2	
QUALITY CONTROLLED BY		LIFECYCLE LABEL	
Produced to ISO 1101, 8015 and 1302		REV. SHEET Preliminary 1.0 2/2	
		LEVEL OF MATURITY MC SIZE SCALE M4 A1 1:5	

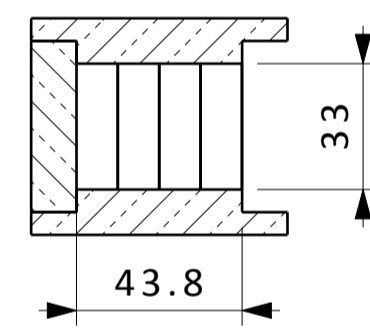


NOTES:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with $a=36000,054\text{mm}$, $b=74,336\text{mm}$, $f=126,856\text{mm}$ (from ISCS). Geometry simplified by 300mm long straight sections.
 B: Elliptical side sections. Ellipse with $a=8700,114\text{mm}$, $b=44,798\text{mm}$, $f=-1412,648\text{mm}$ (from ISCS)
 C: Bispectral blades with $m=5$
 Implementation on beamport S03

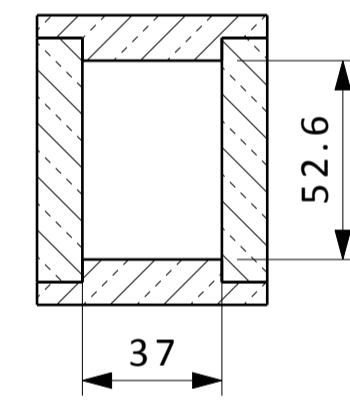
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		ODIN NBOA Assembly variant 1	
Linear Dimensions, Form and Position:	ISO 2768-mK	MODELED BY	eriknilsson
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	DRAWING CREATED	27/02/2017
SURFACE FINISH	Min. Ra 3.2	DRAWING RELEASED	
Documentation protection as per ISO 16016		DRAWN BY	eriknilsson
EUROPEAN SPALLATION SOURCE		CHECKED BY	
DESIGN SITE		APPROVED BY	
ESS Lund		QUALITY CONTROLLED BY	
LIFE CYCLE LABEL		REV.	SHEET
Preliminary		1.0	1/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1		1:5
Produced to ISO 1101, 8015 and 1302			




