







OWNER:  شرکت سست و سویی توهمه ایرانیان (سهامی خاص)	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT						EPC CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT		
	<b>PULSATION DAMPER DETAIL DRAWING FOR NITROGEN GAS BOOSTER</b>								
MC :  شرکت سست و سویی توهمه ایرانیان (سهامی خاص)	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No : 52-98/445	
Owner Document Number: 17811-23C	BU	20	VD	303	ME	DWG	0079	Rev.:	Page
								01	1 of 6

Pulsation dampener calculation with PV ELITE native file shall be sent before next revision of pulsation dampener drawing.

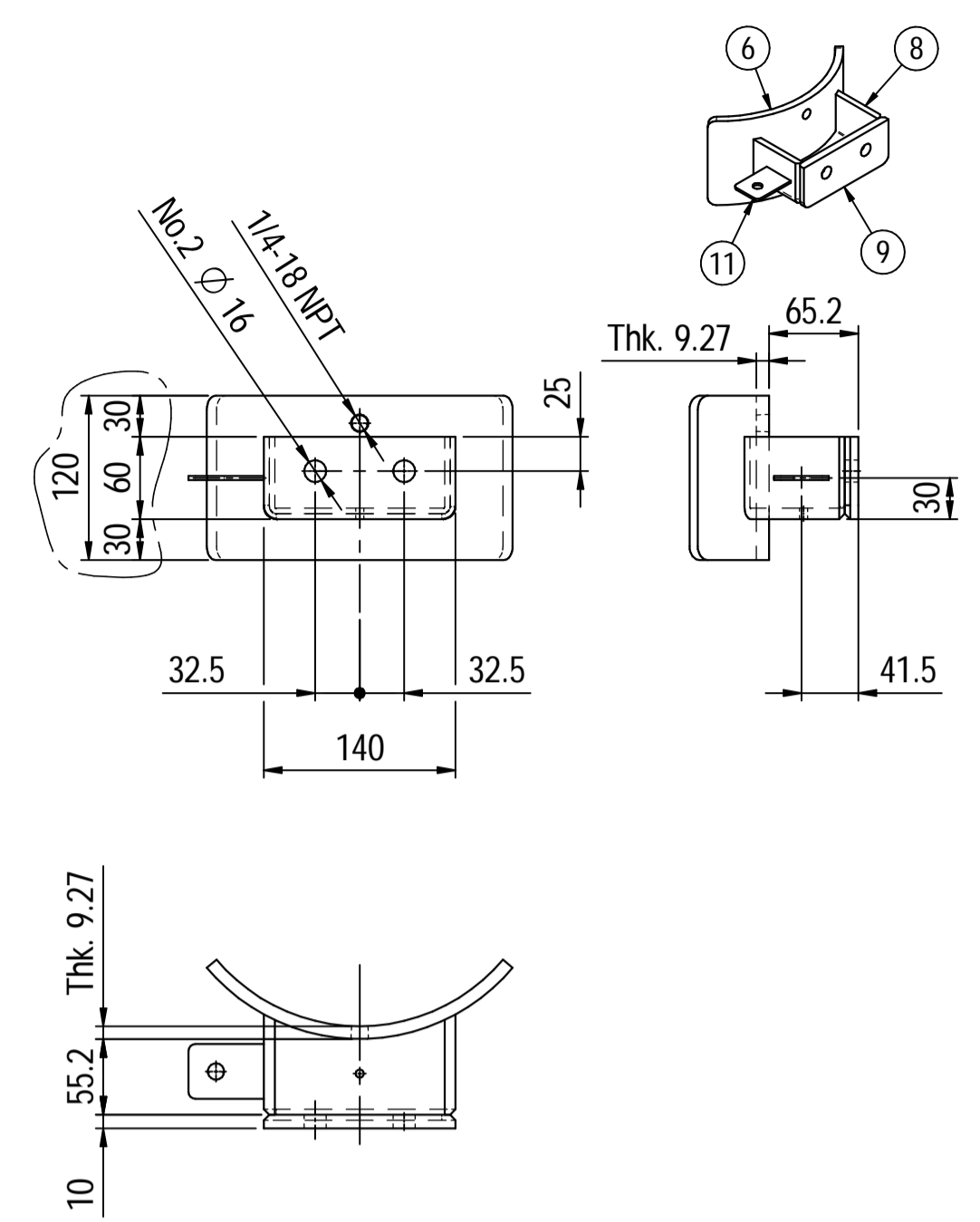
## PULSATION DAMPER DETAIL DRAWING FOR NITROGEN GAS BOOSTER

 شرکت سست و سویی توهمه ایرانیان توسعه ایرانیان  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT	<b>BUSHEHR PETROCHEMICAL COMPANY MEG PLANT</b>
<b>Document Review</b>	
Issue Purpose:	IFA
Result Code: AP,AN,CM,RE,NC	CM
Next Status : IFC,IFA,IFI,AFC,AB	IFA
Responsible Department	MECHANICAL
Commented Date	May/02/2022
<b>Approval or review hereunder shall not be construed to relieve Vendor / Subcontractor of his responsibilities and liability under the contract.</b>	

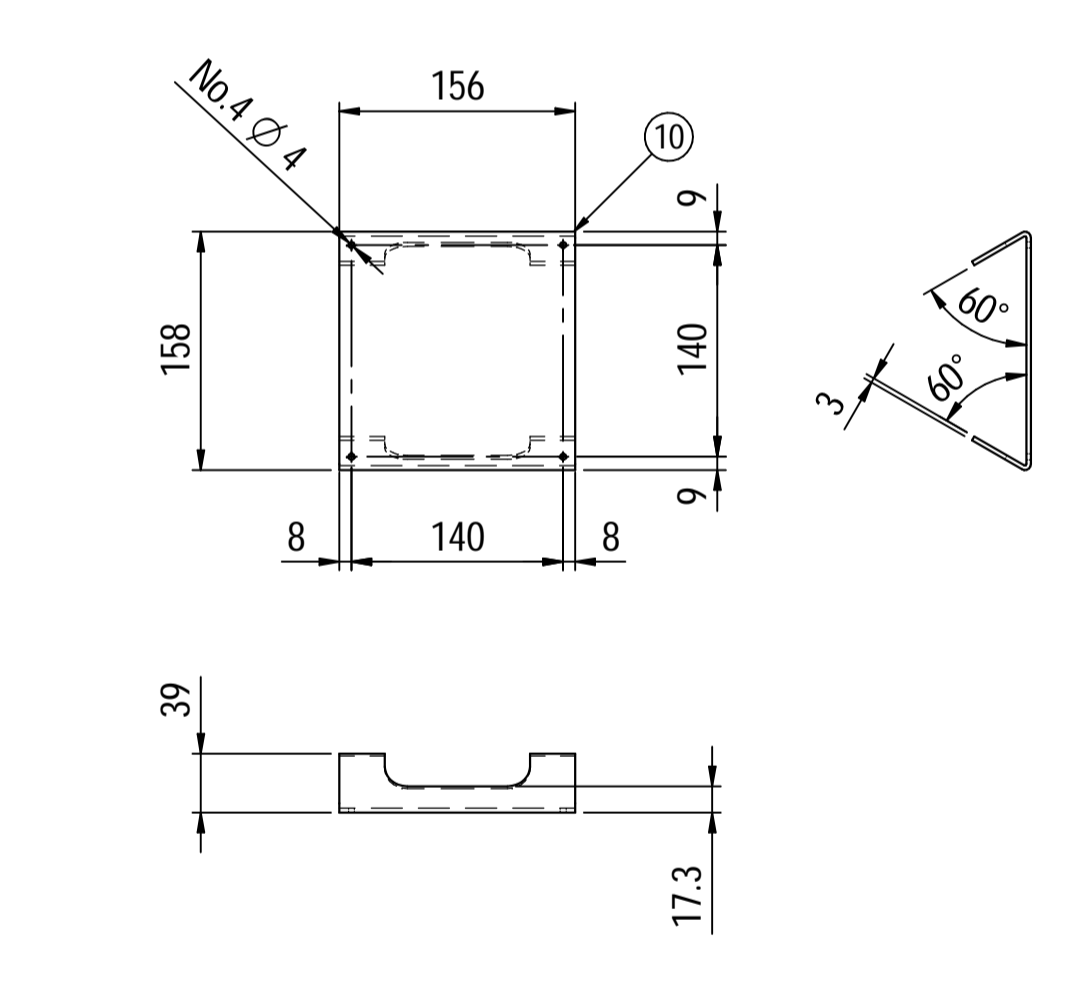
01	26/04/2022	For approval	KP	CL	JR	
00	06/04/2022	For approval	KP	CL	JR	
<b>Rev.</b>	<b>Date</b>	<b>Purpose of Issue</b>	<b>Prepared</b>	<b>Checked</b>	<b>Approved</b>	<b>AC Code</b>
					<b>Class: 1</b>	<b>Phase: P</b>



