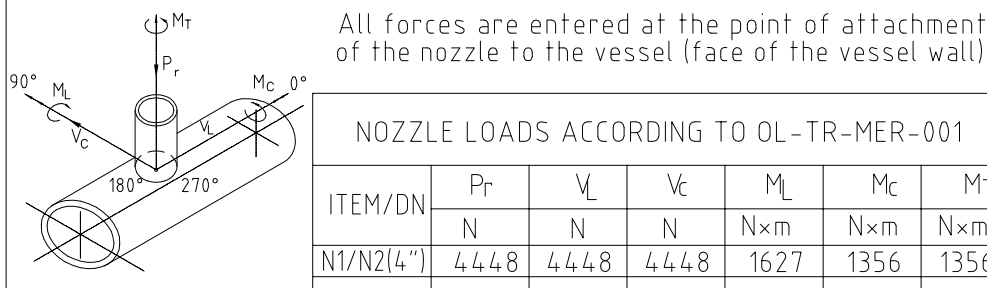


TIGHTENING TORQUES FOR BOLTINGS	
BOLT SIZE	MAX. TIGHTENING TORQUE (Nm)
M20	380

PAINTING:
ACCORDING TO SG 8194.005 EQUAL TO OL-TR-CR-011.
SURFACE PREPARATION SSPC SP-10 25+40 µm.
PRIMER PAINTING SYSTEM IB THICKNESS 75+100 µm IN ONE COAT.
FINISH: N.A. (APPLIED IN FIELD)



LIST OF CONNECTIONS

MARK	NO REQ'D	SERVICE	SIZE	FLANGE RATING	TYPE	FACE	NOZZLE ODxTHK	PROJECTION FROM C.L.	REINFORCING OD x THK	REMARKS
N1	1	SHELL SIDE INLET	4"	150#	WN	RF	114.3 x 8.56	410	216 x 10	-
N2	1	SHELL SIDE OUTLET	4"	150#	WN	RF	114.3 x 8.56	410	216 x 10	-
N3	1	CHANNEL SIDE INLET	2"	150#	LWN	RF	82.5 x 15.85	410	-	-
N4	1	CHANNEL SIDE OUTLET	2"	150#	LWN	RF	82.5 x 15.85	410	-	-

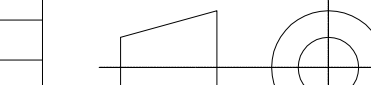
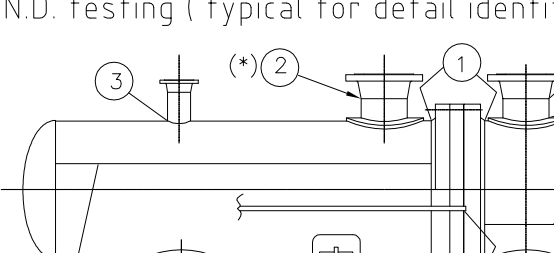
- CONNECTIONS AS PER ANSI B16.5 - FLANGES SEALING SURFACE FINISHING: Ra=3.2+6.3µm (125+250 µin AARH).
(1) - WITH BLIND, GASKETS, BOLTS, NUTS.

-THE SUPPLIER SHALL BE ENTIRELY RESPONSIBLE TO:
(i) DETERMINE ALL THE COUNTRY/LOCAL APPLICABLE INSTALLATION REQUIREMENTS, REGULATIONS, OTHER REQUIREMENTS, CODES AND STANDARDS THAT RELATE IN ANY WAY TO THE SCOPE OF SUPPLY AND;
(ii) COMPLY WITH THE FOREGOING.
-SUPPLIER'S DEFAULT AND NON-COMPLIANCE WITH COUNTRY/LOCAL APPLICABLE INSTALLATION REQUIREMENTS, REGULATIONS, OTHER REQUIREMENTS, CODES AND STANDARDS SHALL BE RECTIFIED BY THE SUPPLIER WITHOUT ANY ADDITIONAL COSTS AND/OR DELAYS TO DELIVERY SCHEDULE; PROVIDED, HOWEVER, THAT SUPPLIER SHALL NOT BE RESPONSIBLE TO COMPLY WITH THE OBLIGATIONS CONTAINED IN THE FOREGOING (i) AND (ii) ONLY WITH RESPECT TO THE PROJECT DESIGN PERFORMED BY BUYER, IF APPLICABLE.
-SUPPLIER SHALL RECTIFY AND/OR REPLACE PARTS/EQUIPMENT AS REQUIRED TO ENSURE COMPLIANCE TO INSTALLATION COUNTRY REGULATIONS, STATUTORY REQUIREMENTS, CODES AND STANDARDS OR THE LIKE.
COMPLIANCE WITH ITALIAN D.LGS. 230-95 ON PROTECTION FROM IONIZING RADIATION
-IRRESPECTIVE OF THE COUNTRY OF FINAL INSTALLATION, IN ORDER TO ENSURE COMPLIANCE WITH THE MANDATORY REQUIREMENTS OF LEGISLATIVE DECREE NO.230 OF 1995 (AS FURTHER AMENDED AND SUPPLEMENTED):
-ITEMS CONTAINING ONE OR MORE SOURCES OF IONIZING RADIATION WITH TOTAL ACTIVITY INTENSITY BELOW 1000 TIMES THE VALUES LISTED IN TABLE IX-1 OF D.LGS. 230/95, IF REQUIRED TO BE SHIPPED TO ITALY FOR ANY PURPOSE AT ANY GE OIL & GAS PLANT LOCATED WITHIN THE ITALIAN TERRITORY, WILL NEED TO BE
(i) SHIPPED SEPARATELY FROM ANY OTHER ITEM OR COMPONENT;
(ii) LABELED IN ACCORDANCE WITH THE REQUIREMENTS SET OUT IN ARTICLE 61 OF LEGISLATIVE DECREE NO.230 OF 1995, PARAGRAPH 3°g, AND ARTICLE 11 OF LEGISLATIVE DECREE NO.52 OF 2007, PARAGRAPH 4; AND
(iii) WITH AN EXTERNAL PACKAGING PROPERLY LABELED PURSUANT TO ANY APPLICABLE RULES AND REGULATIONS ON TRANSPORTATION OF DANGEROUS (RADIOACTIVE) GOODS
(iv) BE ACCOMPANIED BY AN ISO2919 COMPLIANT CERTIFICATE RELATED TO THE INDIVIDUAL S/N
-ITEMS CONTAINING ONE OR MORE SOURCES OF IONIZING RADIATION WITH TOTAL ACTIVITY INTENSITY IN EXCESS OF 1000 TIMES THE VALUES LISTED IN TABLE IX-1 OF D.LGS. 230/95 IN NO EVENT WILL BE SHIPPED TO ITALY.
IRRESPECTIVE OF THE COUNTRY OF FINAL INSTALLATION, SUPPLIER SHALL PERFORM RISK ASSESSMENTS FOR THEIR DESIGNS, IN ACCORDANCE WITH THE PRINCIPLES DEFINED BY ISO 12100-2010 OR ITS MOST CURRENT VERSION, AND DOCUMENT ALL RESIDUAL SAFETY RISKS TO GEI(GEOMS 7.3.8, CLAUSE 4.3.3).
ANY DELAY IN THE DELIVERY OF ANY OF THE FOREGOING DOCUMENTS/ CERTIFICATES SHALL BE SUBJECT TO THE APPLICABLE LIQUIDATED DAMAGES PROVISIONS PURSUANT TO THE APPLICABLE GE O&G GENERAL TERMS OF PURCHASE.

General Notes	
1) The holes on all flanges must be staggered on vertical axis and equally spaced	
2) The corners of forgings not shown must be chamfered 1 mm at 45°	
3) Welds not specified shall be continuous with a side of 7/10 approx of min. thk	
4) Grind the projections inside the shell if any. Round off the internal corners off nozzles to 3mm radius	
5) Chamfer the corners on periphery of baffles and support	
6) For execution of grooves for partitions see ITV24005	
7) Tolerance of grooves for partitions: Width +15/0 Depth -0.8/0 position of grooves and partitions ±0.8	
8) For welding partitions see ITV24002	
9) Welding process according to SOP12957	
10) Spare parts and maintenance data according to ITN01303	
11) Hydraulic test according to ITV64000. Fixture required for test shall be supplied together with the cooler	
12) Exchanger supply according to ITN04001	
13) Fabrication Tolerance according to ITV24000, where not specified tolerances ± 1.5	
14) Inspection and testing plan according to QCP	
15) Construction cannot start before the approval of WPS/PQR	
16) Bolts and nuts shall be Zinc coated Fe/Zn 12 ±2C ISO4042 as per ITN07800.	
17) Pneumatic test on reinforcement pads acc to ITN07022 @ 170 Kpa (25 psi) Hydrostatic test according to ITN07021	
18) On the external surface of Hb grinding, etching and arc strike shall be avoid grinding of welds is allowed with a finish of 250 AARH.	
19) If 3rd part approval is on the scope of supply of the manufact', it will be responsible of the accuracy of the drawings and calculations.	

Design Codes	EN13445, Ed '14 + PED 2014/68/EU TEMA "R" + API 660 + NACE MR0175			
	Shell Side		Tube Side	
Design pressure	barG 8	Psig 116.03	barG 8	Psig 116.03
Operating pressure	barG 6.4	Psig 92.82	barG 3	Psig 43.5
Design temperature	°C -36/130	°F -32.8/266	°C -36/130	°F -32.8/266
Steam / Dry out condition barg @ °C	5.8/8 @ 180/80			
Operating temperature (IN-OUT)	°C 100-38	°F 212-100	°C 27-32	°F 80.6-89.6
Full Vacuum Design	YES		NO	
MAWP	barG 12.3	Psig 178.4	barG 12.3	Psig 178.4
Minimum Design Metal Temperature	-36 °C -32.8 °F		-36 °C -32.8 °F	
Shop test pressure	barG 11.44	Psig 165.9	barG 11.44	Psig 165.9
Field test pressure	barG 11.44	Psig 165.9	barG 11.44	Psig 165.9
Corrosion allowance	3 mm		3 mm	
Joint Efficiency	1		1	
P.W.H.T.	YES		NO	
Medium	REGENERATION GAS		COOLING WATER	
Lethal	SEE NOTE F13		SEE NOTE F13	
Inspection	PED NOTIFY BODY			
PED Category /PED Module	IV /G			
Installation Country	JUODEIKIAI, LITHUANIA			
No passes per shell	1		6	
N° Tubes / O.D. / Thk.	31U	20 mm	2.3 mm (Avg. thk.)	
Tubes Length /Pitch/Layout	3000 mm	26 mm	90°	
HE Type/Size/Actual surface	BEU	330 x 3000 mm	113 m²	
Tube/Tubesheet joint	GROOVED EXPANDED + SEAL WELD			
Carbon/Carbon equiv. limitat.	≤ 0.23 %		≤ 0.45 %	
Volume	0.210 m³	7.4 cuft	0.065 m³	2.3 cuft
Empty Weight	1603 lb	ib	727 kg	kg
Bundle Weight	551 lb	ib	250 kg	kg
Hydrotest Weight	2209 lb	ib	1002 kg	kg