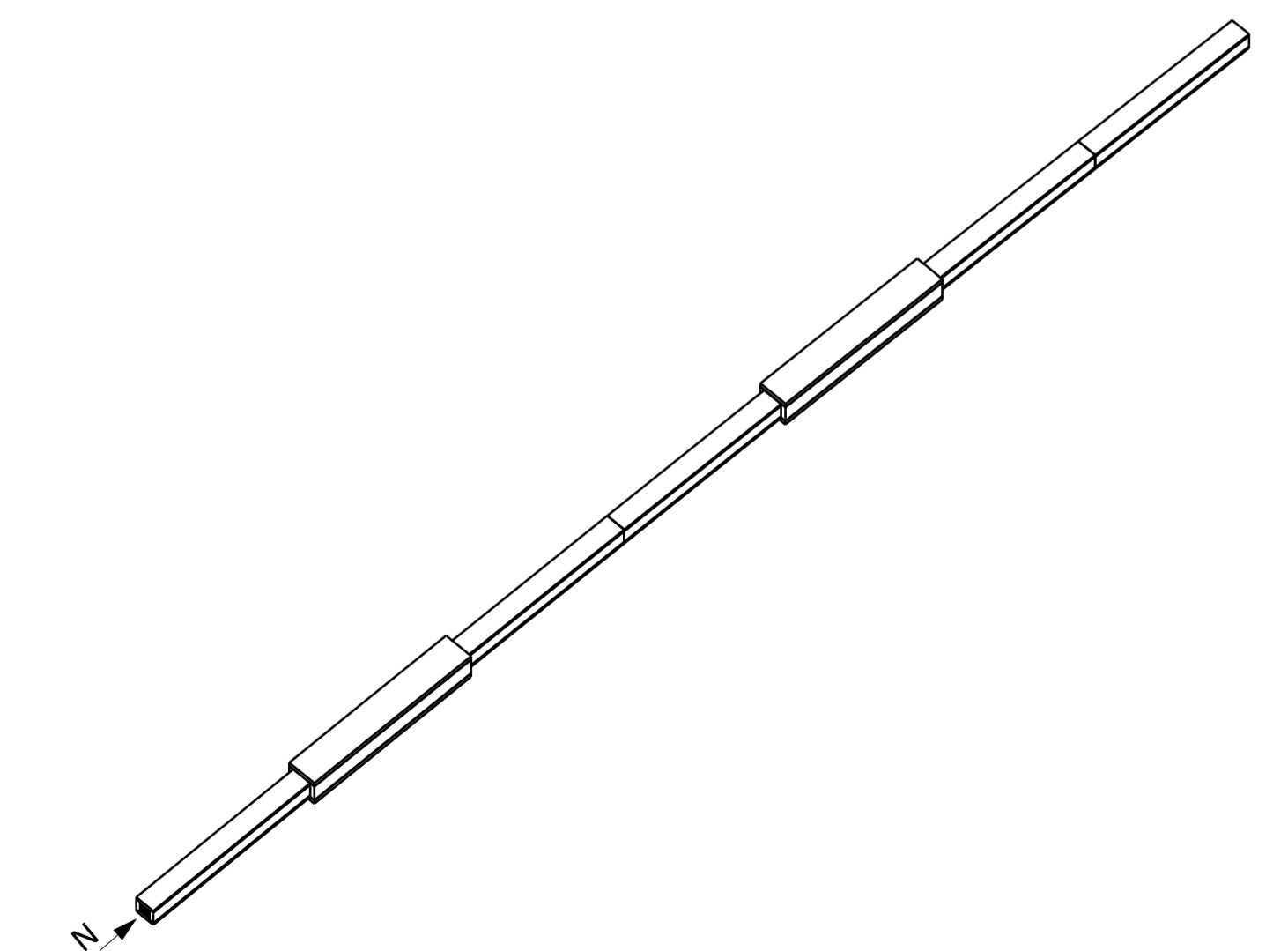
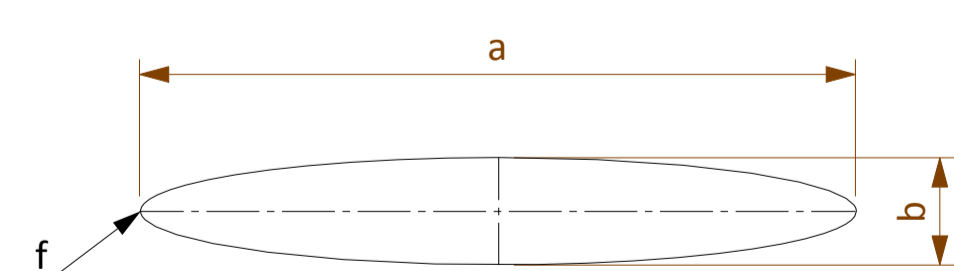
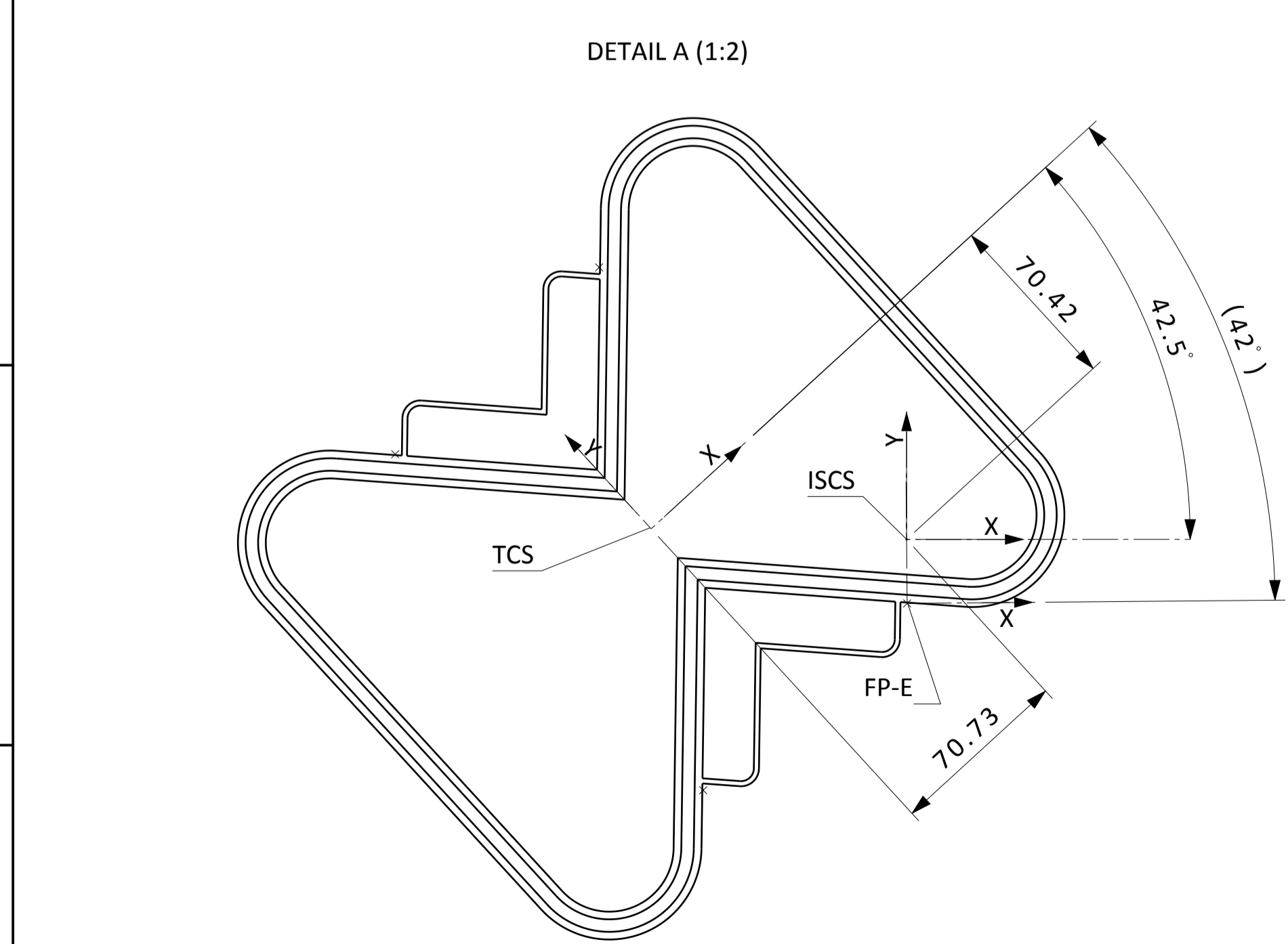
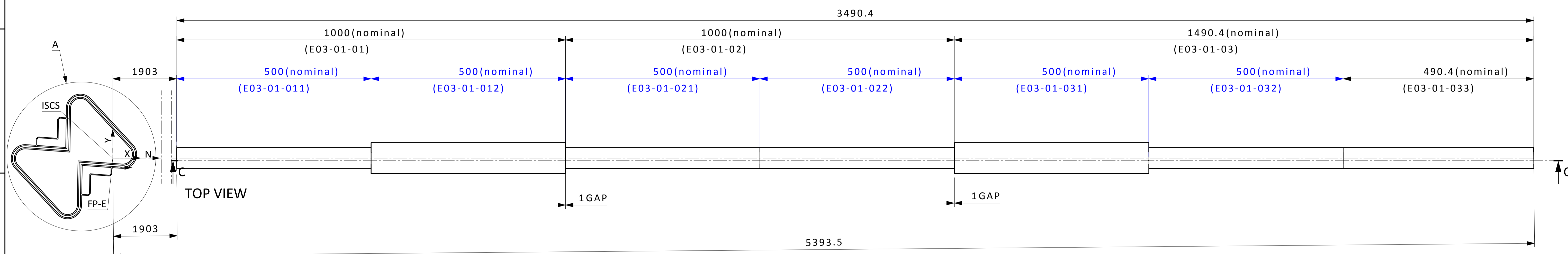
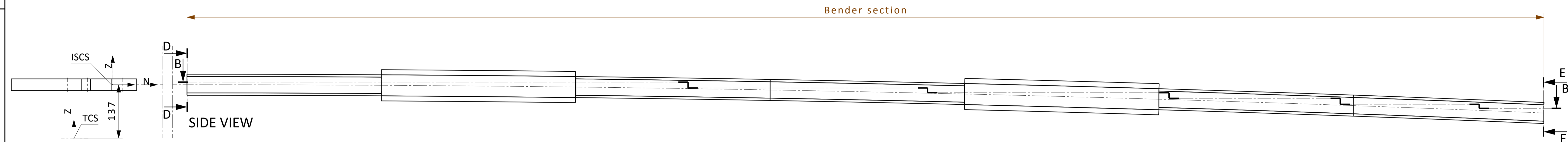
SECTION CUT D-D
AT 2027,5mm
SCALE 1:2