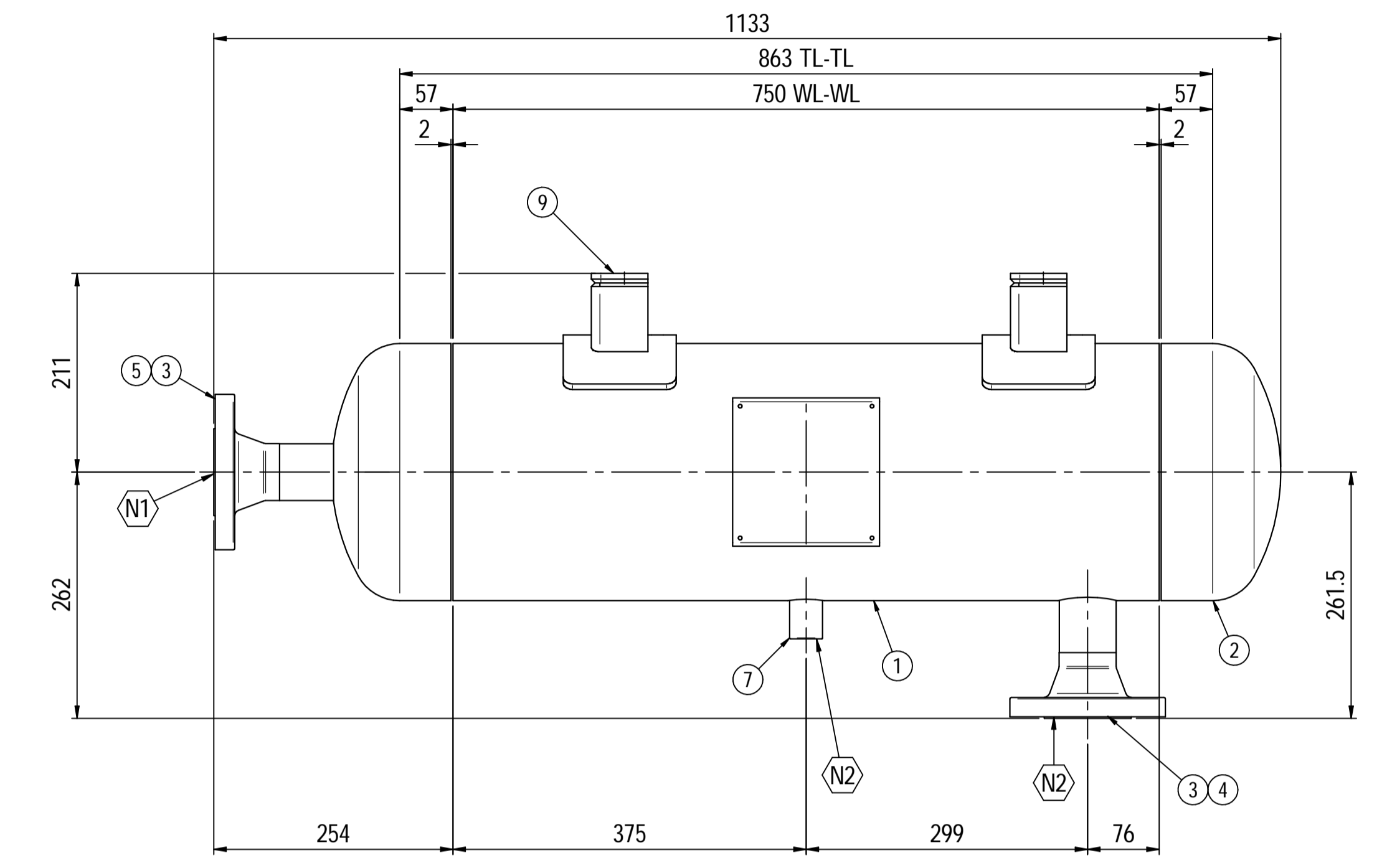
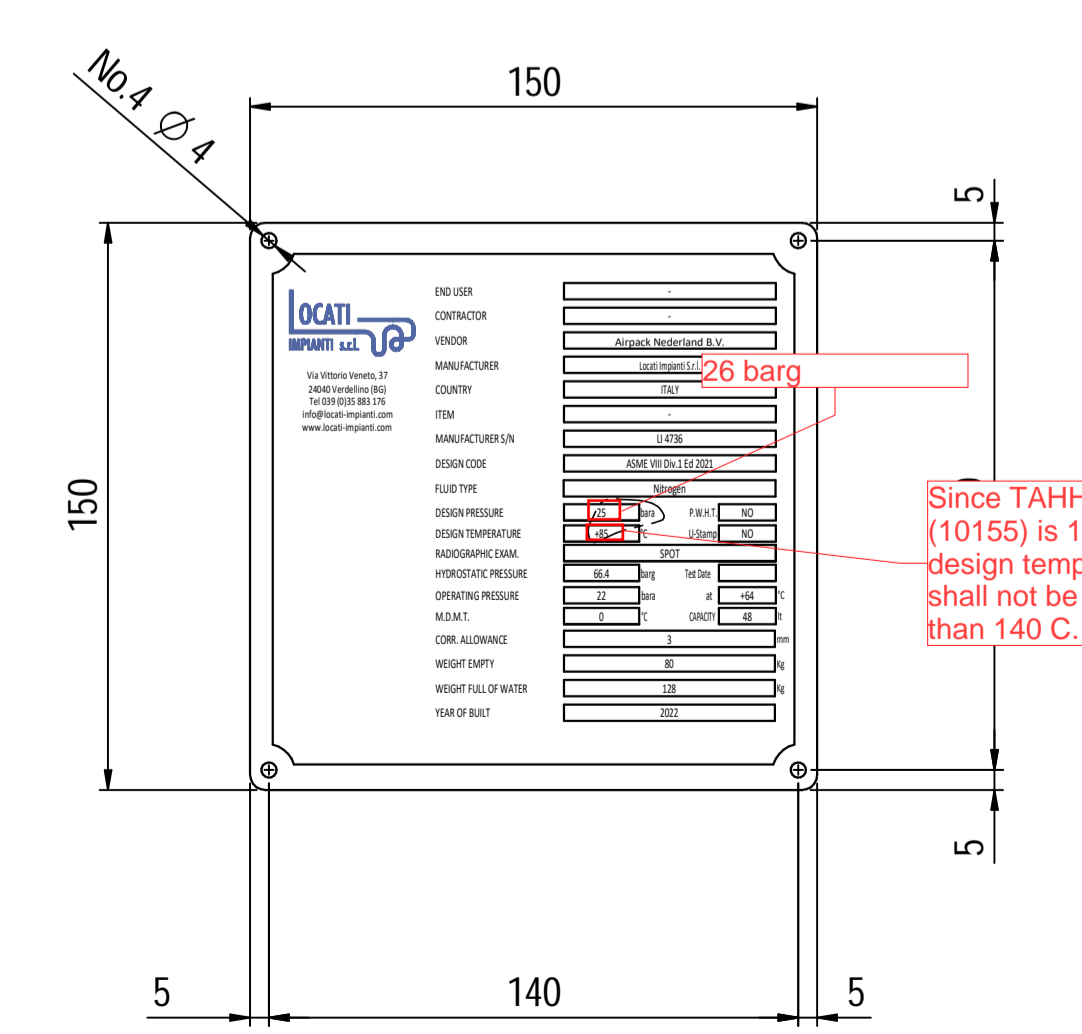
Supports detail