5th
ISSUE
Date
22.11.18

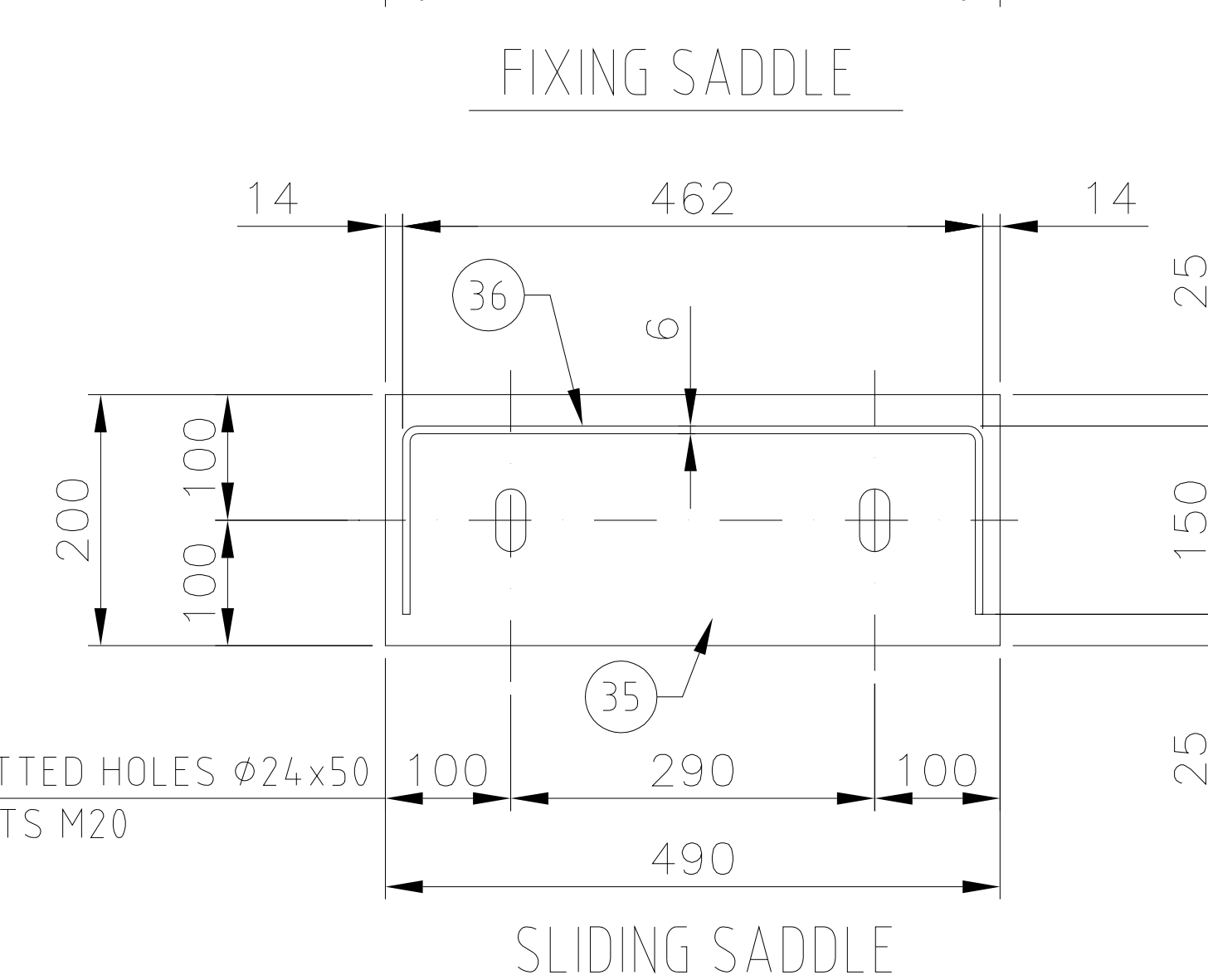
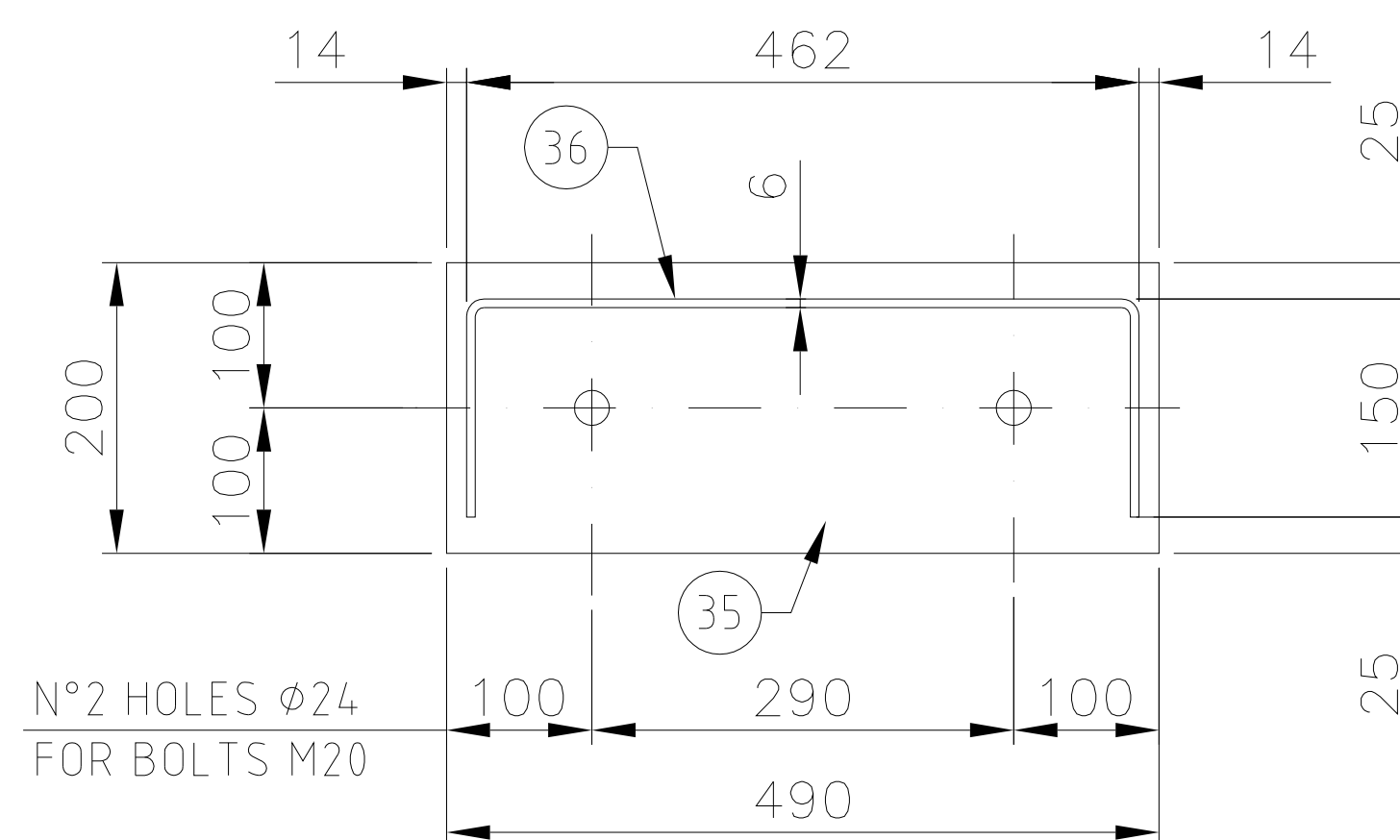
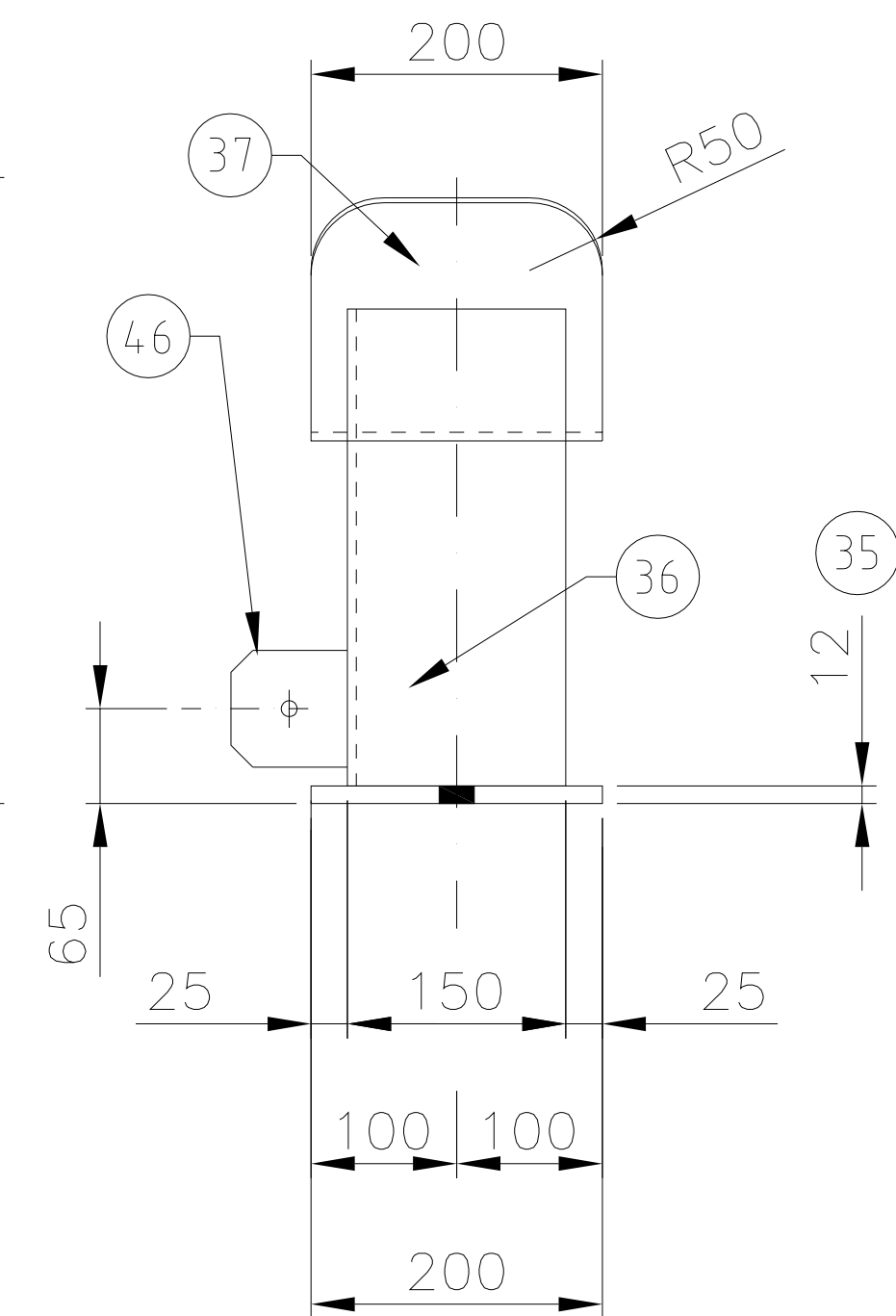
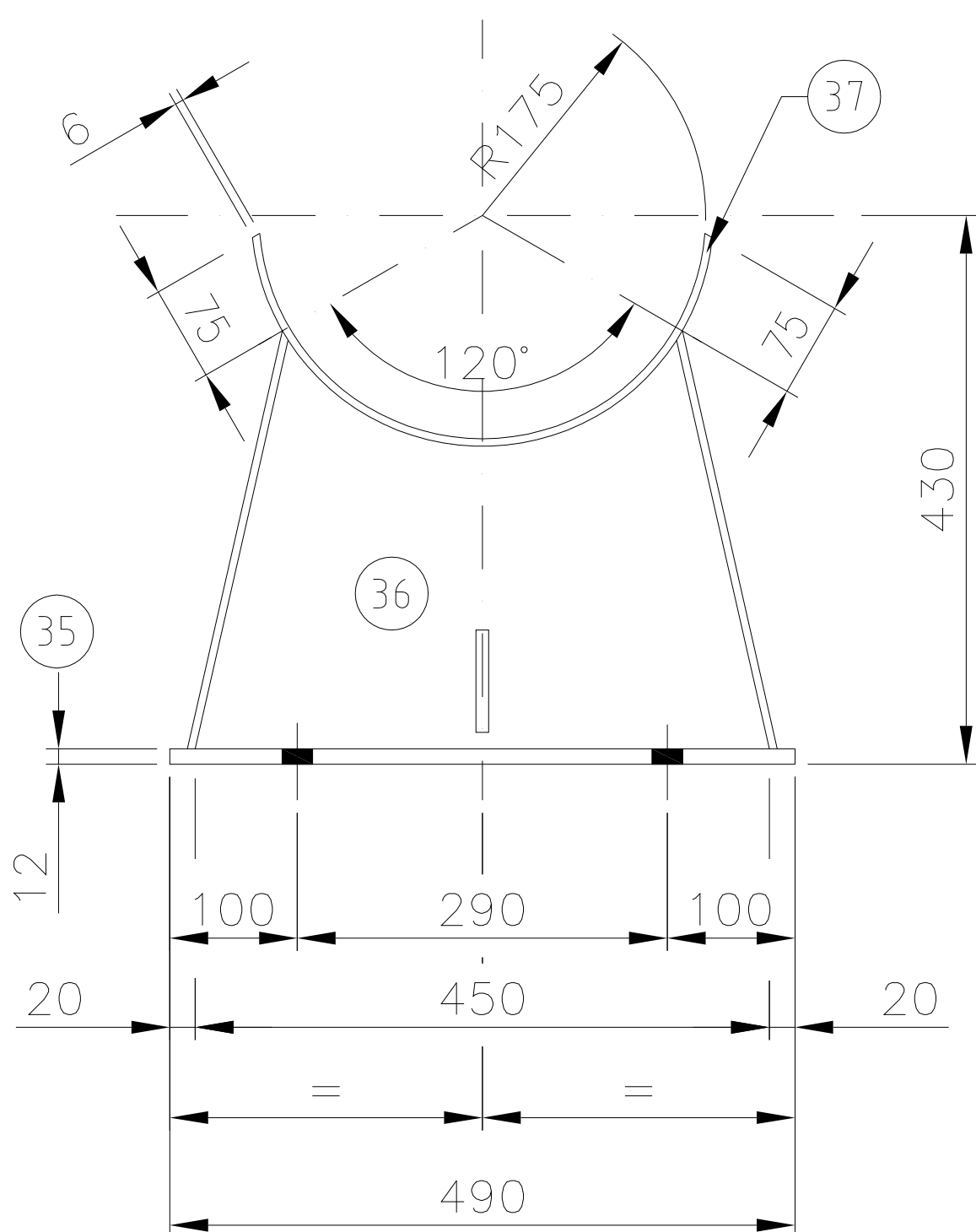
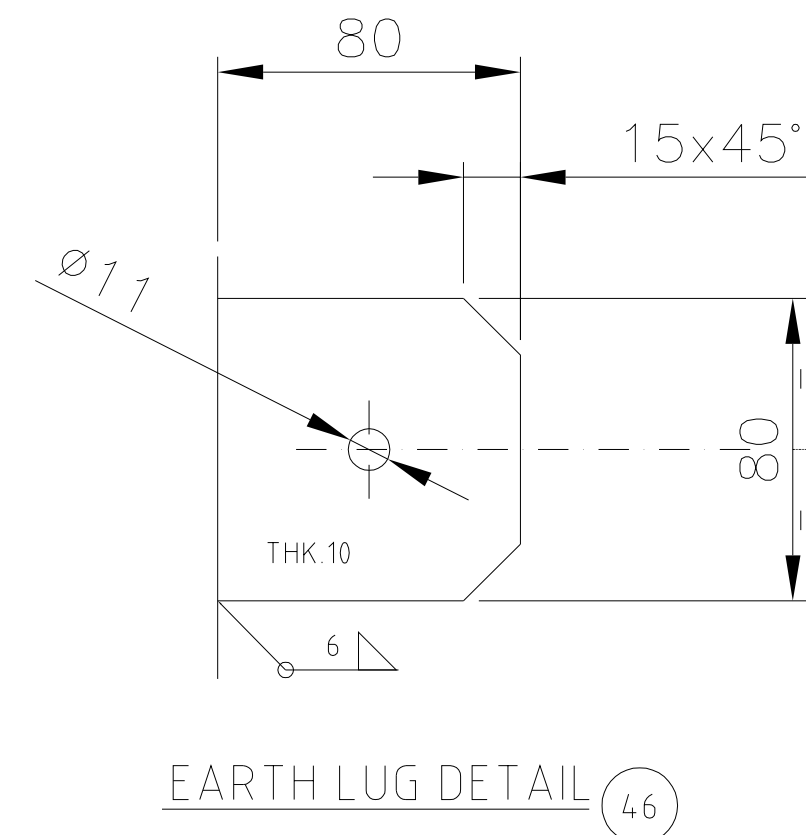
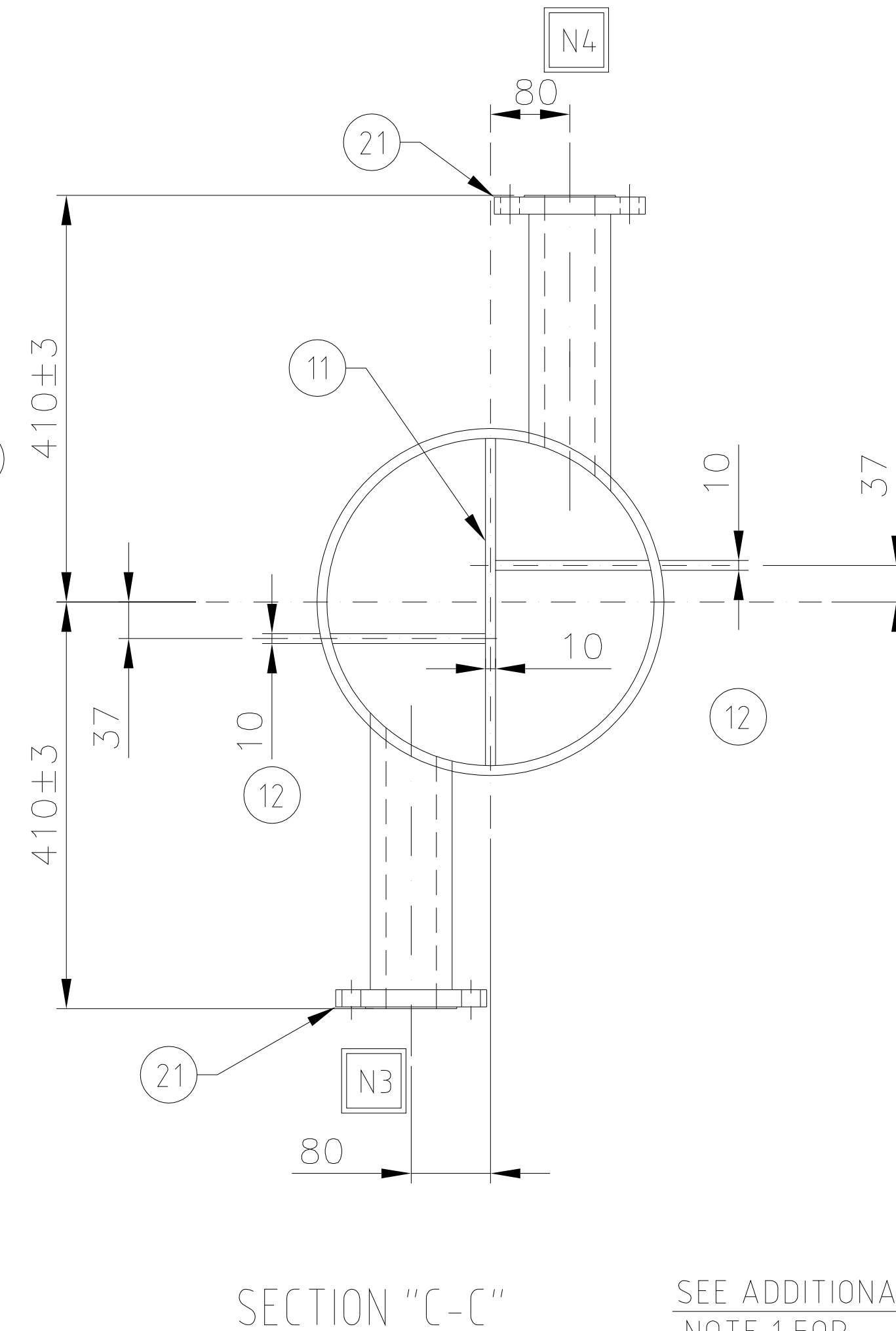