SECTION CUT E-E
AT 5403,5mm
SCALE 1:2

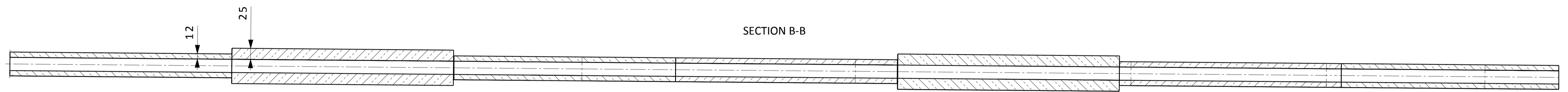
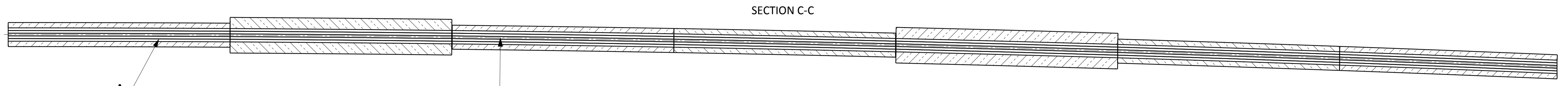


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		- ODIN NBOA Assembly variant 1	
Linear Dimensions, Form and Positions:	ISO 2768-mK	MODELED BY	R2-RS.5
Chamfers, Radii and Angular Dim's:	ISO 2768-vK	eriknilsson	27/02/2017
SURFACE FINISH	Min. Ra 3.2	DRAWN BY	eriknilsson
Documentation protection as per	ISO 16016	CHECKED BY	
 EUROPEAN SPALLATION SOURCE DESIGN SITE ESS Lund	APPROVED BY	DRAWING NUMBER	
	QUALITY CONTROLLED BY	ESS-0098215.2	
LIFECYCLE LABEL		REV.	SHEET
Preliminary		1.0	2/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1		1:5
Produced to ISO 1101, 8015 and 1302			

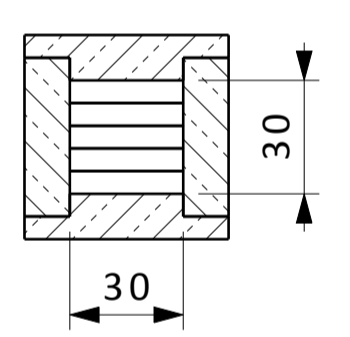


NOTES:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
 A: Multichannel Bender: R=80m, 5 Channels, M=4
 Implementation on beamport E03

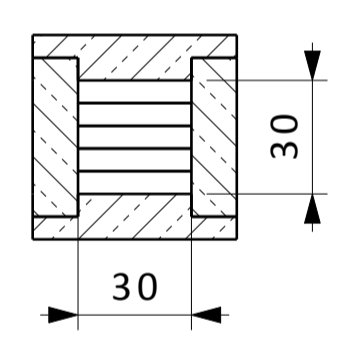
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		SKADI NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	DRAWING NUMBER
Chamfers, Radii and Angular Dim's		ISO 2768-mK	eriknilsson
SURFACE FINISH		Min. Ra 3.2	DRAWING RELEASED
Documentation protection as per		ISO 16016	eriknilsson
EUROPEAN SPALLATION SOURCE		DESIGN SITE	APPROVED BY
ESS Lund		ESS Lund	QUALITY CONTROLLED BY
LIFECYCLE LABEL		REV.	SHEET
Preliminary		1.0	1/2
LEVEL OF MATURITY		MC	SCALE
M4		A1	1:5
Produced to ISO 1101, 8015 and 1302			