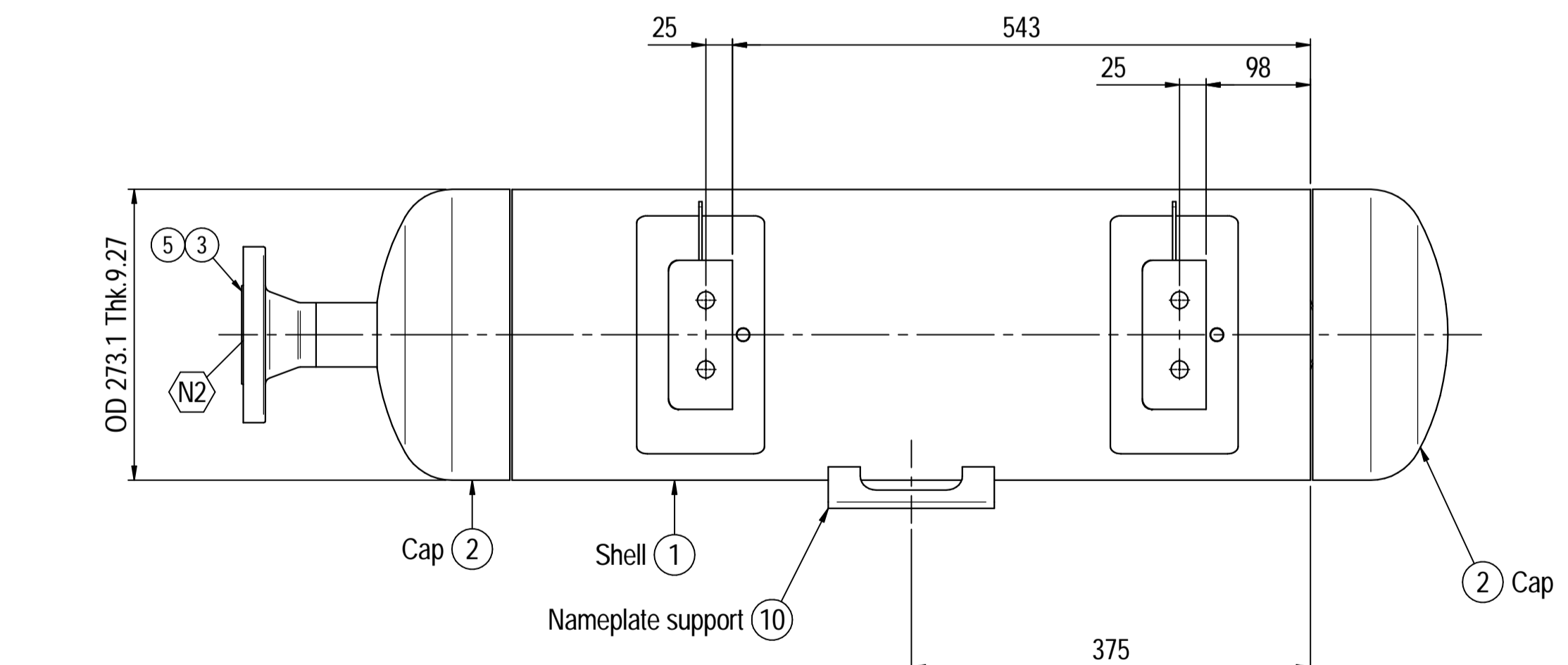
Nameplate detail



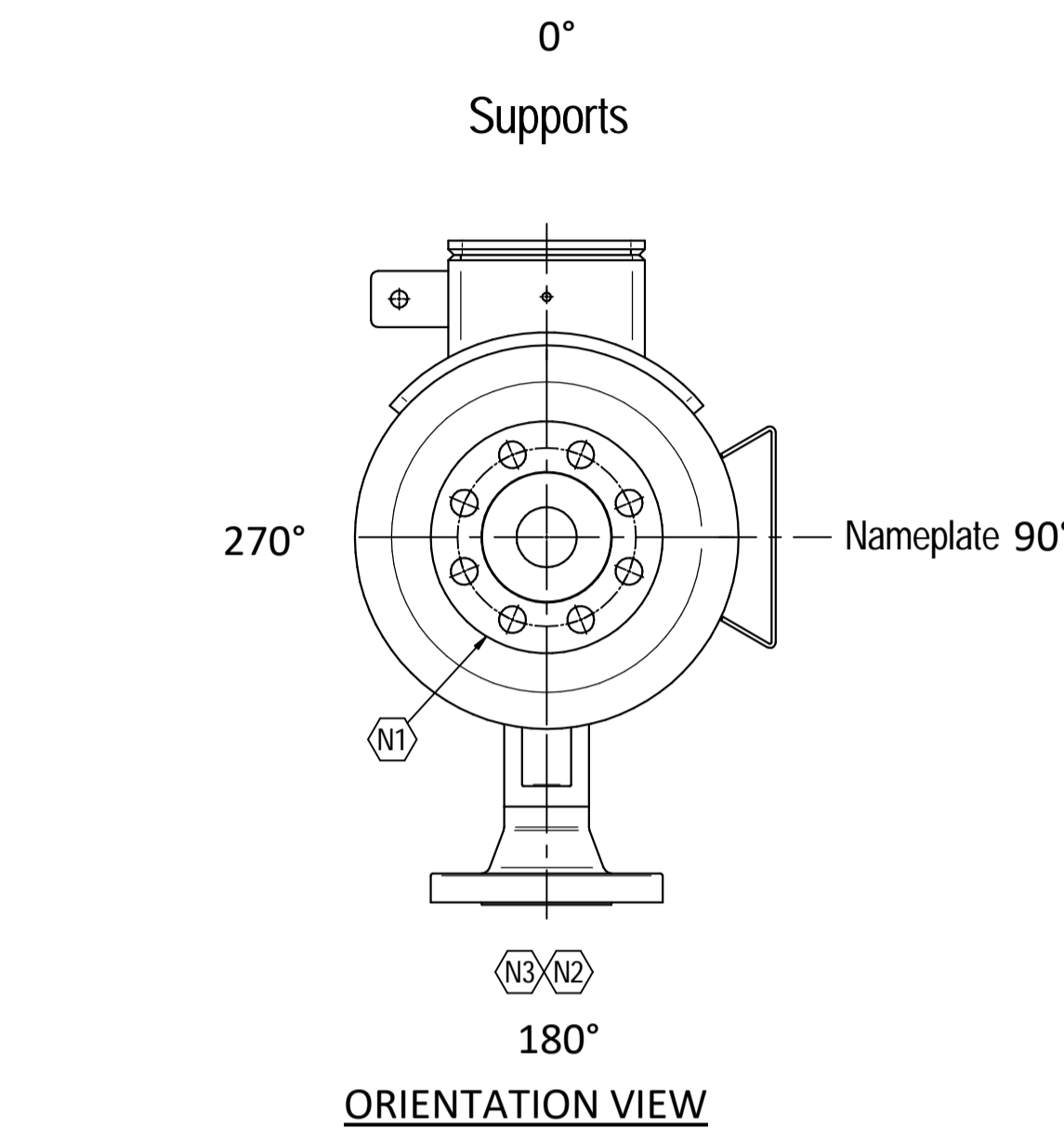
Nameplate detail scale 1:2



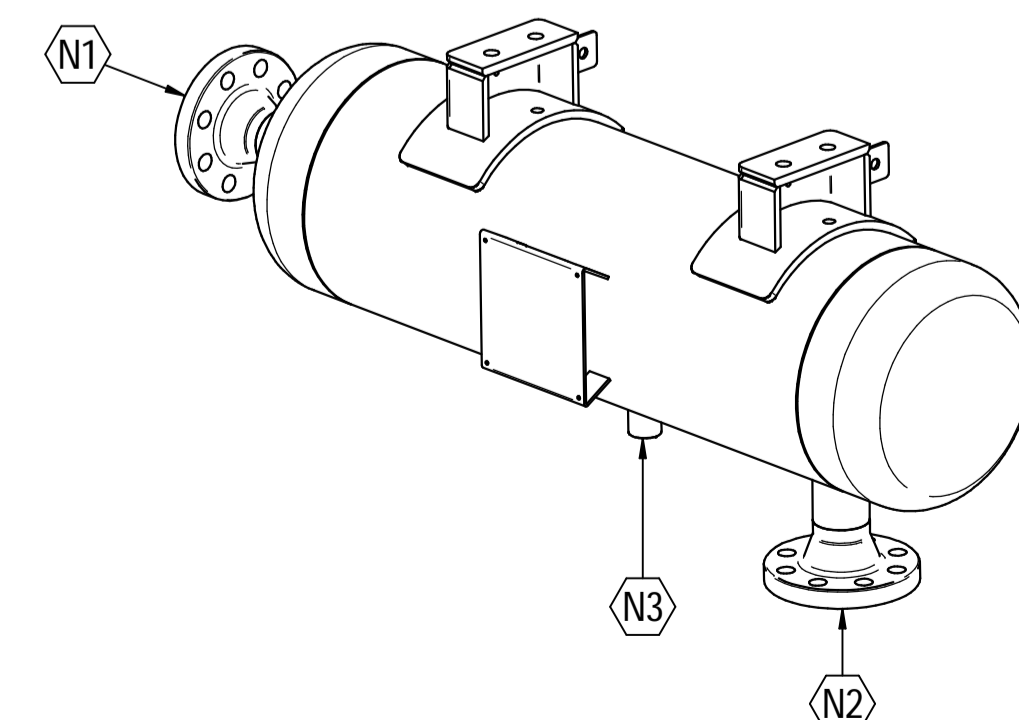
ELEVATION VIEW



PLAN VIEW



ORIENTATION VIEW



ISOMETRIC VIEW scale 1:8

Material List					
Pos.	Q.ty	Description	Mat.	Cert.	
1	1	Shell by seamless pipe 10" Sch.STD L=750	SA106 Gr.B	3.1	
2	2	Cap 10" Sch40	A234 WPB	3.1	
3	2	Flange 2" WN #300 RF Sch.160	A105	3.1	
4	1	Seamless pipe 2" Sch160 L=68	A106 GrB	3.1	
5	1	Seamless pipe 2" Sch160 L=65	A106 GrB	3.1	
6	2	Pad by pipe 10" Sch.STD	A106 Gr.B	3.1	
7	1	Coupling 1/2" NPT #6000	A105	3.1	
8	2	Plate 74.5x231 Thk.8	A516 70	3.1	
9	2	Plate 16x65 Thk.10	A516 70	3.1	
10	1	Nameplate support 234 x 156 thk3mm	S275 JR	3.1	
11	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L	3.1	

- Note:
- 1) Governing measurement S.I. unless otherwise specified;
  - 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;
  - 3) Material: certification 3.1 EN 10204;
  - 4) All internal edge shall be rounded off;
  - 5) Nozzle flanges in accordance with ASME B16.5: 2013;
  - 6) Flange fittings in accordance with ASME B16.9: 2012;
  - 7) The flange dimensions are in accordance to ASME B16.5: 2013;
  - 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;
  - 9) All welds are continuous except where indicate;
  - 10) See document C220006CLC012 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	-	8.5 + 10
N2	1	AIR OUTLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 + 10
N1	1	AIR INLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 + 10

DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	NATIONAL BOARD REGISTRATION	NO
STATO FISICO DEL FLUIDO	Gas	TEST	NO
REGOLAMENTO DI CALCOLO	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO	23 bara	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	25bara (26 barg)	RT examination	Spot (RT3)
PRESSIONE ESTERNA	NO	PROVA PER ESTENSIONE	NO
PRESSIONE DI PROVA IDRAULICA	66.4 barg	ULTRASONIC EXTENSION	NO
TEMPERATURA DI ESERCIZIO	+83 °C	CONTROLLO MAGNETOSCOPICO	NO
TEMPERATURA DI PROGETTO	+85 °C	WELD TEST COUPON	NO
SOVRAMETALLO DI CORROSIONE	3 mm	PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
CAPACITA'	48 l	CAP	CAP
EFFICIENZA GIUNTI	0.85	WAWP	WAWP
WAWP @ Design Temperature	38.12 barg @ +85 °C	PESO A VUOTO	80 kg
WAWP(EXT)	NO	PESO IN ESERCIZIO	80 kg
MDMT @ WAWP	0 °C @ 38.12 barg	PESO PIENO D'ACQUA	128 kg
TRATTAMENTO TERMICO	NO	WIND DATAS	-
IMPACT TEST	NO	SEISMIC DATAS	-