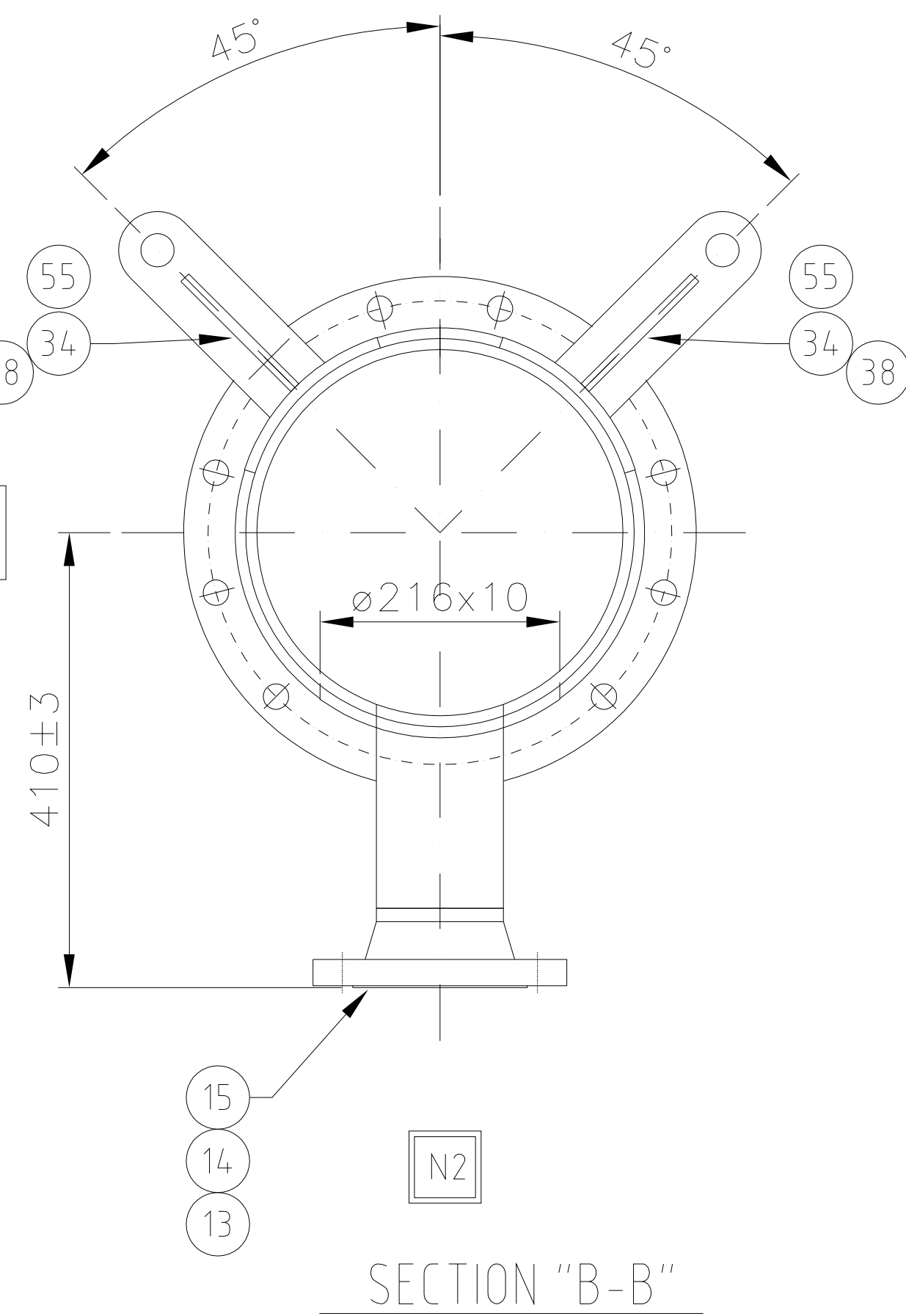
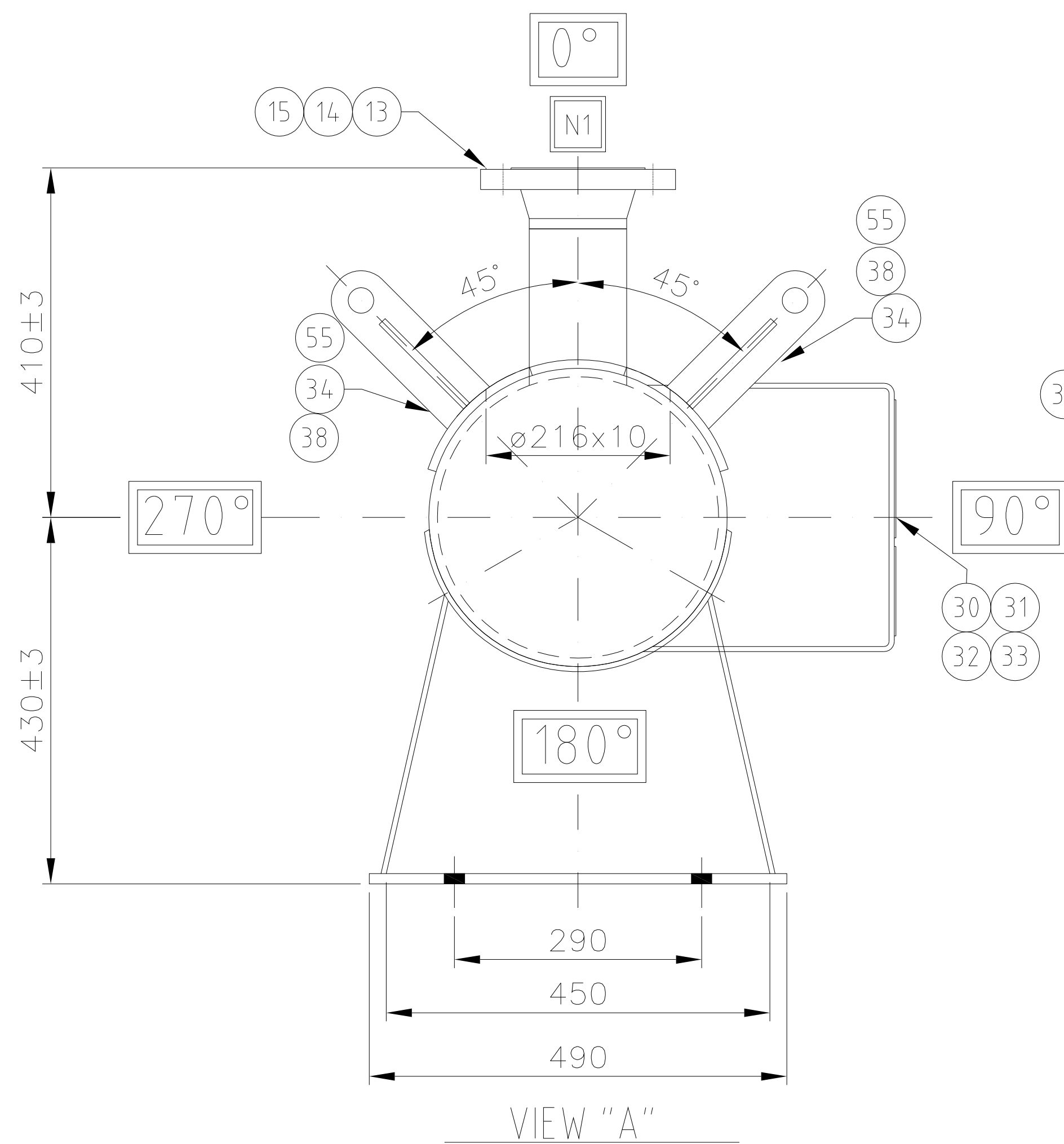
ø PIPE	BENDING RADIUS				
1"	95				
1 1/2"	150				
2"	210				
N.D. testing (typical for detail identification)			N°	Test	Extens.
			1	R.T.	100%
			2	R.T.	100%
			3	M.T.	100%
			4	M.T.	100%
			5	P.T.	100%
			6	V.T.	100%