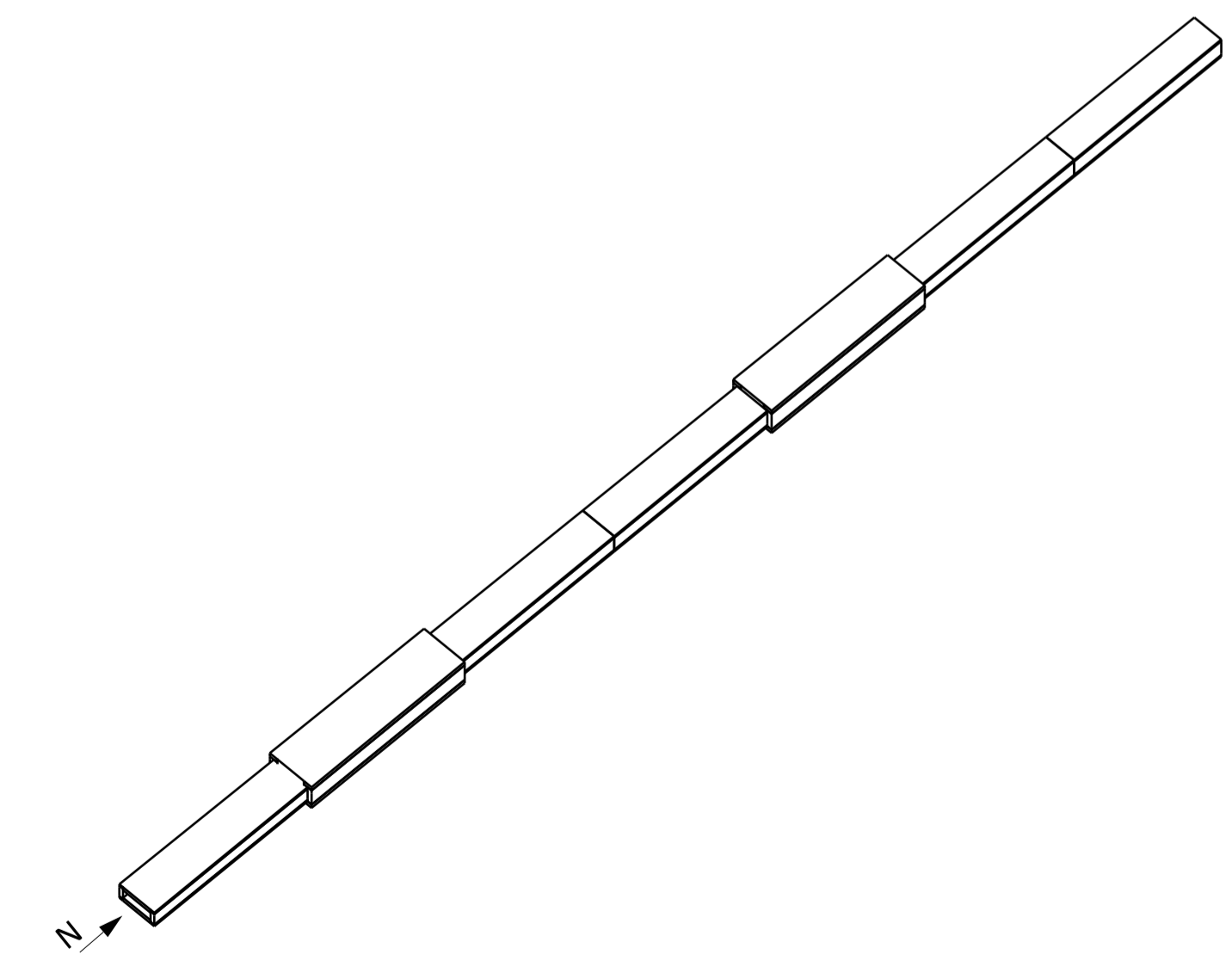
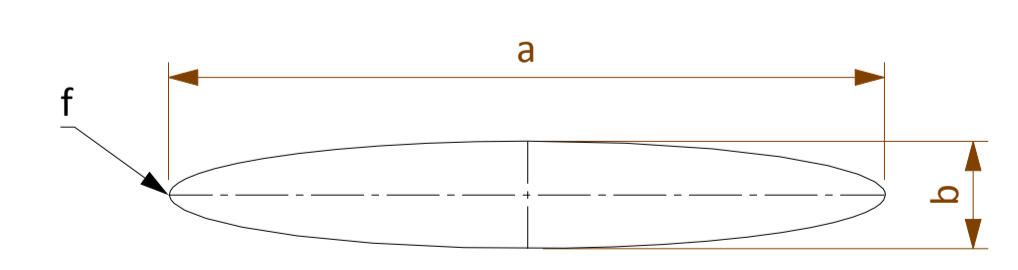
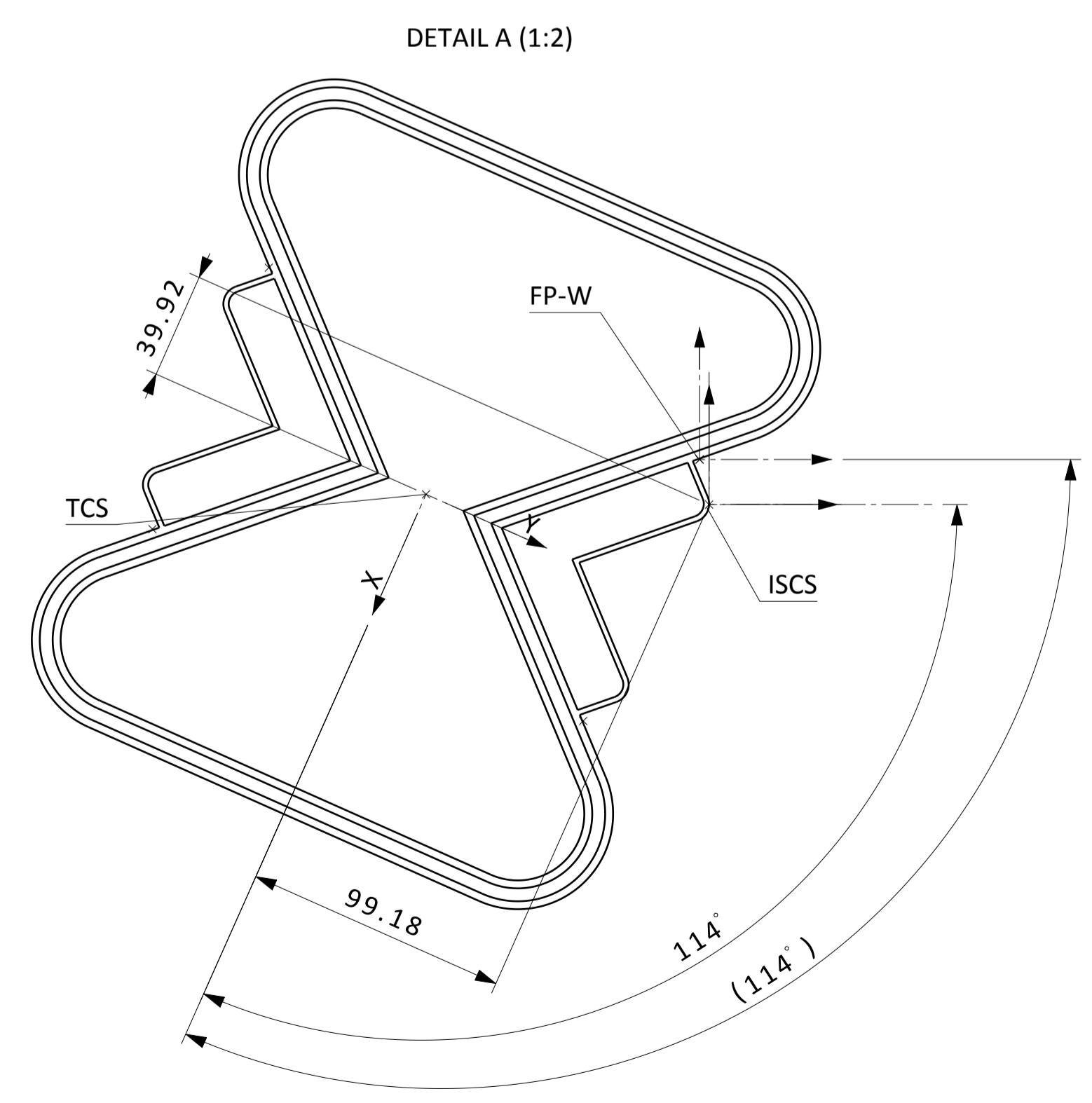
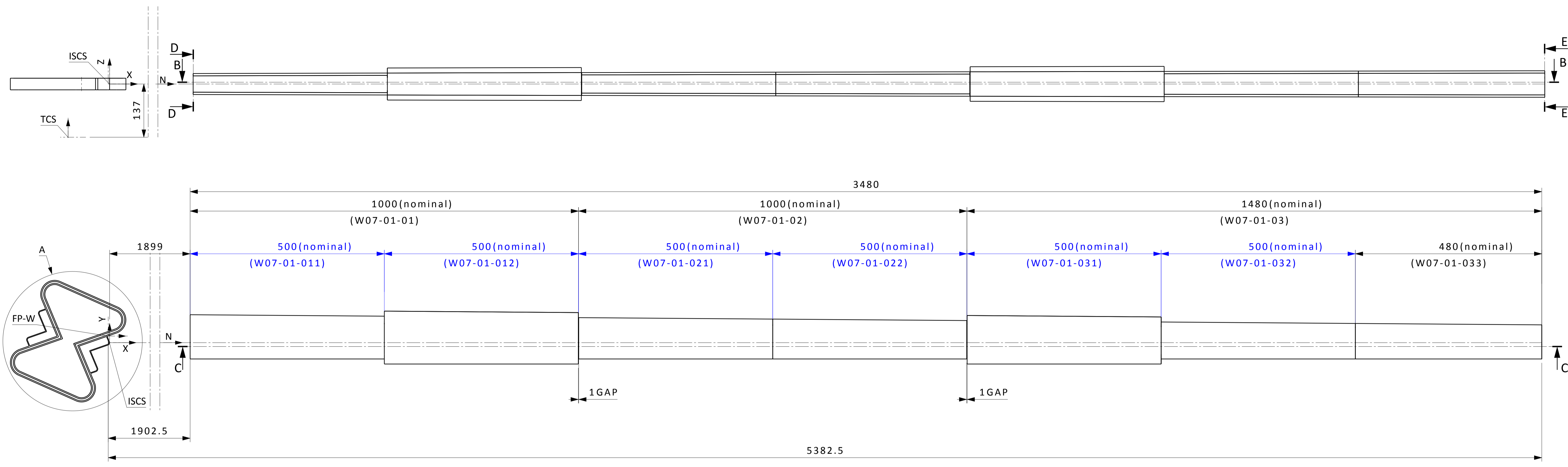
SECTION CUT D-D
AT 1903mm
Scale 1:2