26 barg

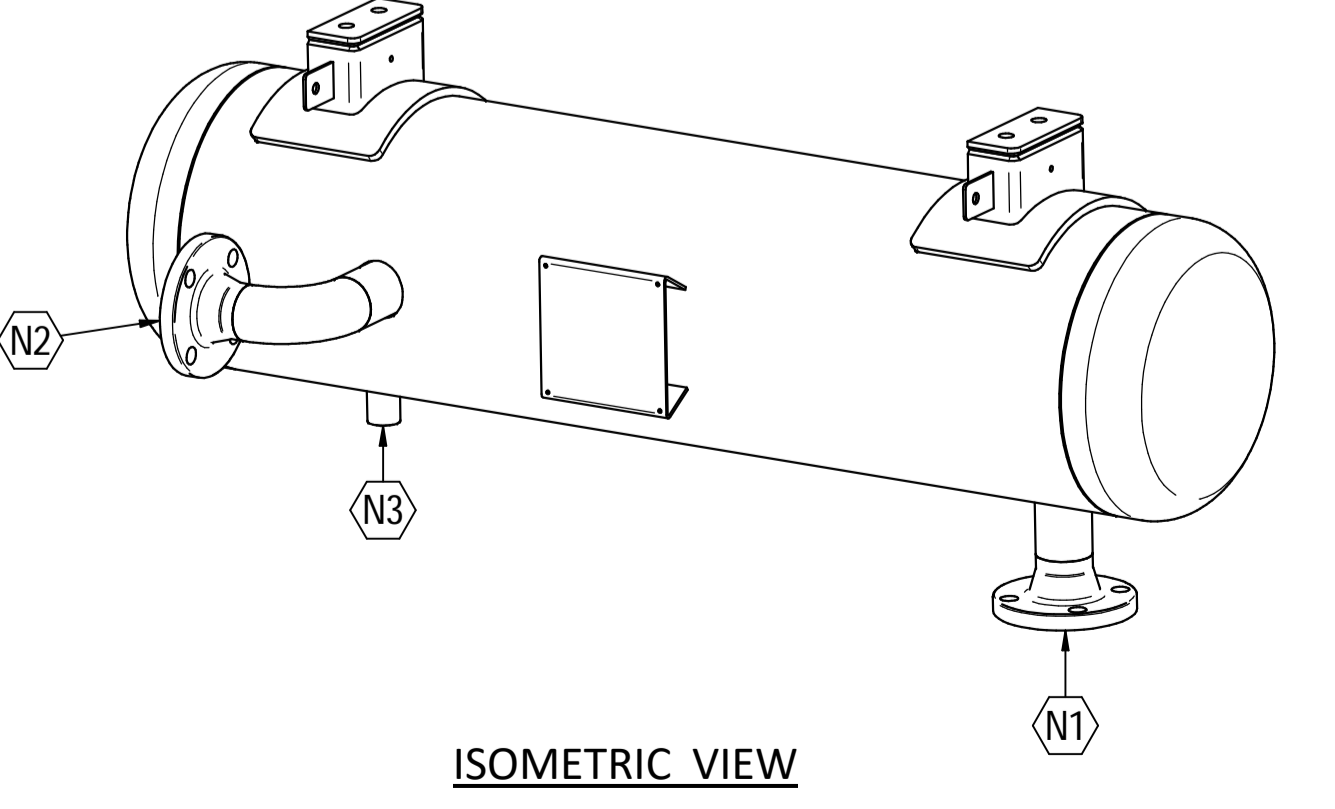
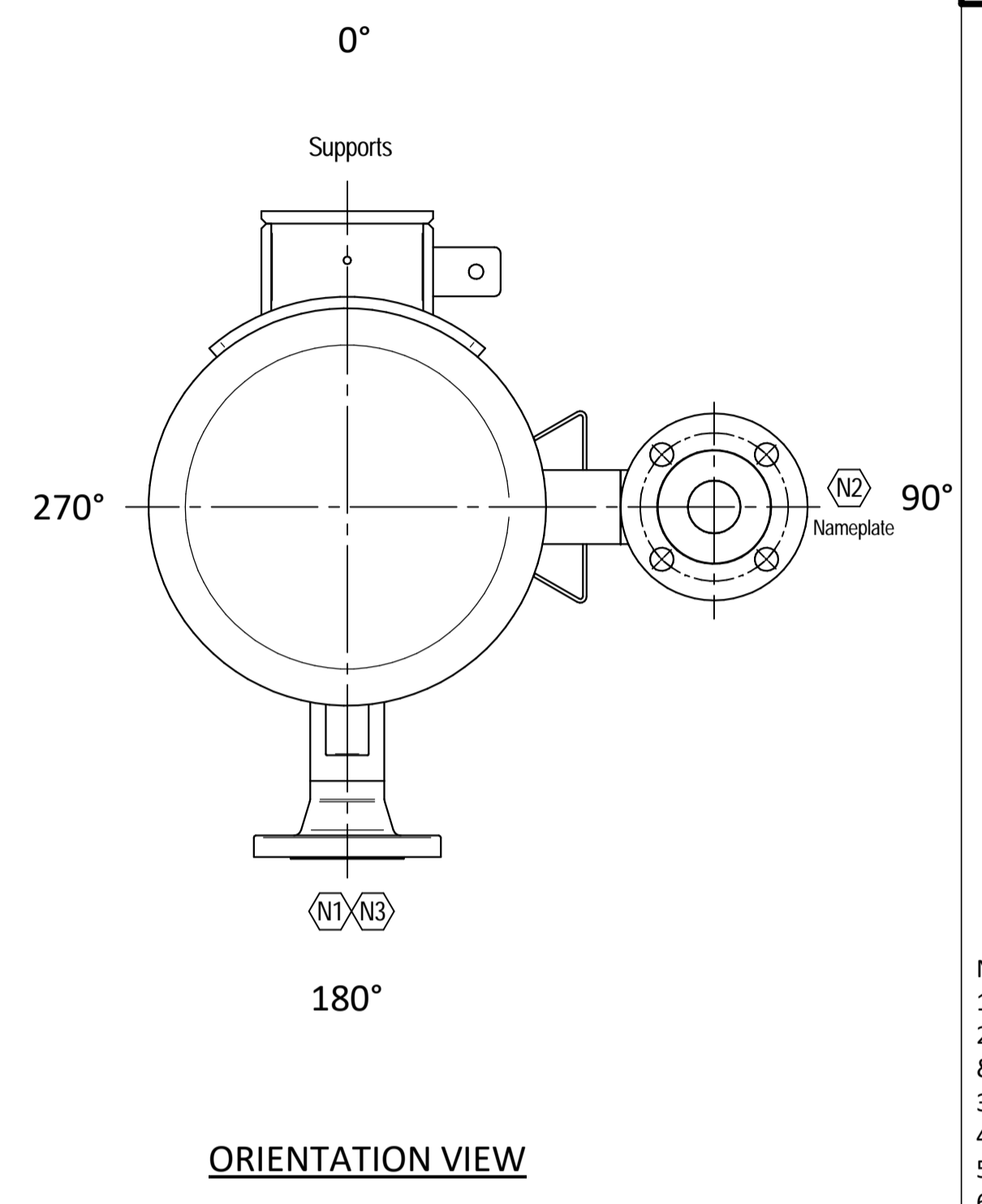
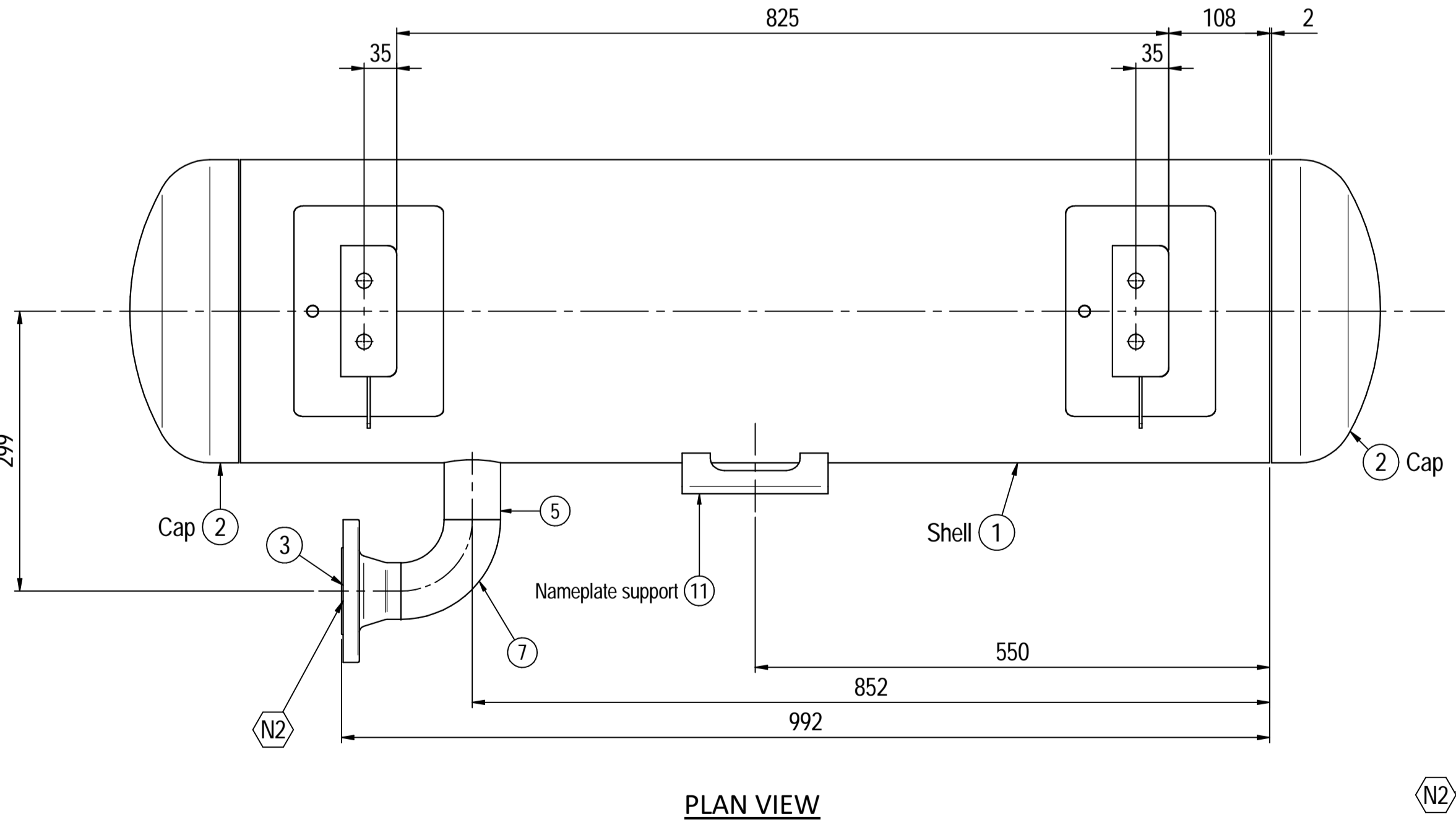
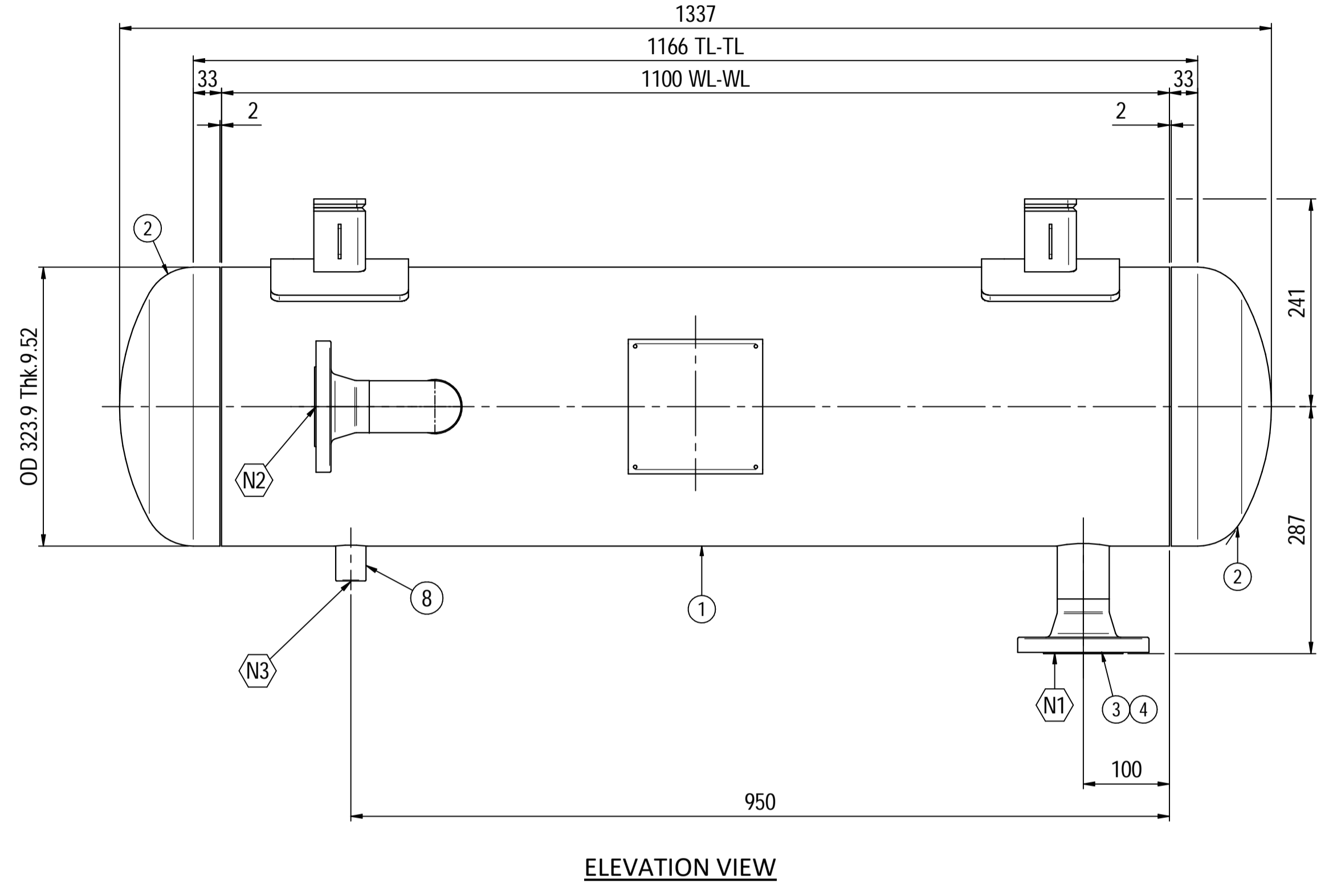
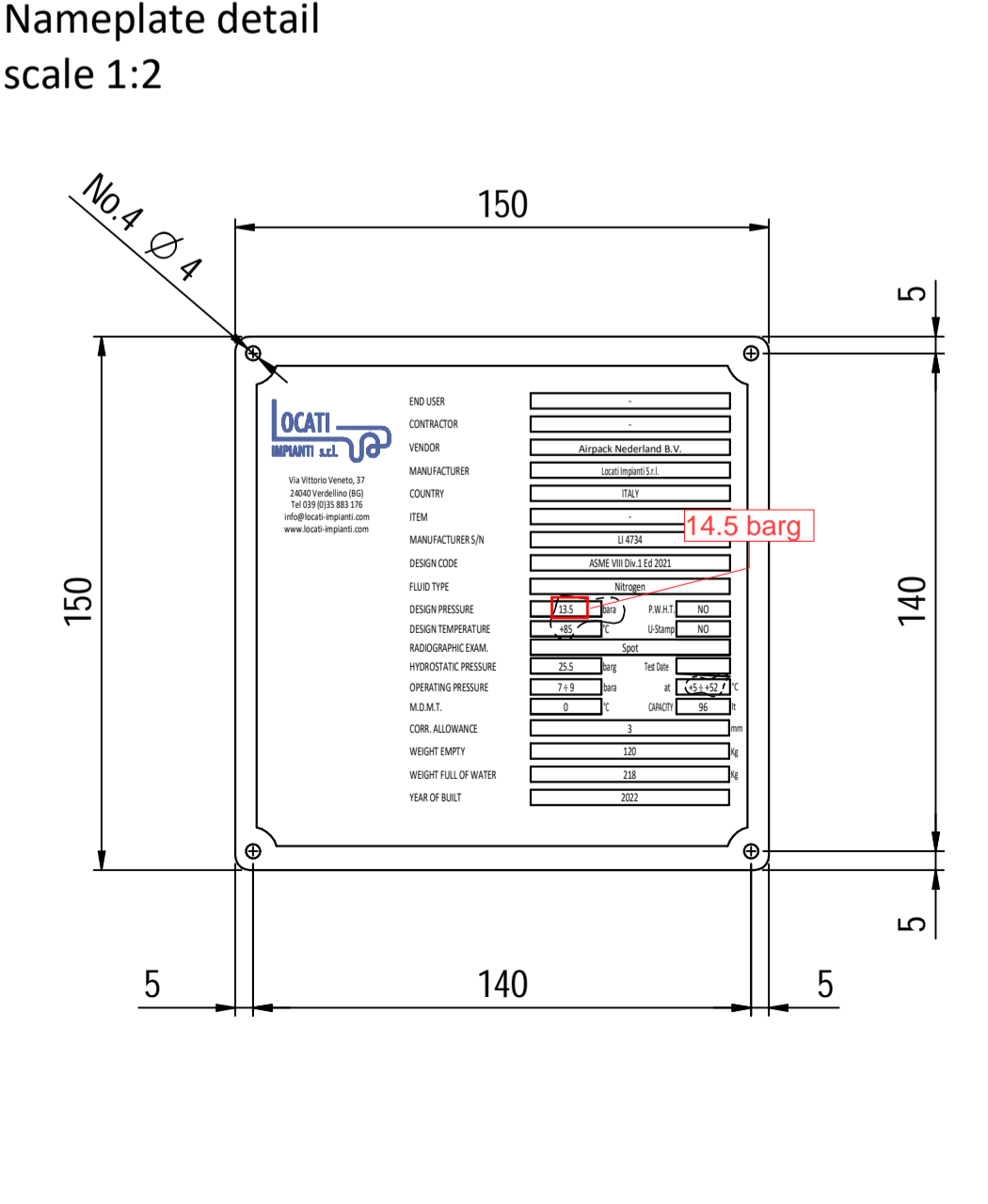
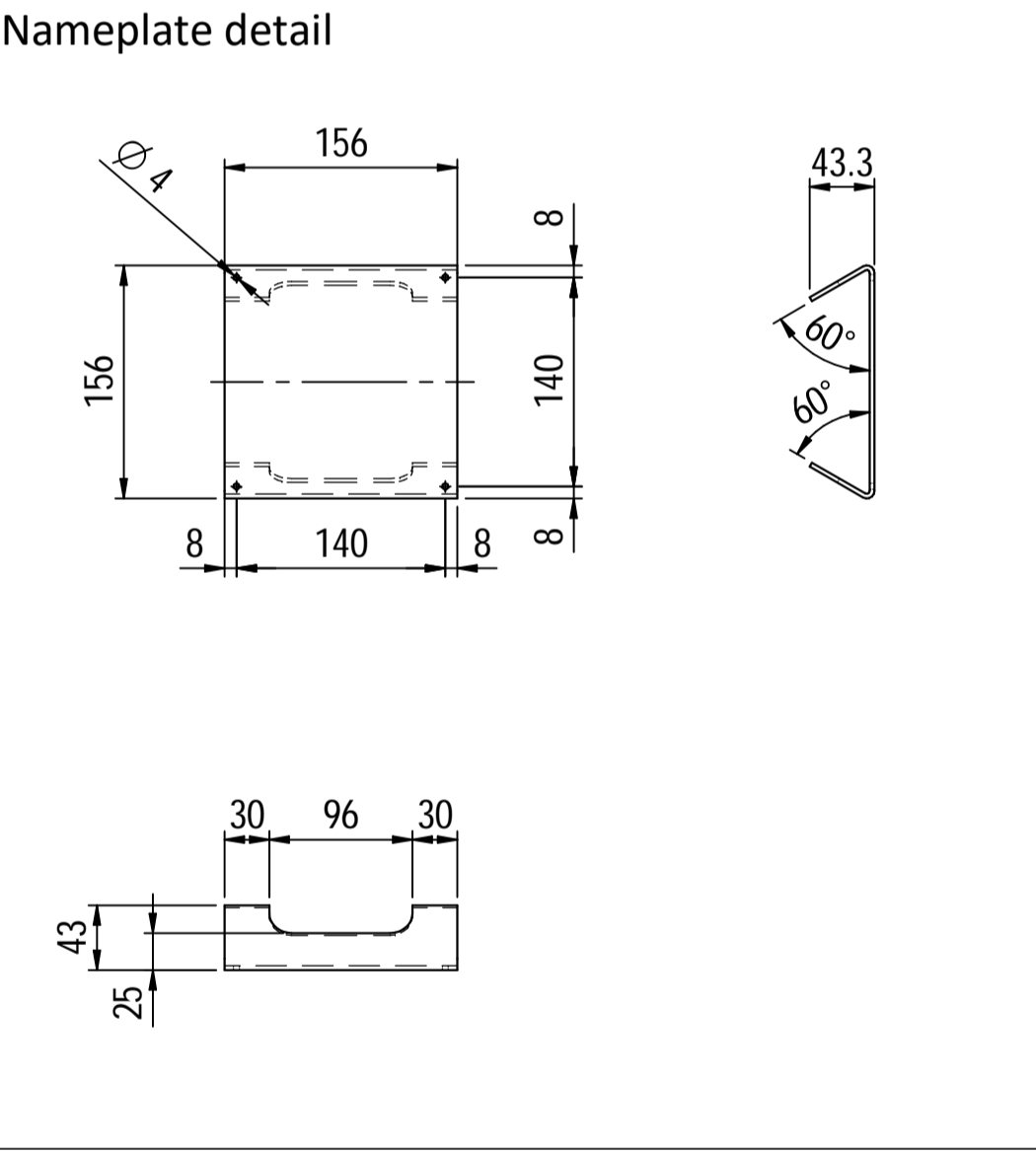
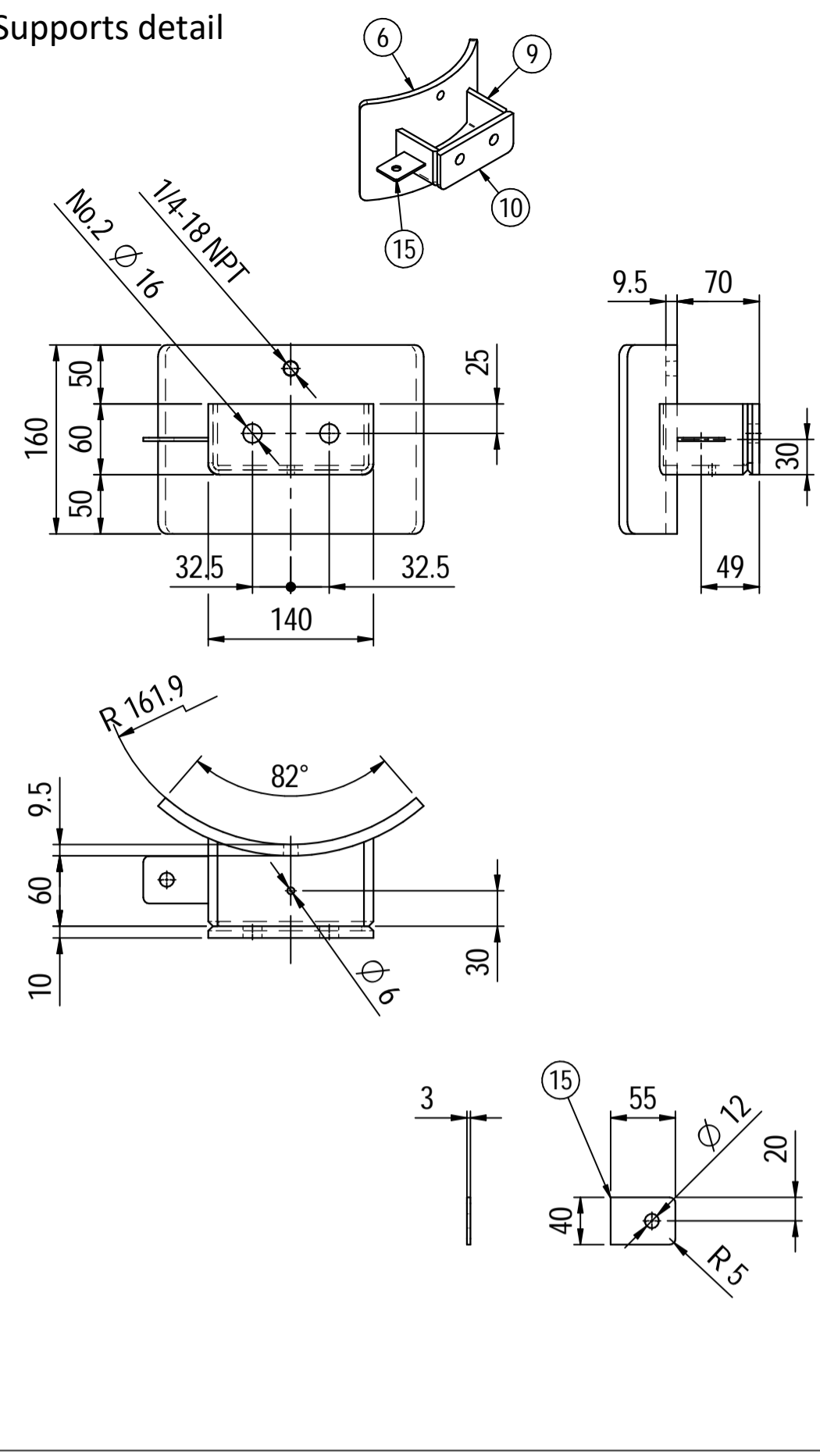
Since TAHH (10155) is 140 C, design temperature shall not be less than 140 C.