-ALL TESTS SHALL BE CARRIED OUT IN ACCORDANCE WITH EN CODE
(*) TYPICAL FOR ALL FLANGES TO PIPE WELDED

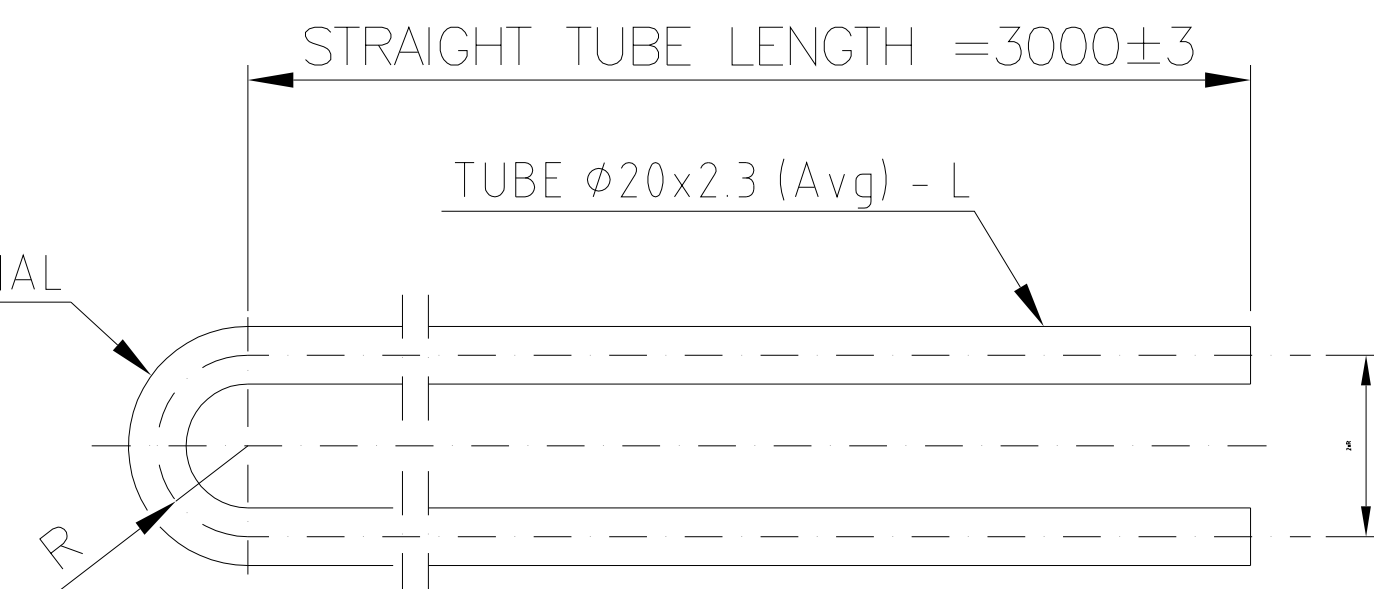
WORK USE ONLY		
F13) WARNING - THIS VESSEL CONTAINS GASES WHICH CAN BE DANGEROUS IN CASE OF INHALATIONS EVEN IF IT IS NOT DEFINED "LETHAL" ACCORDING TO THE LAW.		
Additional notes for U tube		
1. Allowable flattening after bending: Sc%≤20/(R/do) Max. 10%.		
2. The tubes shall be seamless.		
3. After bending check hydraulic test for "U" tubes bar and DP test on bending area of the most internal 2(two) rows.		
4. After hydraulic test "U" tubes shall be protected with oil.		
5. Qualification of bend method on "U" tube coupon is required.		
6. Eddy current shall be performed before bending of "U" tube.		
7. Stress relieve is required after tube bending.		

BHGE REFERENCE STANDARD DOCUMENTS FOR MANUFACTURER USE	
ITV24000 HE Fabrication tolerances	ITN01300 Minm. requirement for documentation
ITV64000 Hydrostatic test procedure	ITN01301 Instruction and maintenance manual
ITV24002 Typ. welding detail of partition full penetration	ITN01303 Req. for spare parts & maint. data
ITV24005 Grooves for partitions	ITN01305 Minimum requirement for supplier documentation
ITV24009 Groove holes for tubes drilling	ITN02112 Instruction for reinforcing plate
ITN00105.01 Rules for drawings execution	ITN02500.96 Welding details
ITN02175.04 Preservation, shipping and storage for steel products	ITN 07021 Hydrostatic pressure testing procedure
ITN54750.00 Marking, preservation, packing for shipping	ITN 07022 Pneumatic seal testing
ITN83000 Flanges requirement	ITN07039 Ultrasonic examination of welding
ITN84617 Spiral metal gaskets with inner ring for RF flanges	ITN07040 Visual examination procedure
SOP41329 Preparation/protection of surfaces	ITN07771 Certification
SOP12957 Welding processes	ITN07791 General rules of painting
ITN0000010 Machine plate brand	ITN07800 Surface protection for bolting
ITN33202 Tie rods completely threaded by rolling	ITN32528 Mean root stud bolts
ITN34050 Hexagonal nuts	ITN32500 Set screw iso metric coarse thread
ITN02151 Ultrasonic examinations of forgings, presswork and bars procedure	ITN02312 Deviations for dimensions without indication of tolerance
SV_49593 HE nameplate and support	ITN32211 Hexagonal head screws
ITN33105 Circular eyebolts	
BHGE APPLICABLE DOCUMENTS	
SG 7525825 Mechanical calculation	SG 8206162 QCP
SG 7386424 Welding Dossier	SG 8194005 Painting
SOP0003539 Lifting and transportation drawing	

BHGE Nuovo Pignone International S.r.l.					
The document approval does not relieve the vendor of his responsibility to meet all requirements of the purchase order					
<input type="checkbox"/> A Approved, proceed with fabrication					Originator(BHGE):
<input type="checkbox"/> CA Conditionally approved, proceed, change as noted, revised issue					Date:
<input type="checkbox"/> RL Released					Signature
<input type="checkbox"/> FI Used for information only, no further action required					
<input type="checkbox"/> R Rejected; to be resubmitted for review					
<input type="checkbox"/> C Cancelled					
<input type="checkbox"/> F Final					
4	22.11.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUED AS BUILT
3	19.10.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	REVISED WHERE INDICATED AND SHEETS 2,5,6,8
2	10.07.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	REVISED WHERE INDICATED
1	20.06.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	GENERAL REVISION AND SHEETS 2+4, 6, 8
0	25.05.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUE FOR 3D MODEL DESIGN
REV.	DATE	CREATED BY	CHECKED BY	APPROVED BY	DESCRIPTION
PROPRIETARY AND CONFIDENTIAL					
PROJECT NAME: Propane Propylene Fraction (PPF) Splitter			SUBSUPPLIER INFORMATION: CLIENT PROJECT NO.: OLP01011		
CLIENT NAME: ORLEN Lietuva			LOCATION: Juodeikiai, Lithuania		
REPLACES			SUPPLIER/CONTRACTOR IDENT NO.:		
			CLIENT PROJECT DOC. NO.: OLP-01011-DP-M-GA912		
BAKER HUGHES a GE company			TITLE: AV-444 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING		
REVISION DESCRIPTION ISSUED AS BUILT			DOCUMENT CODE: SG 8206596		
			REVISION 4		
			SECURITY CODE N		
			REVISION DATE 22-Nov-18		
			APPROVED ELECTRONICALLY STORED		
			CHECKED ELECTRONICALLY STORED		
			DRAWN P.E.S.		
			ORIGINAL JOB 64.00233		
			SIZE 1		
			LANGUAGE A		
			SHEET 1 of 2		



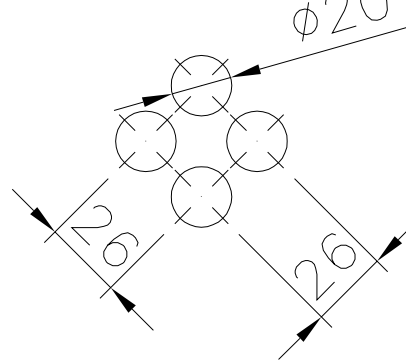
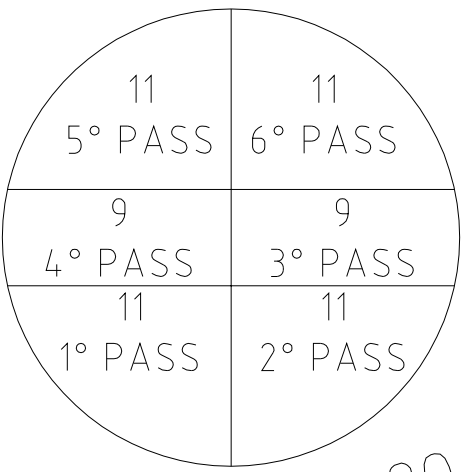
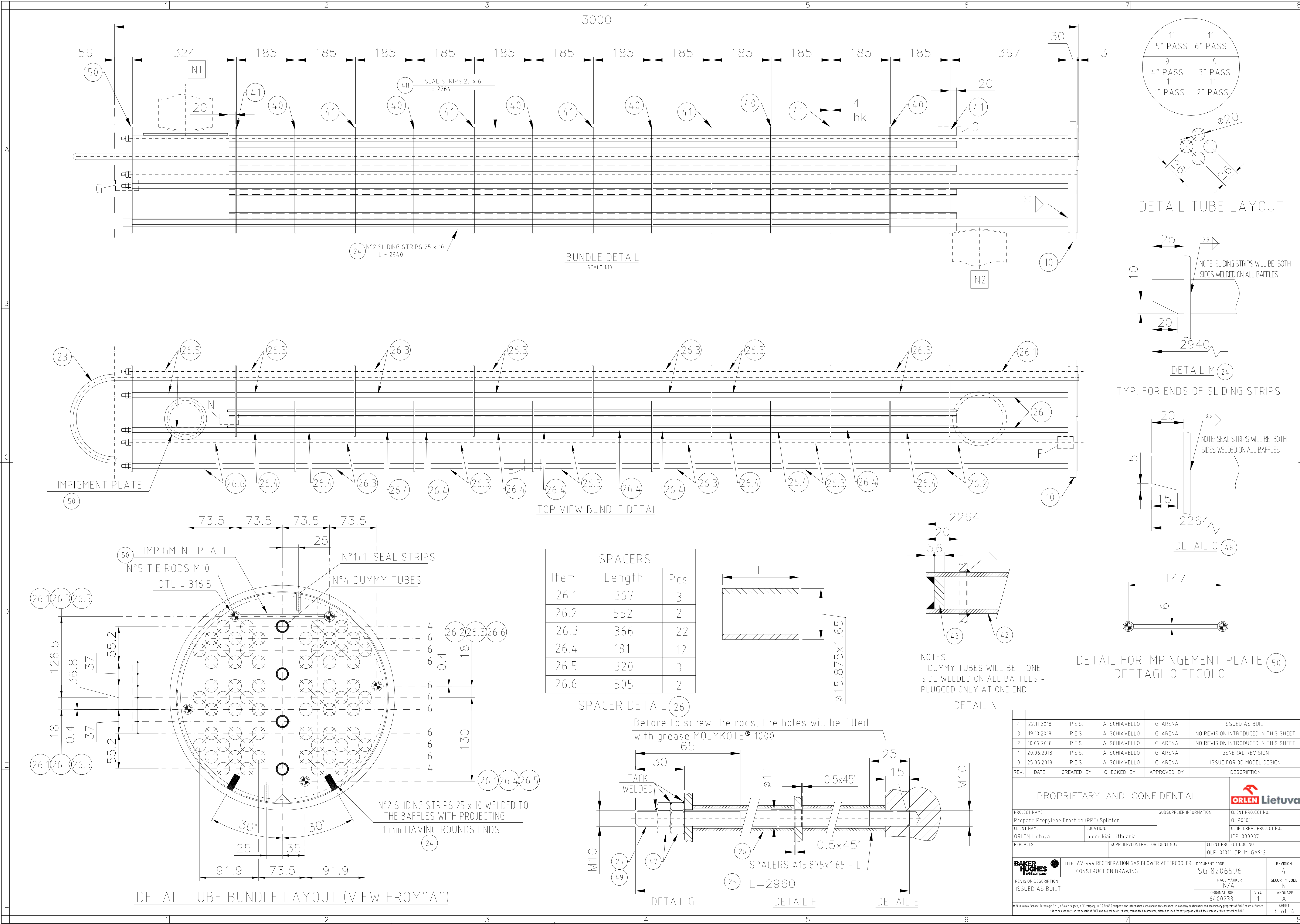
SEE ADDITIONAL
NOTE 1 FOR
"U" TUBE



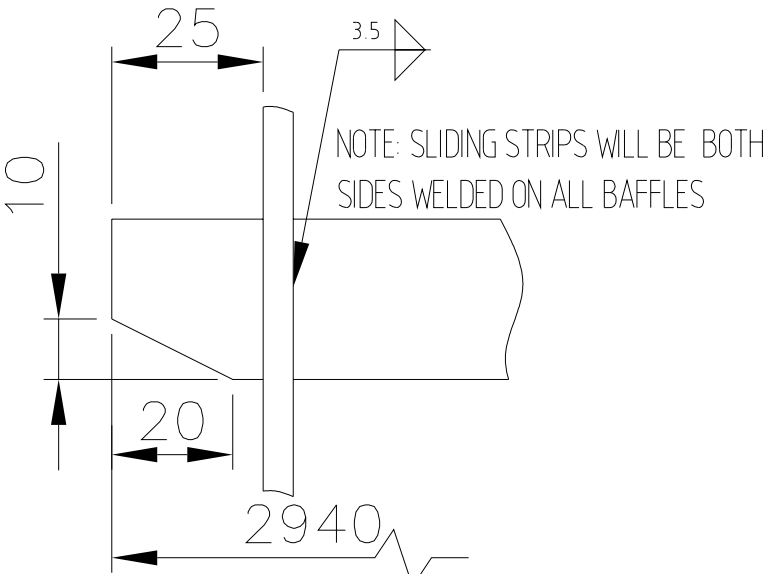
Item	R	Length	N° tubes
23.1	36.8	6116	6
23.2	55.1	6173	5
23.3	73.5	6231	6
23.4	91.9	6289	5
23.5	110.3	6347	6
23.6	128.6	6404	3
TOTAL			31

U TUBE DETAIL (23)
SCALE N.A.