SECTION CUT E-E
AT 5393,4
Scale 1:2

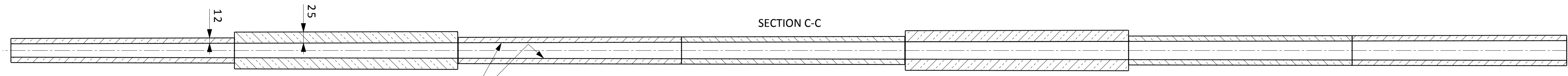


ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		SKADI NBOA Assembly	
Linear Dimensions, Form and Position:		R2-R5,5	DRAWING NUMBER
Chamfers, Radii and Angular Dim's:		ISO 2768-mK	ESS-0098816.2
SURFACE FINISH Min. Ra 3.2		MODELED BY eriknilsson	DRAWING CREATED 01/03/2017
Documentation protection as per ISO 16016		DRAWN BY eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		CHECKED BY	LIFECYCLE LABEL
DESIGN SITE ESS Lund		APPROVED BY	REV. 1.0
		QUALITY CONTROLLED BY	SHEET 2/2
			LEVEL OF MATURITY MC M4
			SIZE A1
			SCALE 1:5
			Produced to ISO 1101, 8015 and 1302

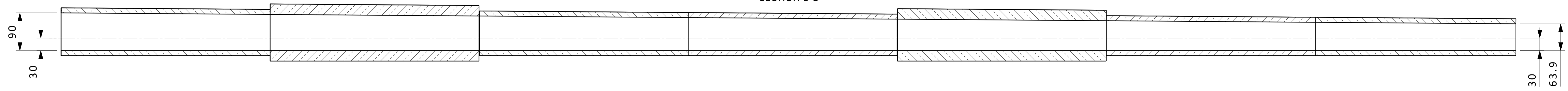


Notes:
 TCS = Target coordinate system
 FP-S = Moderator south sector focal point.
 ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator.
 Defined by instrument team as translation and/or rotation from TCS.
 A: Elliptical top and bottom section. Ellipse with a=85075,84mm, b=85,02mm, f=-843,38mm (From ISCS)
 Implementation on beamport W07

ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		T-REX NBOA Assembly	
Linear Dimensions, Form and Position		R2-RS.5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH		ISO 2768-vK	DRAWING CREATED 22/02/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		LIFE CYCLE LABEL	
DESIGN SITE		REV. SHEET	
ESS Lund		Preliminary 1.0 1/2	
APPROVED BY		LEVEL OF MATURITY MC SIZE SCALE	
QUALITY CONTROLLED BY		M4 A1 1:5	
		Produced to ISO 1101, 8015 and 1302	