Shall be checked with P.I.D.

As per compressor data sheet discharge temperature is 81 C.

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
02	Modified as per Client comments	CM	MV	GL	15/04/2022
01	Modified shell length	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Oggetto/Object N2 PULSATION DAMPER 2nd STAGE DISCHARGE			
Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Nederland B.V.		
Ord. No.	18498-VV-0901		
Dis. N°/Dwg No.	C220006DWG006	Rev.	02



With reference to mechanical data sheet of pulsation dampener design pressure is 14.5 barg.

Material List				
Pos.	Q.ty	Description	Mat.	Cert.
1	1	Shell by seamless pipe 12" Sch.STD L=1100	SA106 Gr.B	3.1
2	2	Reduced cap 12" Sch.STD	SA234 WPB	3.1
3	2	Flange 2" WN 150# Sch160	SA105	3.1
4	1	Seamless pipe 2" Sch160 L=74	A106 GrB	3.1
5	1	Seamless pipe 2" Sch.160 L=73	A106 GrB	3.1
6	2	Pad by pipe 12" Sch.STD	A106 Gr.B	3.1
7	1	Seamless elbow 2" 90° LR Sch160	A234 WPB	3.1
8	1	Coupling 1/2" NPT #6000	A105	3.1
9	2	Plate 74.5x231 Thk.8	A516 70	3.1
10	2	Plate 16x65 Thk.10	A516 70	3.1
11	1	Nameplate support 156x241 Thk.3mm	A516 70	3.1
15	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L	

- Note:**
- 1) Governing measurement S.I. unless otherwise specified;
  - 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;
  - 3) Material: certification 3.1 EN 10204;
  - 4) All internal edge shall be rounded off;
  - 5) Nozzle flanges in accordance with ASME B16.5: 2013;
  - 6) Flange fittings in accordance with ASME B16.9: 2012;
  - 7) The flange dimensions are in accordance to ASME B16.5: 2013;
  - 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;
  - 9) All welds are continuous except where indicate;
  - 10) See document C220006CLC009 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	PIPE O.D.	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	PAD	Tc
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	-	-	8.5 + 10
N2	1	AIR OUTLET	2"	60.3	8.74	#150	WN	RF	-	-	-	8.5 + 10
N1	1	AIR INLET	2"	60.3	8.74	#150	WN	RF	-	-	-	8.5 + 10

DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	NATIONAL BOARD REGISTRATION	Lloyd Register
CODICE DI CALCOLO	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO	7 + 9 bara	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	13.5 barg (14.5 barg)	X-RAY	RT examination
PRESSIONE ESTERNA	NO	LIQUIDI PENETRANTI	NO
PRESSIONE DI PROVA IDRAULICA	25.5 barg	ULTRASUONI	NO
TEMPERATURA DI ESERCIZIO	+5 + +52 °C	CONTROLLO MAGNETOSCOPICO	NO
TEMPERATURA DI PROGETTO	+85 °C	MAGNETIC PARTICLE EXAMINATION	NO
SOVRAMEZZA ALLO DI CORROSIONE	3 mm	PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
CAPACITA'	96 l	TIPO DI FONDO	CAP
EFFICIENZA GIUNTI	0.85	FORMAZIONE FONDO	HOT
MAMP @ Design Temperature	18.15 barg @ +85 °C	PESO A VUOTO	120 kg
MAMP(EXT)	NO	PESO IN ESERCIZIO	120 kg
MDMT @ MAMP	0 °C @ 18.15 barg	PESO PIENO D'ACQUA	218 kg
TRATTAMENTO TERMICO	NO	DATI DEL VENTO	-
IMPACT TEST	NO	DATI SISMICI	-