4	22.11.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUED AS BUILT
3	19.10.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	REVISED WHERE INDICATED
2	10.07.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET
1	20.06.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	REVISED WHERE INDICATED
0	25.05.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUE FOR 3D MODEL DESIGN
REV.	DATE	CREATED BY	CHECKED BY	APPROVED BY	DESCRIPTION
PROPRIETARY AND CONFIDENTIAL					
PROJECT NAME Propane Propylene Fraction (PPF) Splitter			SUBSUPPLIER INFORMATION		CLIENT PROJECT NO. OLP01011
CLIENT NAME ORLEN Lietuva			LOCATION Juodeikiai, Lithuania		GE INTERNAL PROJECT NO. ICP-000037
REPLACES			SUPPLIER/CONTRACTOR IDENT NO.		CLIENT PROJECT DOC NO. OLP-01011-DP-M-GA912
TITLE AV-444 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING			DOCUMENT CODE SG 8206596		REVISION 4
REVISION DESCRIPTION ISSUED AS BUILT			PAGE MARKER N/A		SECURITY CODE N
ORIGINAL JOB 64.00233			SIZE 1		LANGUAGE A
SHEET 2 of 3			SHEET 2 of 3		

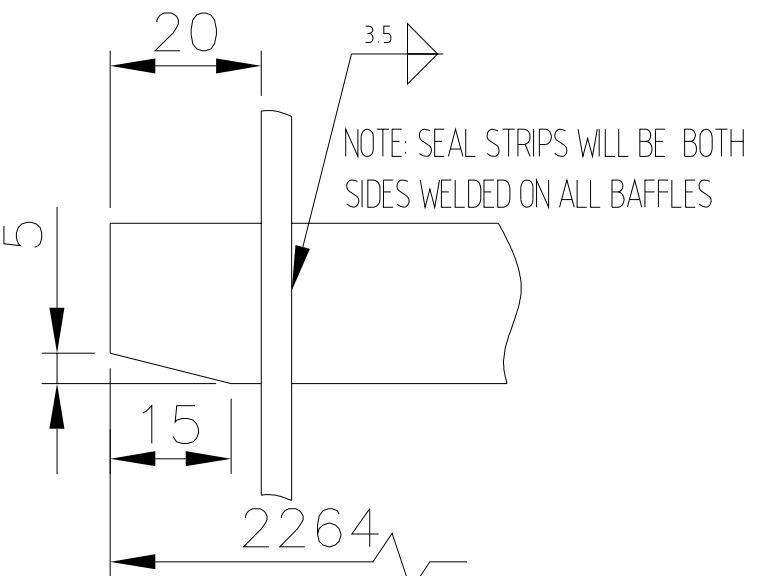


DETAIL TUBE LAYOUT

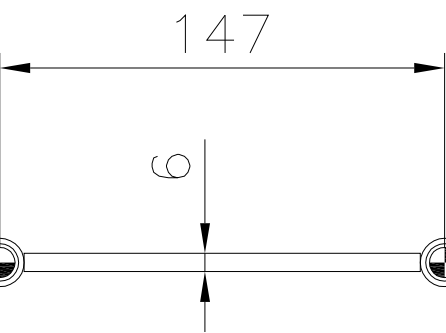


DETAIL M (24)



TYP. FOR ENDS OF SLIDING STRIPS



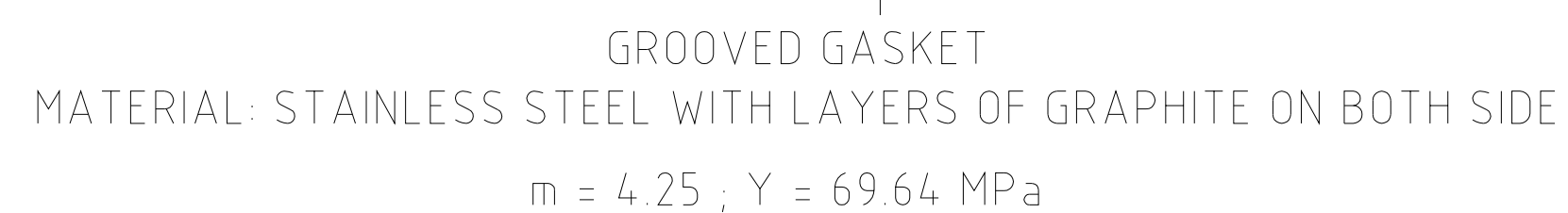
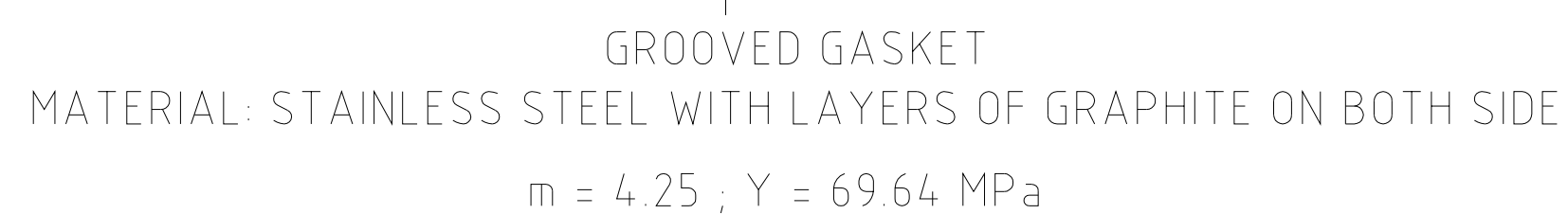
DETAIL O (48)





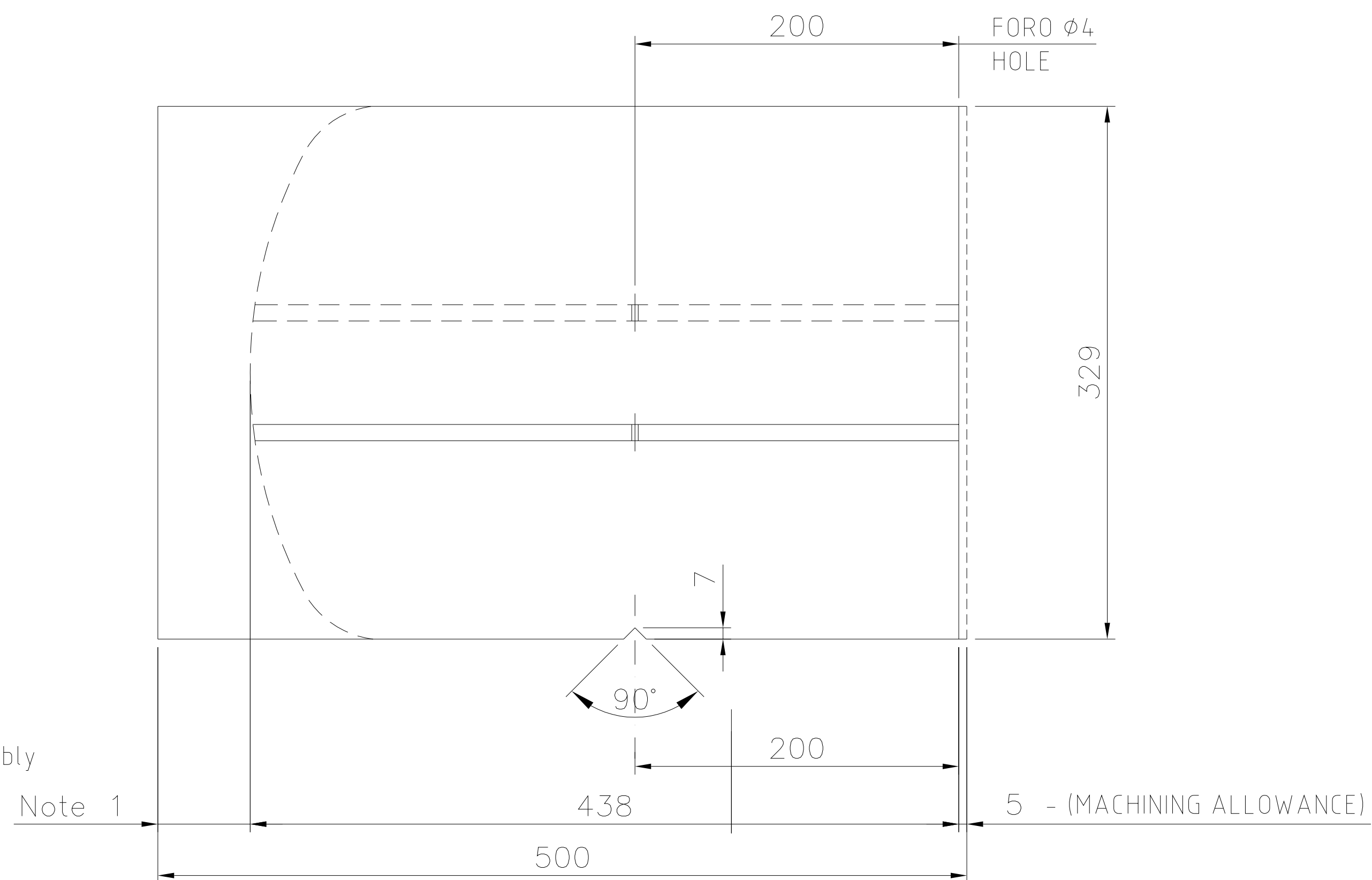
DETAIL FOR IMPINGEMENT PLATE (50)
DETTAGLIO TEGOLO

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3	19.10.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET
2	10.07.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET
1	20.06.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	GENERAL REVISION
0	25.05.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUE FOR 3D MODEL DESIGN
REV.	DATE	CREATED BY	CHECKED BY	APPROVED BY	DESCRIPTION
PROPRIETARY AND CONFIDENTIAL					
PROJECT NAME Propane Propylene Fraction (PPF) Splitter			SUBSUPPLIER INFORMATION		CLIENT PROJECT NO. OLP01011
CLIENT NAME ORLEN Lietuva		LOCATION Juodeikiai, Lithuania	GE INTERNAL PROJECT NO. ICP-000037		
REPLACES		SUPPLIER/CONTRACTOR IDENT NO.		CLIENT PROJECT DOC NO. OLP-01011-DP-M-GA912	
		TITLE AV-444 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING		DOCUMENT CODE SG 8206596	REVISION 4
REVISION DESCRIPTION ISSUED AS BUILT		PAGE MARKER N/A		SECURITY CODE N	LANGUAGE A
		ORIGINAL JOB 64.00233		SIZE 1	SHEET 3 of 4

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4	22 11 2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUED AS BUILT	
3	19 10 2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET	
2	10 07 2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET	
1	20 06 2018	P.E.S.	A. SCHIAVELLO	G. ARENA	REVISED WHERE INDICATED	
0	25 05 2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUE FOR 3D MODEL DESIGN	
REV.	DATE	CREATED BY	CHECKED BY	APPROVED BY	DESCRIPTION	
PROPRIETARY AND CONFIDENTIAL						
PROJECT NAME: Propane Propylene Fraction (PPF) Splitter			SUBSUPPLIER INFORMATION			
CLIENT NAME ORLEN Lietuva		LOCATION Juodeikiai, Lithuania	CLIENT PROJECT NO.: OLP10111			
			GE INTERNAL PROJECT NO.: [CP-000037]			
REPLACES		SUPPLIER/CONTRACTOR IDENT NO.	CLIENT PROJECT DOC. NO. QLP-0111-DP-M-GA912			
		TITLE AV-444 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING		DOCUMENT CODE SG 8206596	REVISION 4	
REVISION DESCRIPTION ISSUED AS BUILT				PAGE MARKER N/A	SECURITY CODE N	
				ORIGINAL JOB 64.00233		LANGUAGE A
				SIZE 1		
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					SHEET 4 of 5	

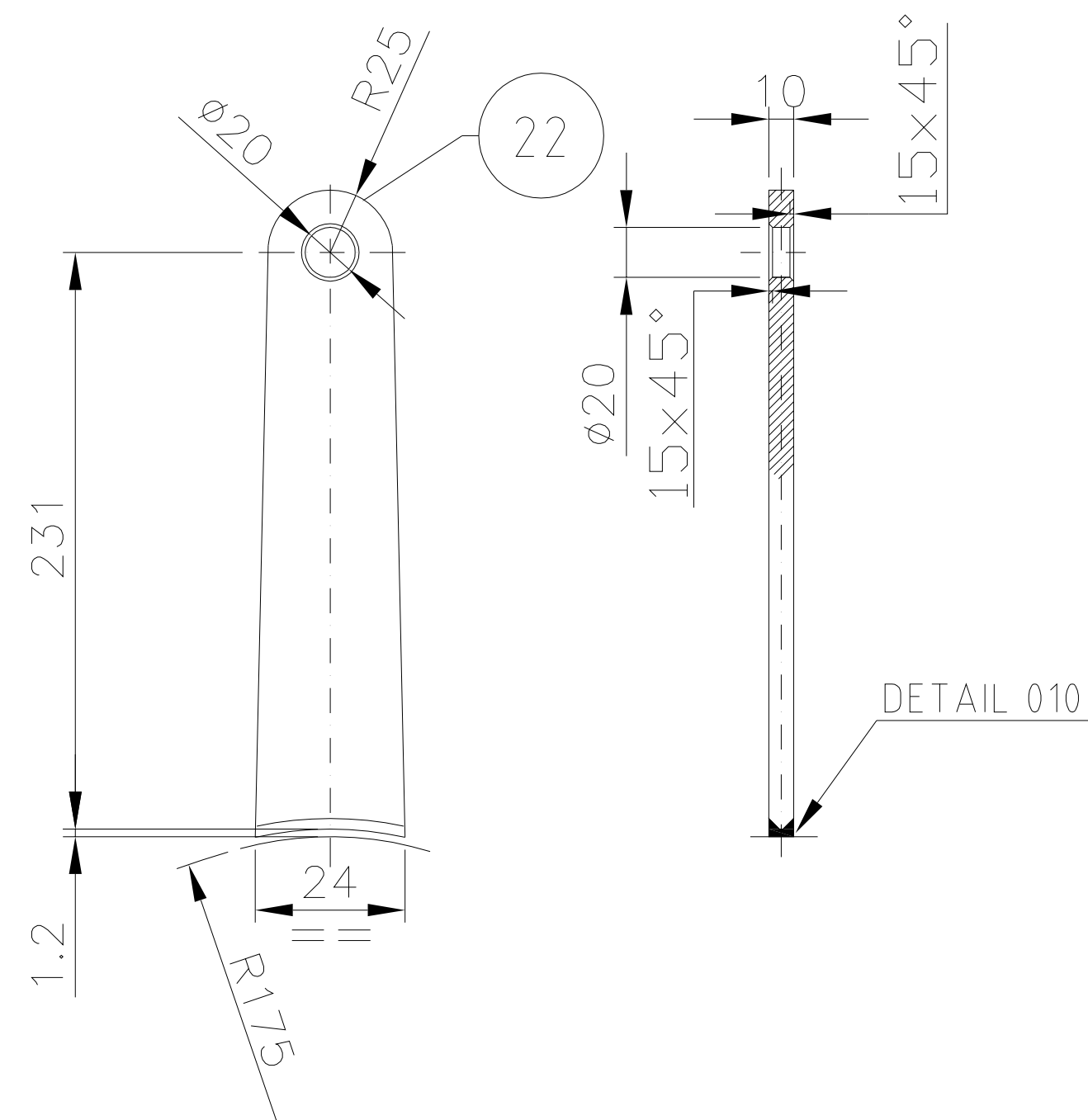


Note:
1) Adapting to cap inside surface shall be made before the assembly in the NUOVO PIGNONE workshop.