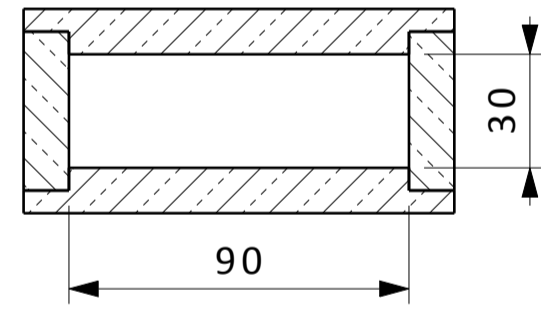


SECTION C-C

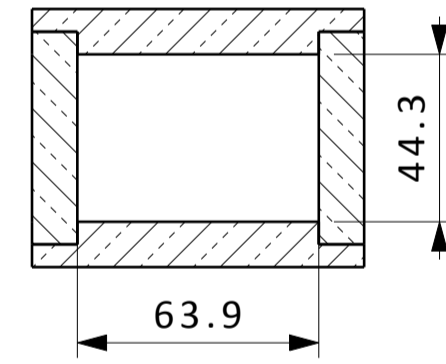



SECTION B-B

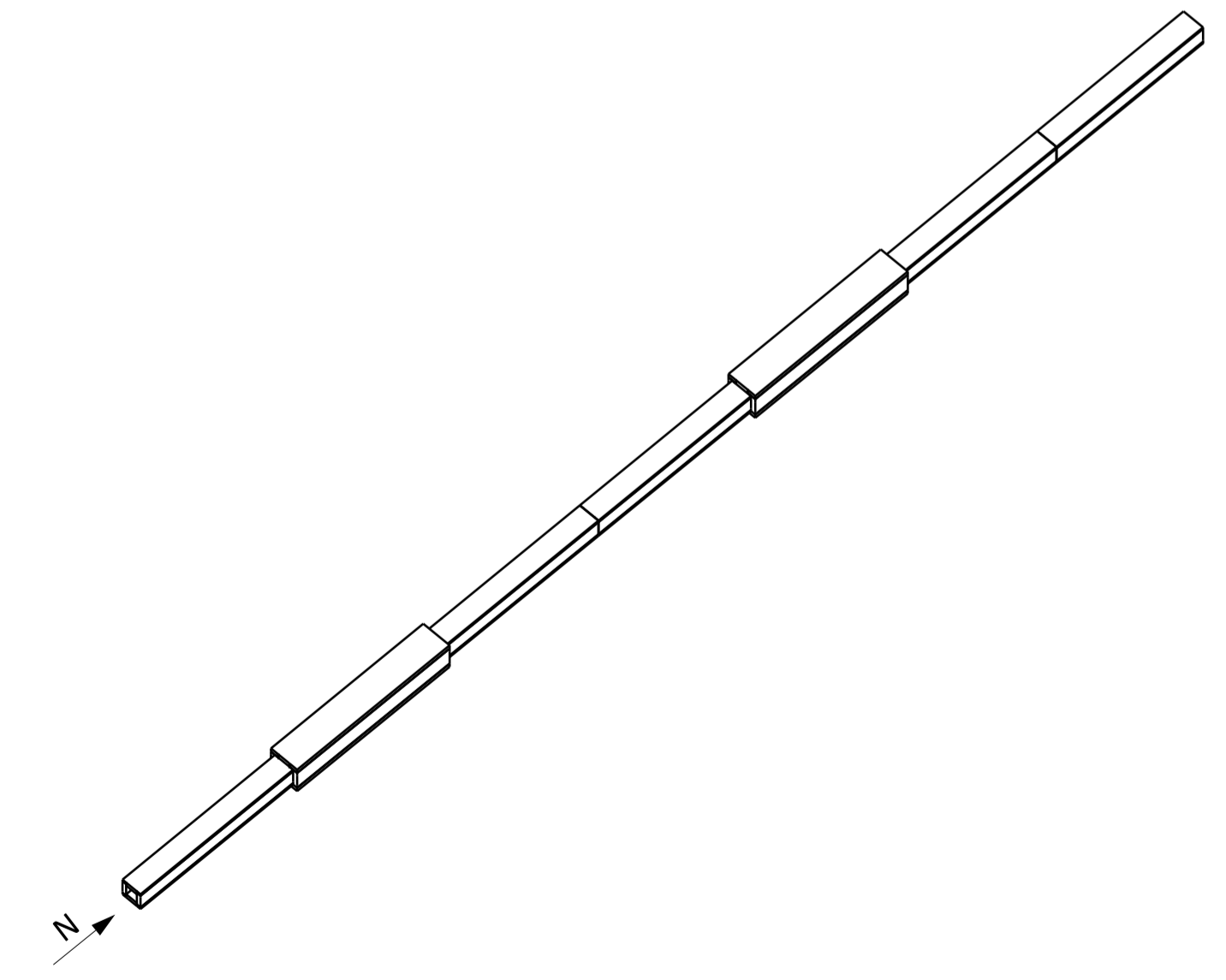