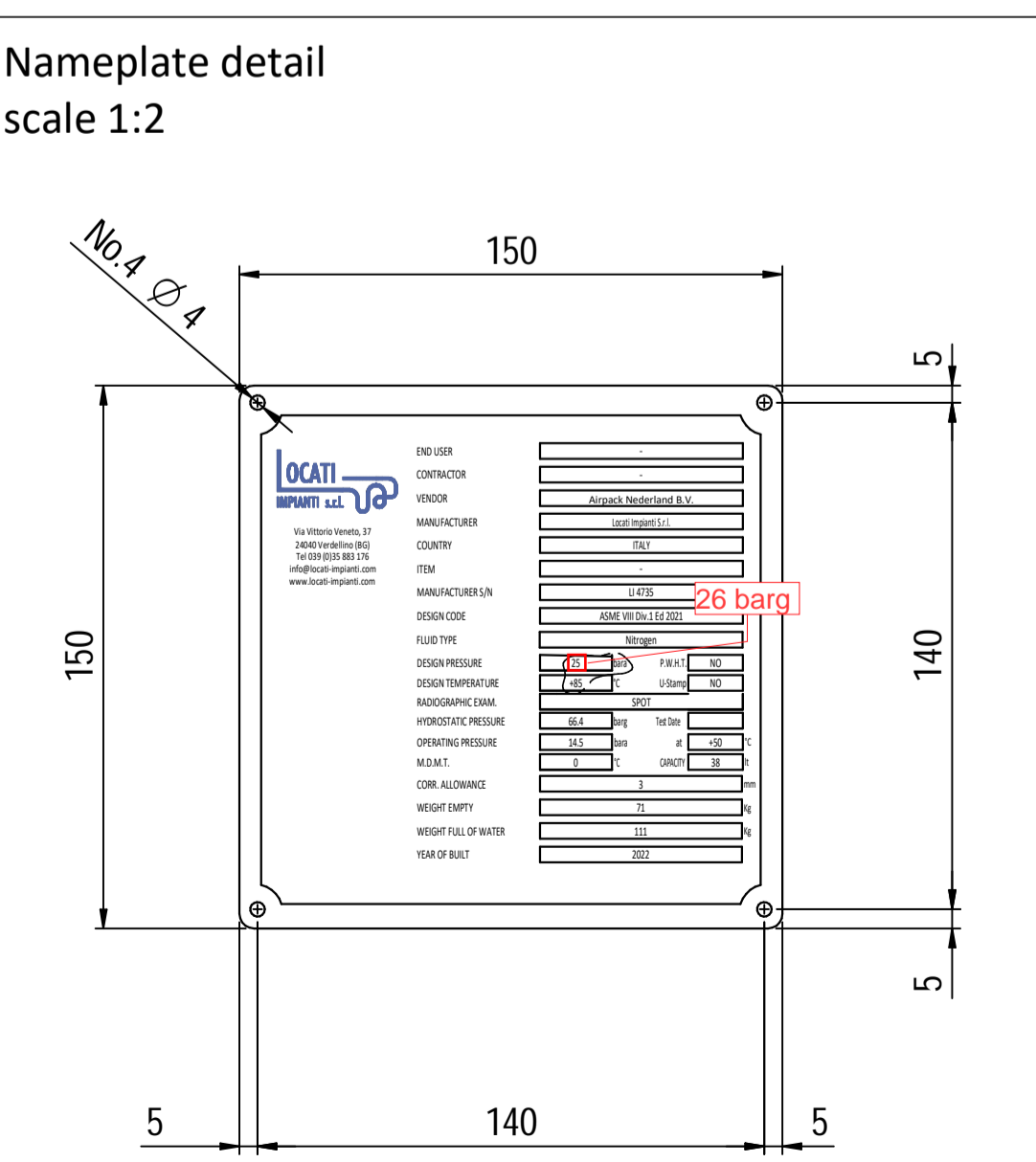
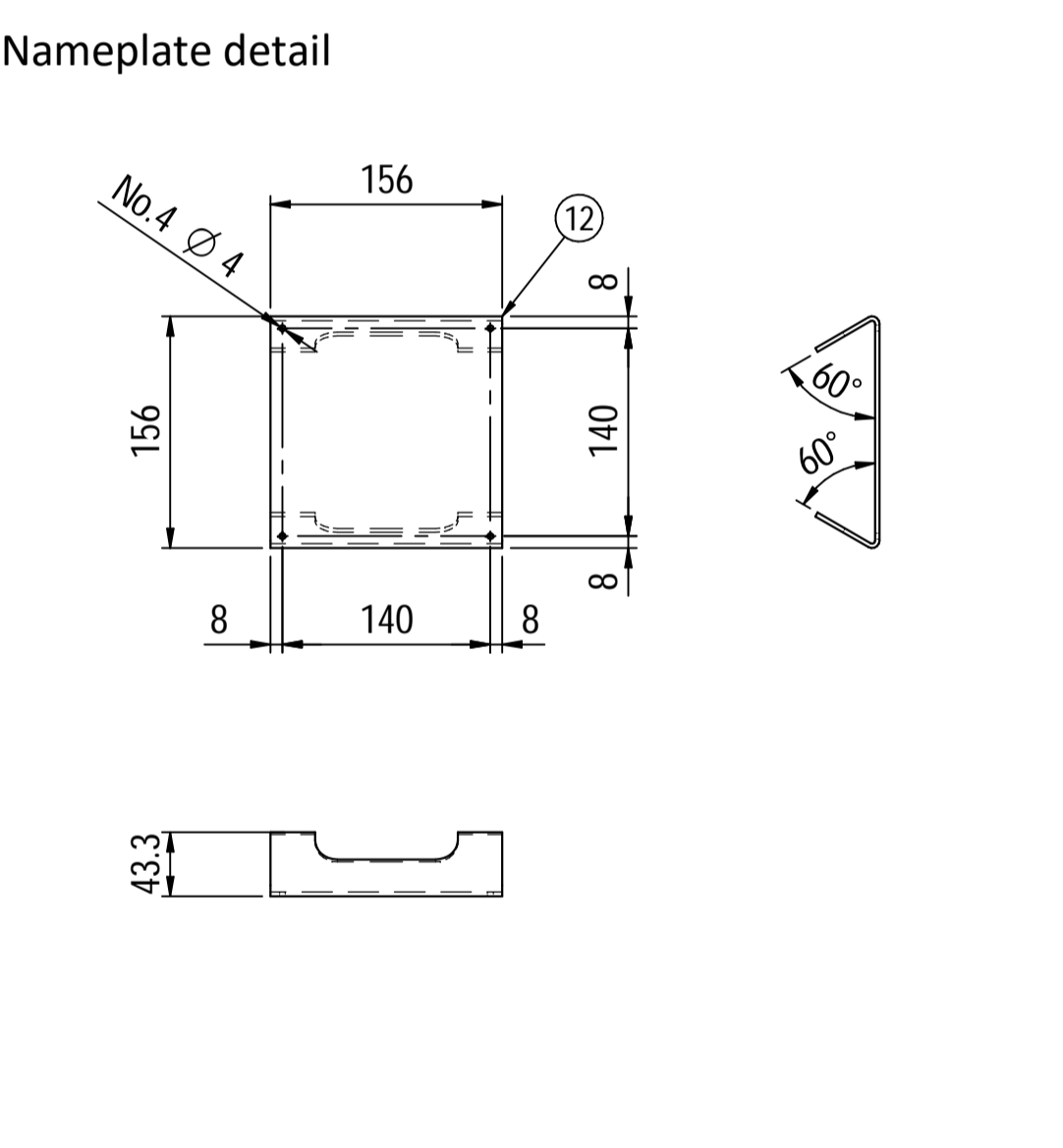
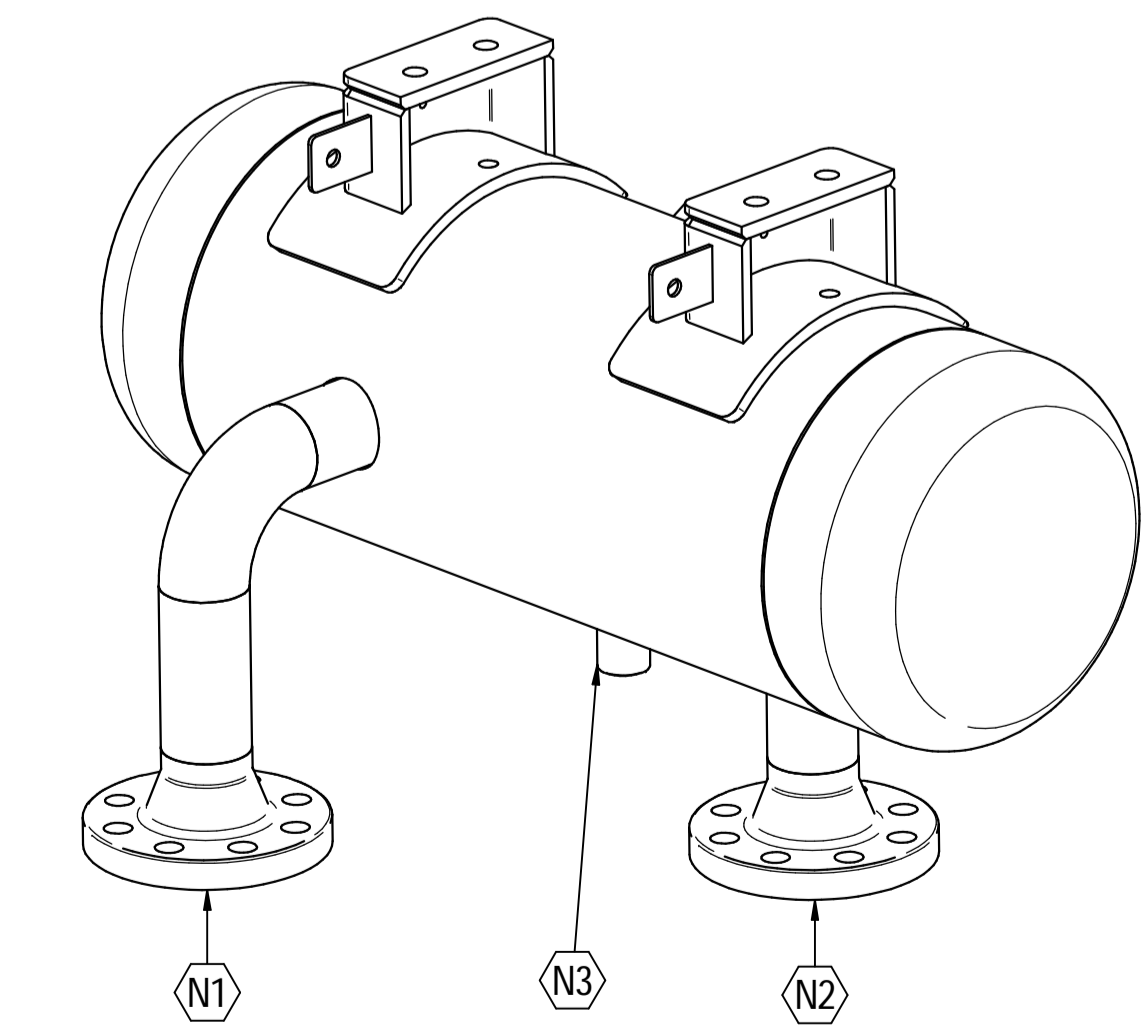
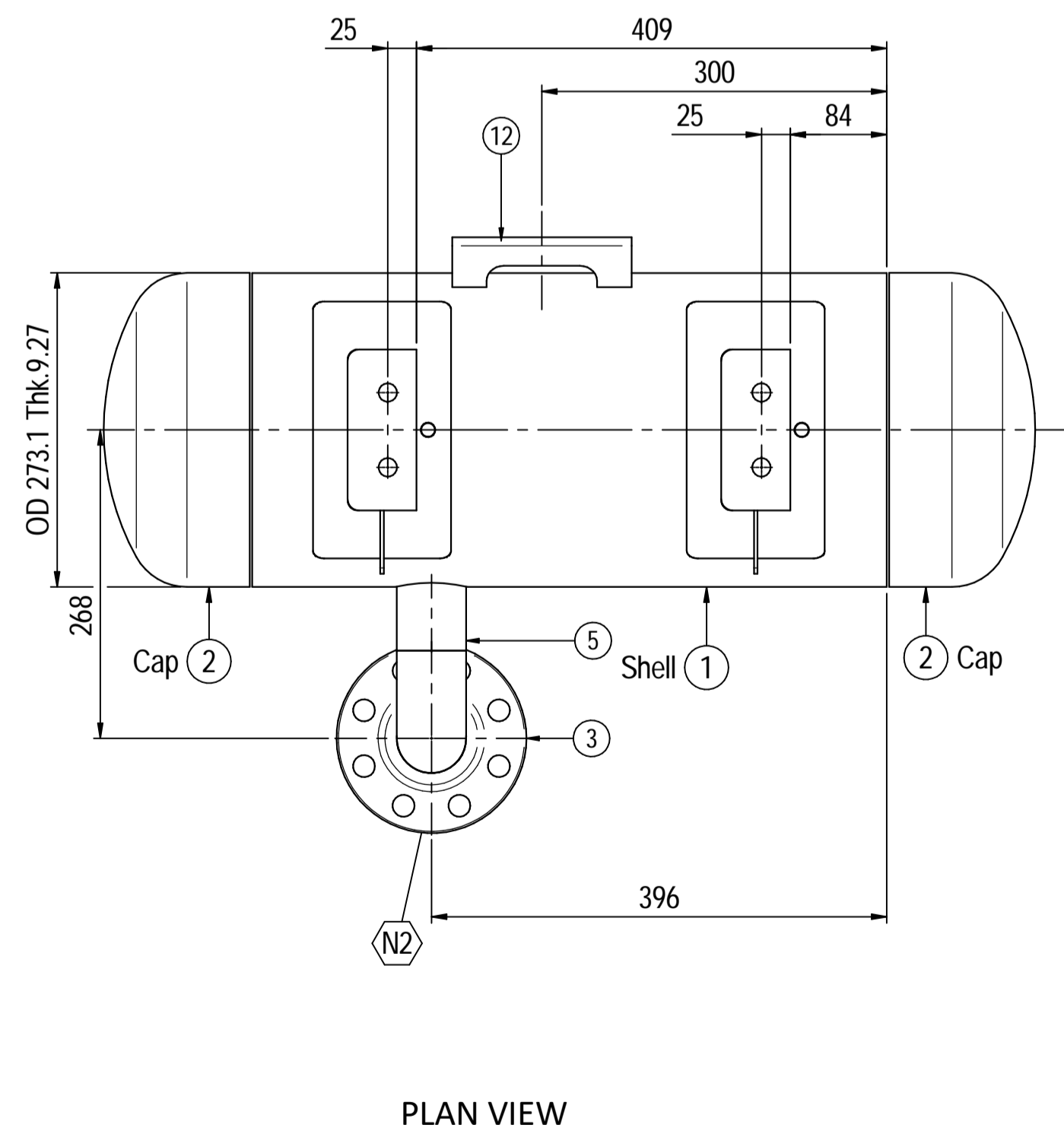
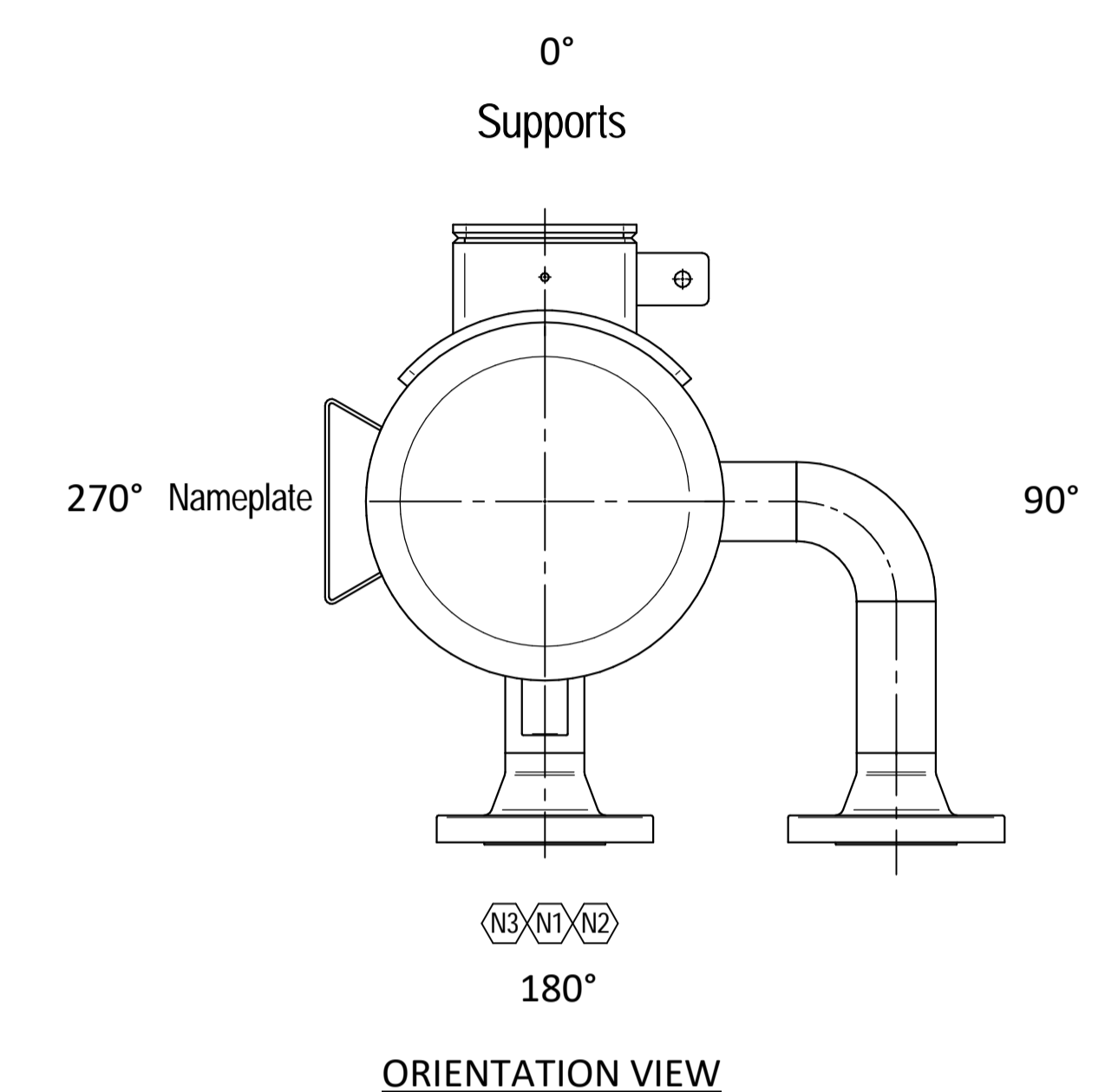
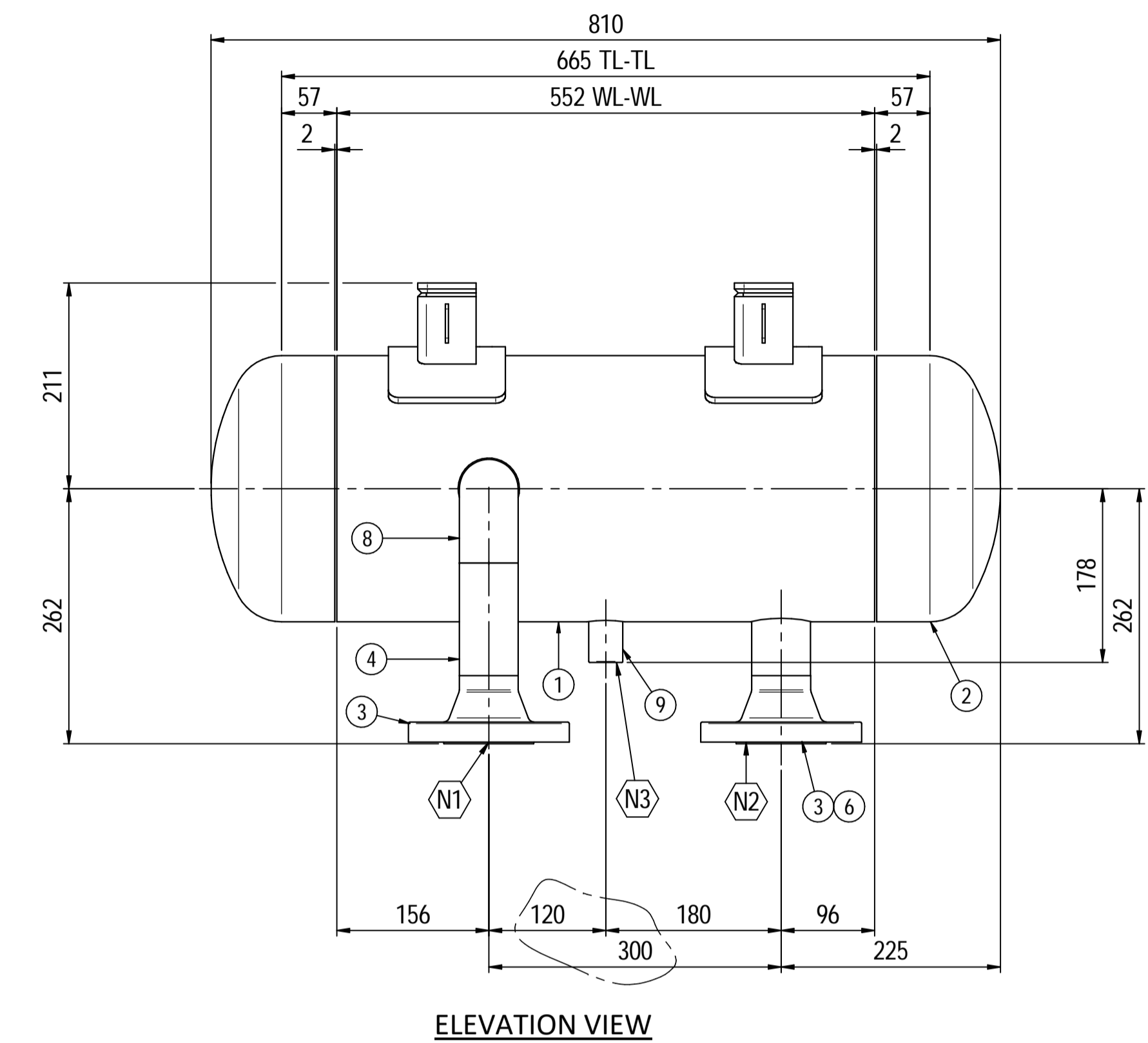
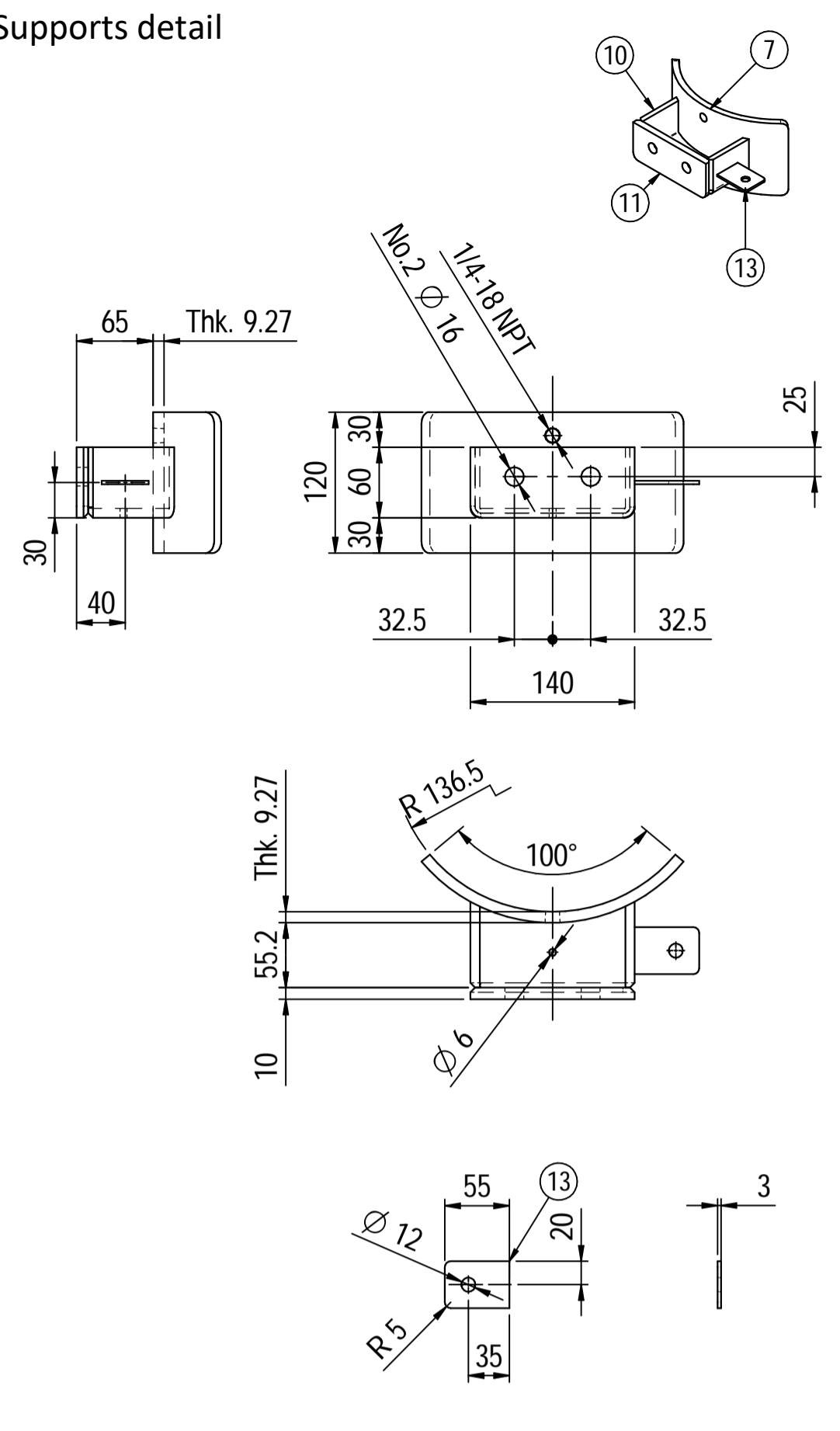
Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
02	Modified as per Client comments	CM	MV	GL	15/04/2022
01	Modified straight flange length on cap	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Objetto/Object: **N2 PULSATION DAMPER INLET**

Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Nederland B.V.		
Ord. No.	18498-VV-0901		
Dis. N°/Dwg No.	C220006DWG003	Rev.	02

LOCATI IMPIANTI s.r.l.





Material List					
Pos.	Q.ty	Description	Mat.	Cert.	
1	1	Shell by seamless pipe 10" Sch.STD L=552	SA106 Gr.B	3.1	
2	2	Cap 10" Sch40	A234 WPB	3.1	
3	2	Flange 2" WN #300 RF Sch.160	A105	3.1	
4	1	Seamless pipe 2" Sch160 L=115.5	A106 GrB	3.1	
5	1	Seamless pipe 2" Sch160 L=69	A106 GrB	3.1	
6	1	Seamless pipe 2" Sch160 L=68	A106 GrB	3.1	
7	2	Pad by pipe 10" Sch.STD	A106 Gr.B	3.1	
8	1	Seamless elbow 2" 90° LR Sch160	A234 WPB	3.1	
9	1	Coupling 1/2" NPT #6000	A105	3.1	
10	2	Plate 74.5x231 Thk.8	A516 70	3.1	
11	2	Plate 16x65 Thk.10	A516 70	3.1	
12	1	Nameplate support 156x241 Thk.3mm	A516 70	3.1	
13	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L	3.1	

Note:  
 1) Governing measurement S.I. unless otherwise specified;  
 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;  
 3) Material: certification 3.1 EN 10204;  
 4) All internal edge shall be rounded off;  
 5) Nozzle flanges in accordance with ASME B16.5: 2013;  
 6) Flange fittings in accordance with ASME B16.9: 2012;  
 7) The flange dimensions are in accordance with ASME B16.5: 2013;  
 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;  
 9) All welds are continuous except where indicate;  
 10) See document C220006CLC011 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	Tc
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	-	8.5 ± 10
N2	1	AIR OUTLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 ± 10
N1	1	AIR INLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 ± 10

DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO	14.5 bara	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	25 bara (26 barg)	X-RAY	RT examination
PRESSIONE ESTERNA	NO	LICUIDI PENETRANTI	NO
PRESSIONE DI PROVA IDRAULICA	66.4 barg	ULTRASUONI	NO
TEMPERATURA DI ESERCIZIO	+50 °C	CONTROLLO MAGNETOSCOPICO	NO
TEMPERATURA DI PROGETTO	+85 °C	MAGNETIC PARTICLE EXAMINATION	NO
SOVRAMEALLO DI CORROSIONE	3 mm	PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
CAPACITA'	38 l	TIPO DI FONDO	CAP
EFFICIENZA GIUNTI	0.85	FORMAZIONE FONDO	HOT
MAWP @ Design Temperature	38.12 bar @ +85 °C	PESO A VUOTO	71 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO	71 kg
MDMT @ MAWP	0 °C @ 38.12 bar	PESO PIENO D'ACQUA	111 kg
TRATTAMENTO TERMICO	NO	DATI DEL VENTO	-
IMPACT TEST	NO	DATI SISMICI	-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
03	Modified as per Client commnets	CM	MV	GL	15/04/2022
02	Modified as per Customer commnets	CM	MV	GL	02/04/2022
01	Modified shell length	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Oggetto/Object			
N2 PULSATION DAMPER 2nd STAGE SUCTION			
Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Nederland B.V.		
Ord. No.	18498-VV-0901		
Dis. N°/Dwg No.	C220006DWG005	Rev.	03