DETAIL FOR PASS PARTITION

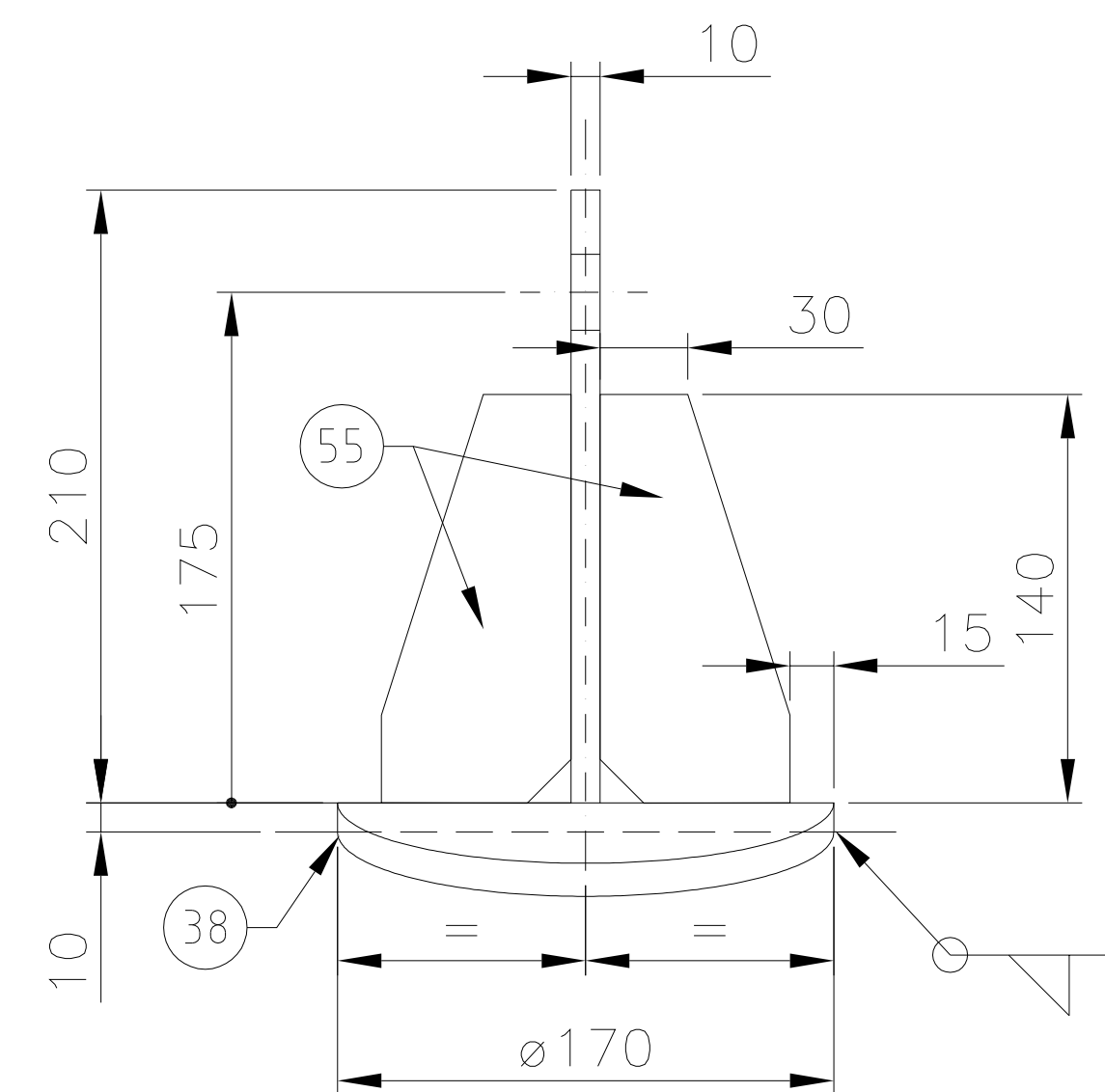
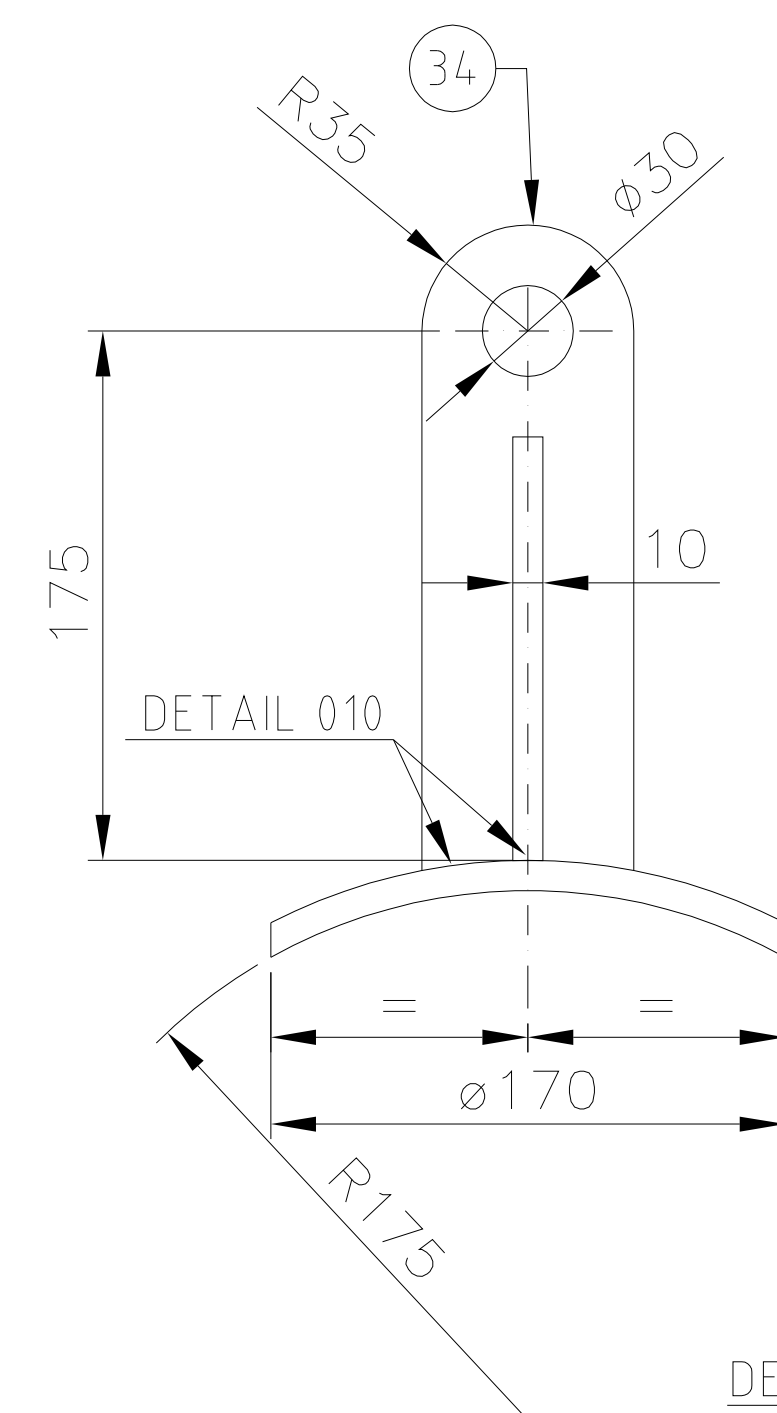
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11 12