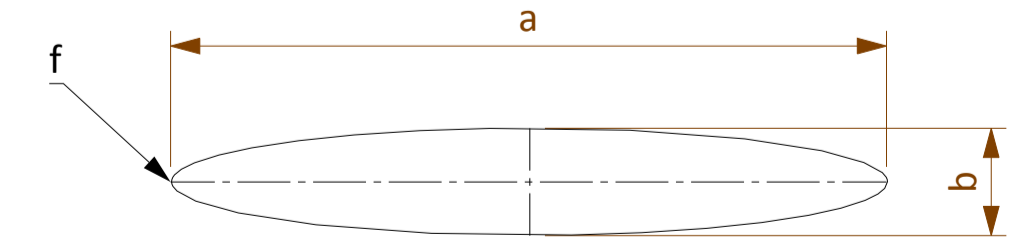
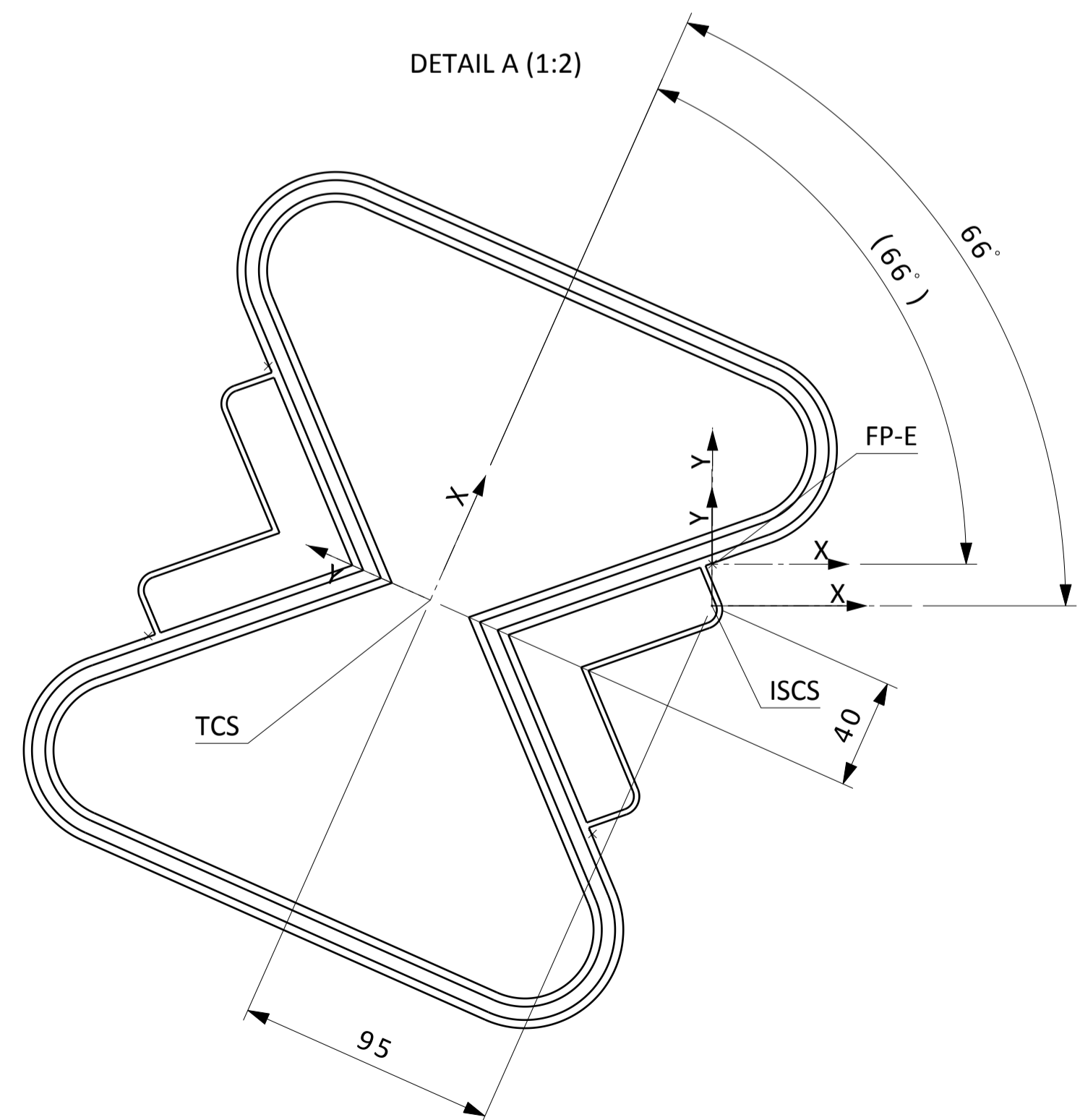
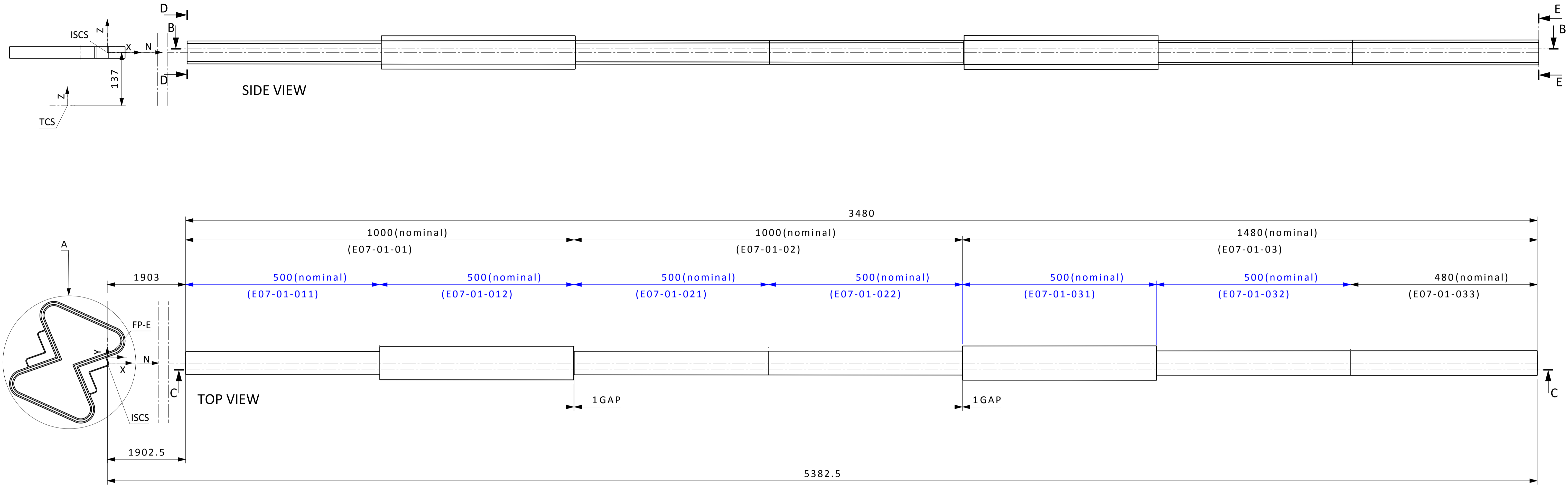
SECTION CUT D-D
AT 1899mm
SCALE 1:2



SECTION CUT E-E
AT 5379mm
SCALE 1:2



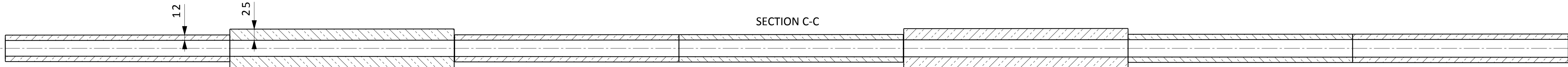
ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		-	
Linear Dimensions, Form and Position:		R2-R5,5	
Chamfers, Radii and Angular Dim's:		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 22/02/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
 EUROPEAN SPALLATION SOURCE DESIGN SITE ESS Lund	CHECKED BY	DRAWING NUMBER ESS-0097332.2	
	APPROVED BY	LEVEL OF MATURITY	REV. SHEET
	QUALITY CONTROLLED BY	M4	A1
Produced to ISO 1101, 8015 and 1302		SCALE	1:5



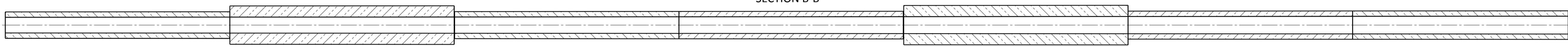
Notes:

- TCS = Target coordinate system
- FP-S = Moderator south sector focal point.
- ISCS = Instrument source coordinate system. Source point of instrument optical system on moderator. Defined by instrument team as translation and/or rotation from TCS.
- Implementation on beamport E07

ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		VESPA NBOA Assembly	
Linear Dimensions, Form and Position		R2-R5.5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 09/03/2017
Documentation protection as per ISO 16016		DRAWN BY eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		DESIGN SITE	
ESS Lund		APPROVED BY	
QUALITY CONTROLLED BY		LIFECYCLE LABEL	
Produced to ISO 1101, 8015 and 1302		REV. SHEET	
Preliminary		1.0	1/2
LEVEL OF MATURITY	MC	SIZE	SCALE
M4	A1	1:5	
DRAWING NUMBER			
ESS-0100248.2			

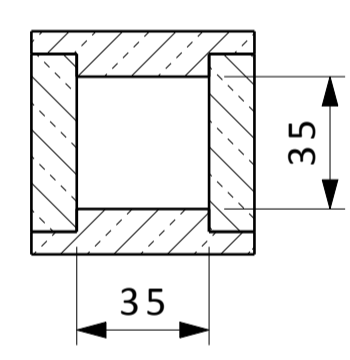


SECTION C-C

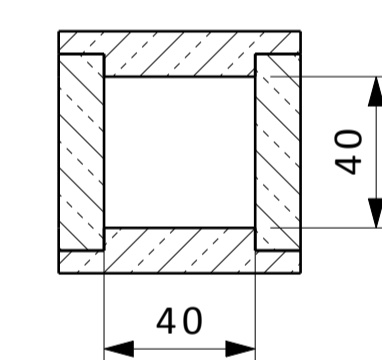


SECTION B-B

SECTION CUT D-D
AT 1903mm
SCALE 1:2



SECTION CUT E-E
AT 5382,5mm
SCALE 1:2



ASSY WEIGHT: - kg		DRAWING TYPE, TITLE, SUPPLEMENTARY TITLE	
General Tolerances		VESPA NBOA Assembly	
Linear Dimensions, Form and Positions		R2-R5,5	
Chamfers, Radii and Angular Dim's		ISO 2768-mK	MODELED BY eriknilsson
SURFACE FINISH Min. Ra 3.2		ISO 2768-vK	DRAWING CREATED 09/03/2017
Documentation protection as per ISO 16016		eriknilsson	DRAWING RELEASED
EUROPEAN SPALLATION SOURCE		LIFECYCLE LABEL	
DESIGN SITE ESS Lund		REV. SHEET	
APPROVED BY		Preliminary 1.0 2/2	
QUALITY CONTROLLED BY		LEVEL OF MATURITY MC SIZE SCALE	
		M4 A1 1:5	
Produced to ISO 1101, 8015 and 1302			