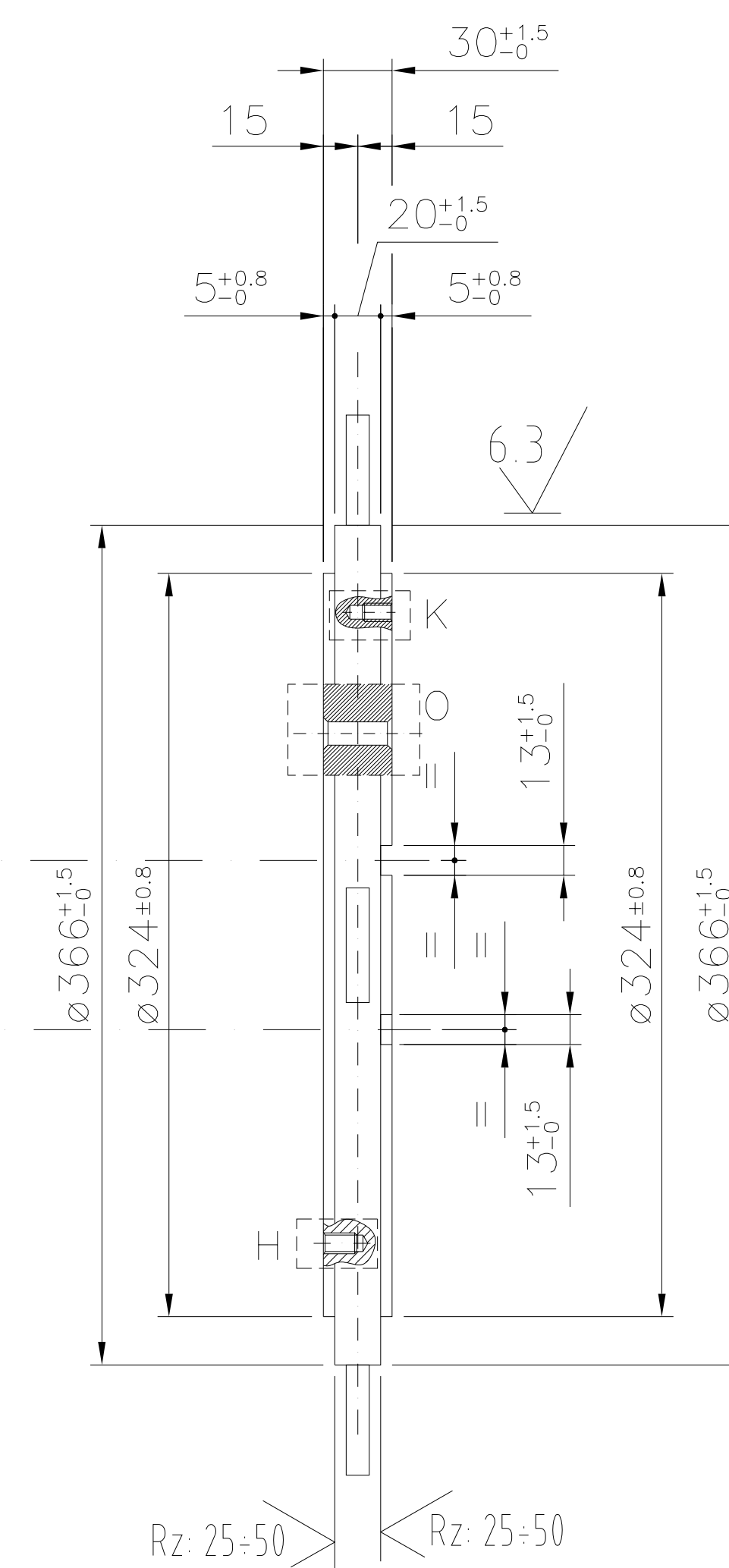
DETAIL FOR LIFTING LUGS ON FLANGE

DETAIL FOR LIFTING LUGS ON CHANNEL



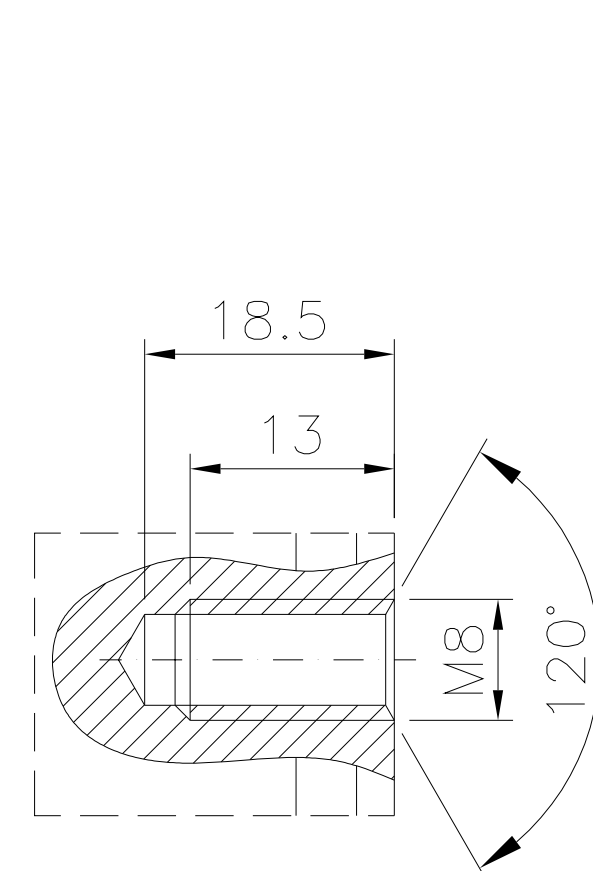
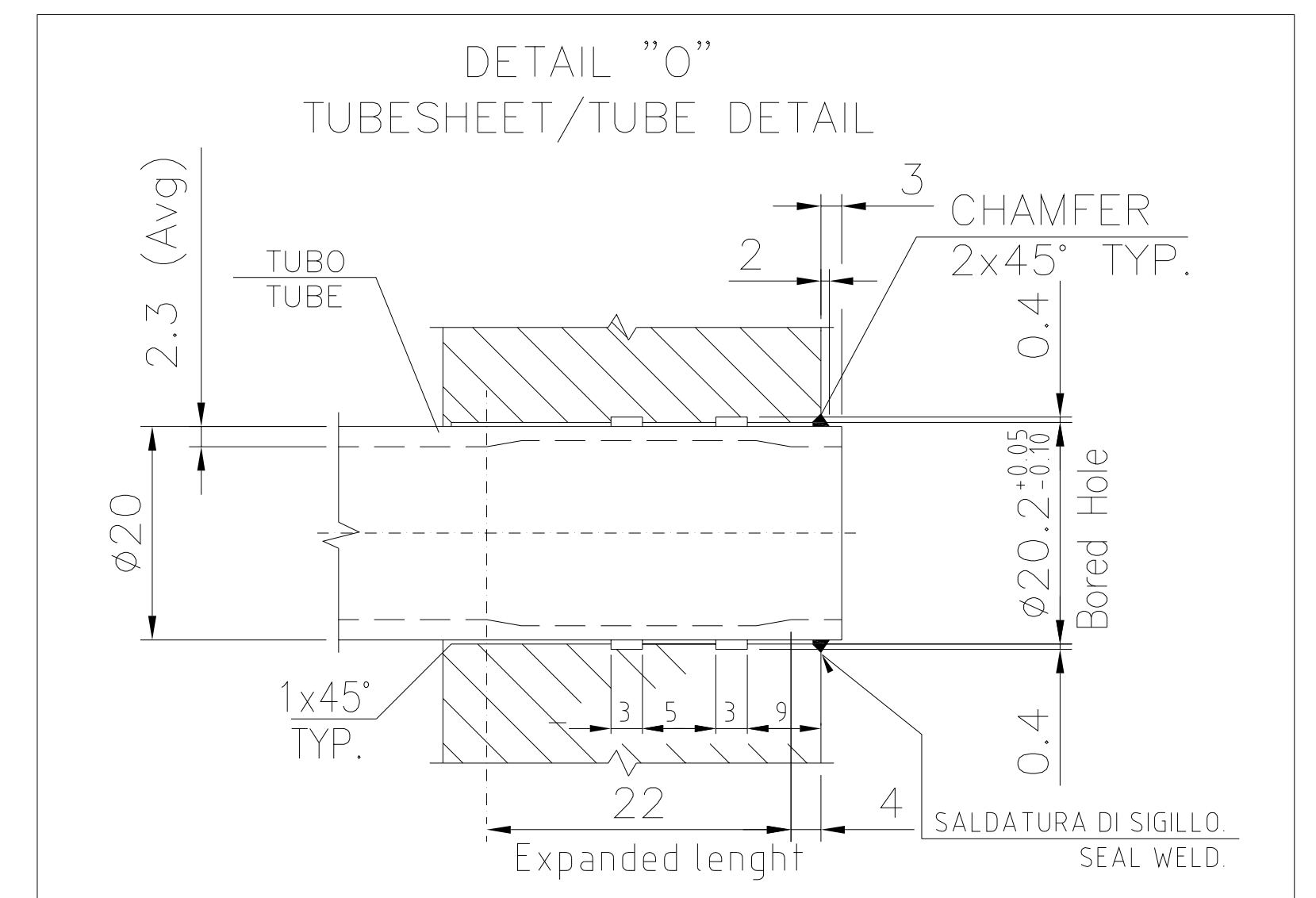
DETAIL FOR LIFTING LUG ON SHELL (34)(38)

4	22.11.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUED AS BUILT	
3	19.10.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	REVISED WHERE INDICATED	
2	10.07.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET	
1	20.06.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET	
0	25.05.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUE FOR 3D MODEL DESIGN	
REV.	DATE	CREATED BY	CHECKED BY	APPROVED BY	DESCRIPTION	
PROPRIETARY AND CONFIDENTIAL						
PROJECT NAME			SUBSUPPLIER INFORMATION		CLIENT PROJECT NO.	
Propane Propylene Fraction (PPF) Splitter					OLP01011	
CLIENT NAME		LOCATION	GE INTERNAL PROJECT NO.			
ORLEN Lietuva		Juodeikiai, Lithuania	ICP-000037			
REPLACES			SUPPLIER/CONTRACTOR IDENT. NO.	CLIENT PROJECT DOC. NO.		
				OLP-01011-DP-M-GA912		
		TITLE AV-44-447 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING		DOCUMENT CODE	REVISION	
				SG 8206596	4	
REVISION DESCRIPTION AS ISSUED AS BUILT				PAGE NUMBER	SECURITY CODE N	
				N/A		LANGUAGE A
				ORIGINAL JOB 64-00233		
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					SHEET 5 of 6	



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For holes see drilling layout for tubesheets, baffles and tie rods/spacer (See sheet 3/4).






Technical drawing of a mechanical part showing a cross-section. The drawing includes the following dimensions and features:

- M8**: Thread specification for the small cylindrical part on the left.
- 13**: Length dimension of the small cylindrical part.
- Ø20**: Diameter dimension of the central hole.
- Ø36**: Diameter dimension of the outer hole.


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Technical drawing of a mechanical part, likely a bolt or screw, showing dimensions: 19, 15, 120°, and M10.


DETAIL H

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PROJECT NAME Propane Propylene Fraction (PPF) Splitter		SUBSUPPLIER INFORMATION OLP01011
CLIENT NAME ORLEN Lietuva	LOCATION Juodeikiai, Lithuania	GE INTERNAL PROJECT NO. ICP-000037
REPLACES	SUPPLIER/CONTRACTOR IDENT NO.	CLIENT PROJECT DOC. NO. OLP-01011-DP-M-GA912



TITLE AV-444 REGENERATION GAS BLOWER AFTERCOOLER
CONSTRUCTION DRAWING

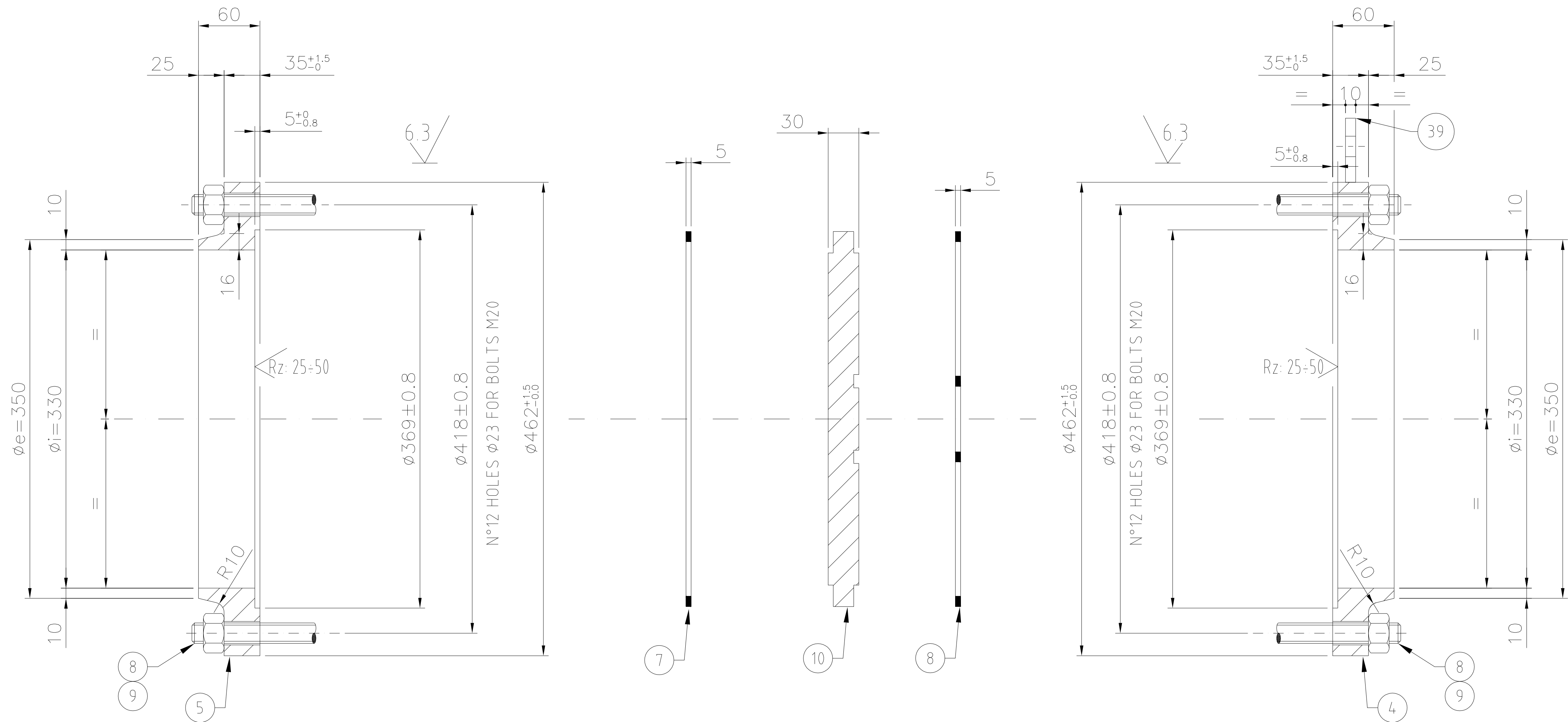
DOCUMENT CODE
SG 8206596

REVISION
4

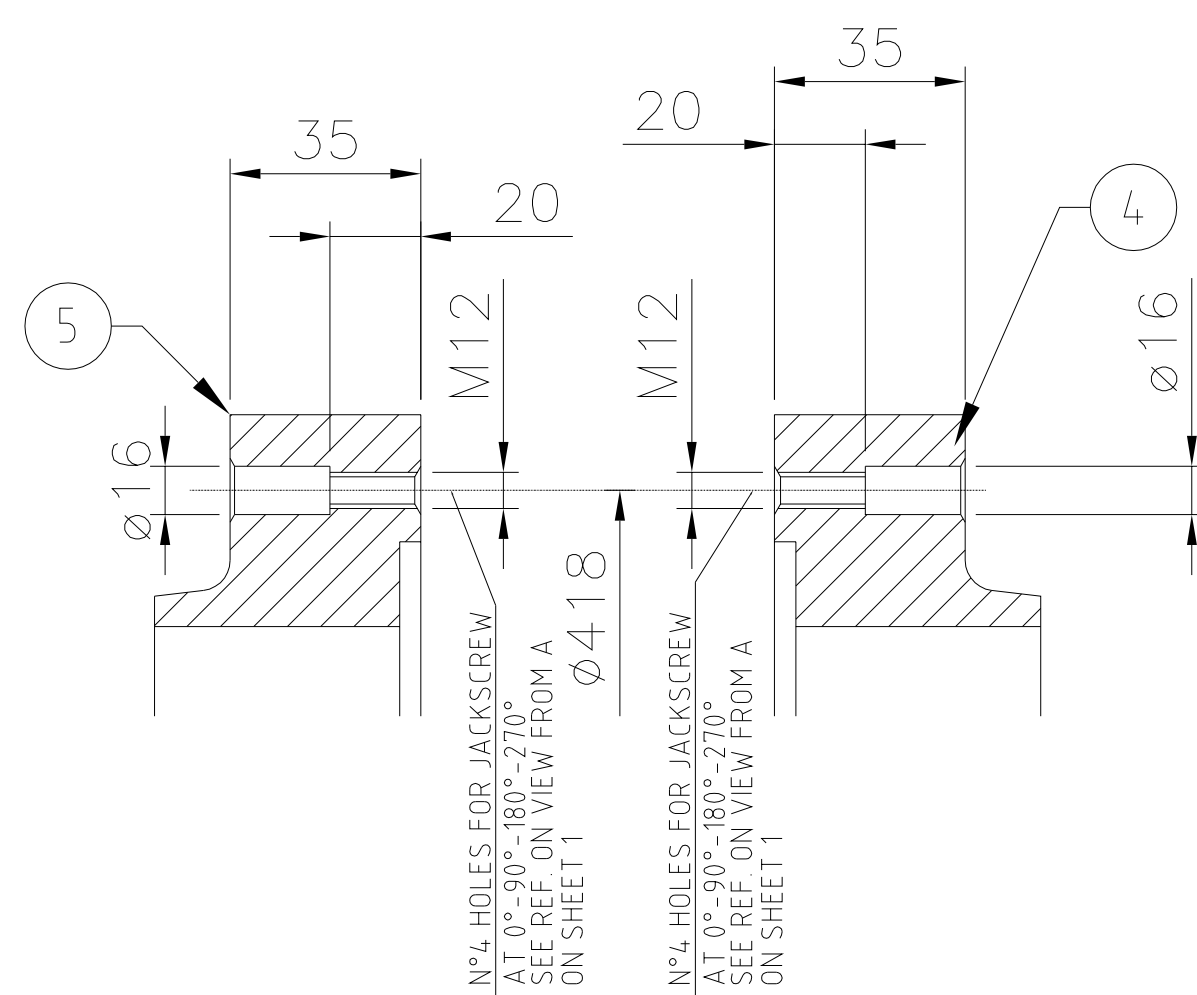
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	ORIGINAL JOB 64.00233	SIZE A
		LANGUAGE N

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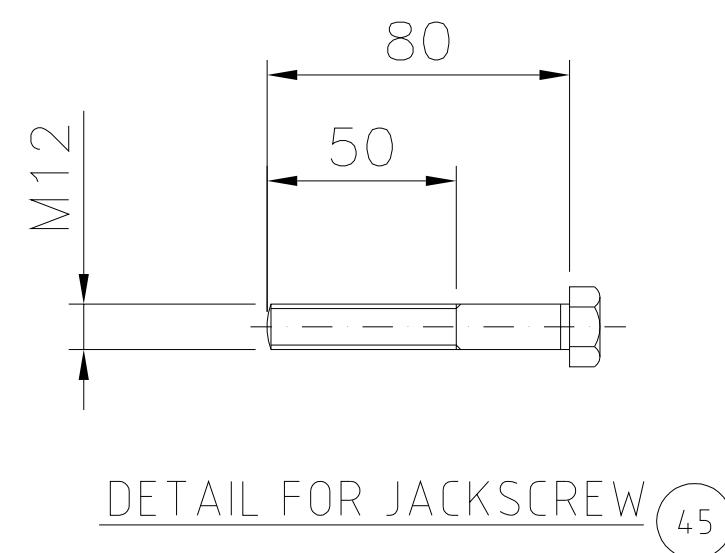
SHEET
6 of 7



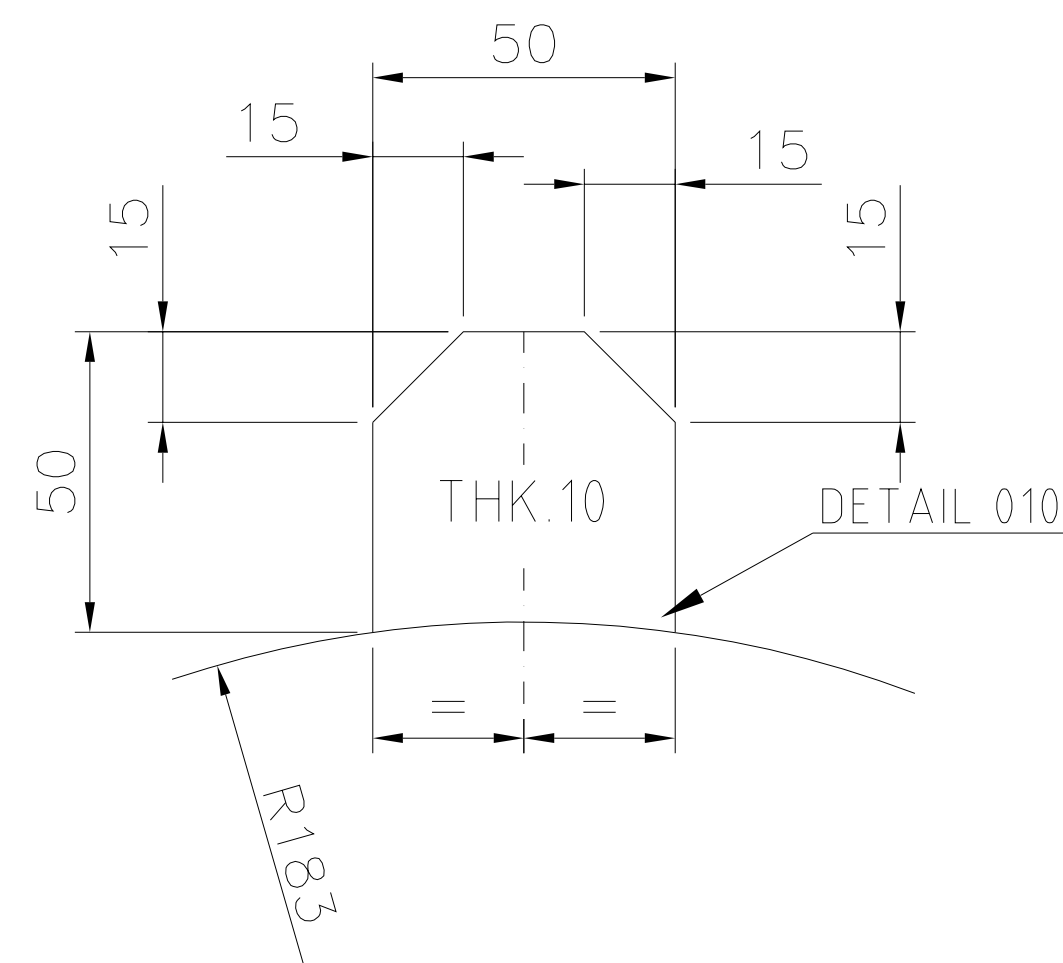
DETAIL FOR FLANGES JOINT



DETAIL FOR JACKSCREW HOLES ON FLANGE



DETAIL FOR JACKSCREW 45



DETAIL FOR PLATE JACKSCREW 44

4	22.11.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	ISSUED AS BUILT
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REPLACES			SUPPLIER/CONTRACTOR IDENT NO.		CLIENT PROJECT DOC. NO. OLP-01011-DP-M-GA912
TITLE AV-444 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING			DOCUMENT CODE SG 8206596		REVISION 4
REVISION DESCRIPTION ISSUED AS BUILT			PAGE MARKER N/A		SECURITY CODE N
ORIGINAL JOB 64.00233			SIZE 1		LANGUAGE A
SHEET 7 of 8			SHEET 7 of 8		

Manufacturer: Nuovo Pignone S.r.l.
() REGENERATION GAS BLOWER AFTERCOOLER

SERIAL No. 71178 ITEM No. AV-444
PURCHASE ORDER No. 275316

ALLOWABLE LIMITS		SHELL TUBE	
Maximum Allowable Pressure:	8	8	bar(g)
Maximum Allowable Temperature:	130	130	°C
Minimum Allowable Temperature:	-36	-36	°C
Design Pressure Min/Max:	-1 / 8	/ 8	bar(g)
Design Temperature:	-36/130	-36/130	°C
Steam/Dry out conditions:	5.8/8 @ 180/80		bar(g)/°C
Hydrotest Pressure Shop/Field:	11.44	11.44	bar(g)
Date of test:			
Volume:	0.210	0.065	m ³
NET WEIGHT		727	Kg
Shell / Head Thickness	10/10	10/10	mm
Corrosion Allowance	3	2	mm
Radiography	100%	100%	
Heat Treatment	YES	NO	
Year of Manufacture			
PED Module	G	PED Category	IV
PED Fluid Group	1	2	

PED NAMEPLATE DETAIL
SCALE 11



SEE ITN0000010/1
- "Version BF" for colors of text, plate and frame of nameplate.

BHGE-LOGO NAMEPLATE DETAIL
SCALE 12

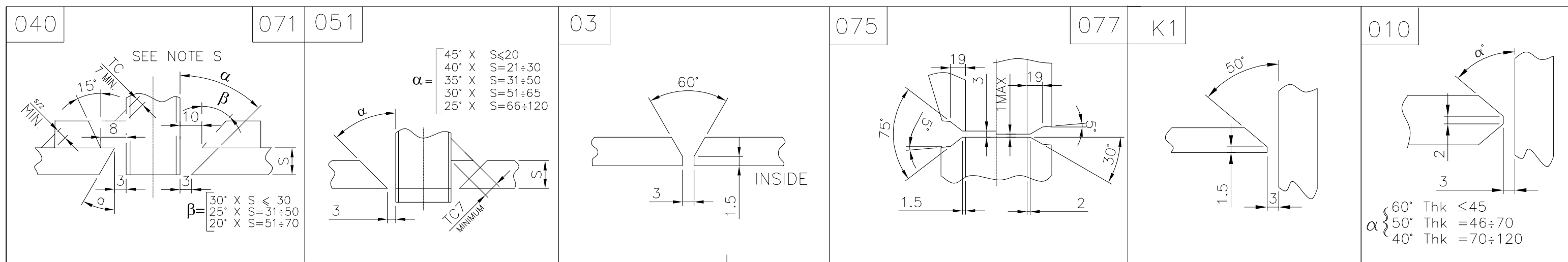
ADDITIONAL NOTES	
M02) HEADS POS 3 SHALL BE COLD FORMED AND NORMALIZED.	
1) M A W P - SHELL SIDE - IS LIMITED BY FLANGE RATING M A W P - TUBE SIDE - IS LIMITED BY FLANGE RATING	
2) MATERIALS SHALL RESPECT THE ADDITIONAL REQUESTS OF PED	
3) THE MANUFACTURER SHALL PROVIDE ALL NECESSARY DOCUMENTATION FOR PED CERTIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING (IF APPLICABLE):	
DOCUMENTS	
PED Category	Quality Control Plan
Pressure vessel general description	Material list
Risk analysis	PMA (Particular Material Appraisal)
Check list ESR (Essential Safety Requirement)	Welding map
Design drawings	Welding specifications (WPS and WPOR)
Nameplate drawing	User manual
Applicable Codes list	Integrity procedure (for modifications only)
Design calculation and assumptions	
4) NOZZLE 10" AND SMALLER SHALL BE SEAMLESS PIPE	
5) REINFORCING AND WEAR PLATE PROVIDED WITH ONE TEST HOLE TAPPED M10. THE WELD OF EACH PAD SHALL BE TESTED AT 0.34 BAR WITH AIR AND SOAP SOLUTION BEFORE POST WELD HEAT TREATMENT AND IN THE PRESENCE OF THE "OL" INSPECTOR AFTER THE TEST, THE HOLE WILL BE FILLED WITH CORROSION INHIBITING GREASE	
6) IF THE PAD IS FABRICATED IN TWO PARTS THE WELD WILL BE ORIENTATED IN CIRCUMFERENTIAL DIRECTION	
7) EACH PLATE OR FORGING SHALL BE LEGIBLY STAMPED OR STENCILED SHOWING GRADE NO. AND PLATE OR FORGING NO. WHEN METAL STAMPING IS DONE IT SHALL BE PREFERABLY BE ON THE LONG EDGE OF EACH COMPONENT AS IT LEAVES THE MILL. METAL STAMPING ON ROLLED SURFACES SHALL BE DONE WITH A "LOW STRESS" STAMP	
8) MATERIAL SUBJECT TO PWHT SHALL BE PURCHASE WITH MILL TEST REPORTS INDICATING HEAT TREATING TIME SUFFICIENT TO ALLOW AT LEAST ONE FULL PWHT CYCLE IN ADDITION TO ALL PLANNED PWHT	
9) ALL WELDS FOR NOZZLE AND MANWAYS ATTACHING TO SHELL AND HEADS WILL BE FULL PENETRATION THROUGH THE VESSEL WALL	
10) A TEMPERATURE OF VESSEL AND TESTING MEDIUM DURING HYDROSTATIC TESTS SHALL BE IN ACC. TO EN3445/PED	
11) THE TEST PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF AT LEAST ONE HALF HOUR PER 25MM OF THICKNESS, BUT NOT LESS THEN ONE HOUR. THE THICKNESS OF THE HEAD OR SHELL, WHICHEVER IS GREATER, SHALL BE USED TO DETERMINE THE LENGTH OF TEST PERIOD	
12) ALL WELDS OF PRESSURIZED PARTS OF VESSEL FOR FLUID GROUP 1 ACC. TO PED SHALL BE TESTED VOLUMETRIC METHODS (RADIOGRAPHIC OR ULTRASONIC TESTING)	
13) THE LEVEL OF WELDING JOINT QUALITY ASSESSMENT SHALL BE NOT LESS THAN B GRADE ACC. TO EN 5817	
14) THE EXTERNAL SURFACE OF THE EQUIPMENT SHALL BE PRIMER PAINTED IN GREY ("RAL7035"). ITEM SURFACE SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH THE PAINT SPECIFICATION AND OL-TR-CR-011 REQUIREMENTS	
15) DURING THE TRANSPORTATION, THE ITEM SHALL BE PROPERLY PROTECTED AGAINST CORROSION IN ACC. WITH OL SPECIFICATION OL-TR-MVR-001	
16) TUBESHEET, FLANGES ARE SUBJECT TO 100% ULTRASONIC EXAMINATION FOR DISCONTINUITY FLAWS	
17) THE REQUIREMENTS OF ISO 15156 APPLY TO VESSELS WHICH INTENDED FOR USE IN H2S CONTAINING ENVIROMENT	
18) STEEL PLATES IN WET H2S SERVICE ARE SUBJECT TO 100% ULTRASONIC TESTING FOR DISCONTINUITY FLAWS AS PER REQUIREMENT OF EN10160 CLASSES S1 & E1	
19) IN WET H2S SERVICE MATERIALS SHALL BE SUPPLIED IN NORMALIZED CONDITION	
20) FOR SOUR OR WET HYDROGEN SULFIDE SERVICE, THE MINIMUM POST WELD HEAT TREATMENT REQUIREMENTS FOR CARBON STEEL CONSTRUCTION SHALL BE IN ACC. TO NACE SP0472. THE MINIMUM HOLD TIME SHALL BE IN ACCORDANCE WITH THE PRESSURE DESIGN CODE, OR 1 HOUR, WHICHEVER IS GREATER	
21) PRESSURE PARTS AND TEST IN ACCORDANCE WITH THE REQUIREMENTS OF NACE MR0175/ISO 15156-2 ANNEX A-2	
22) COMPOSITION RESTRICTIONS FOR MATERIALS ASTM A 350 LF2 Cl.1 (-0.23 % P, 0.035 % S, 0.025 % C)	
23) BHGE DOCUMENTS ARE NOT IN CONFLICT WITH "CLIENT APPLICABLE SPECIFICATIONS"	
24) PAINTING ACCORDING TO SG 0194005 EQUAL TO OL-TR-CR-011 SURFACE PREPARATION SSPC SP-10 25+40 µm PRIMER PAINTING SYSTEM 1B THICKNESS 75-100 µm IN ONE COAT. FINISH N.A. (APPLIED IN FIELD)	



55	LIFTING LUGS ON SHELL	8	PL THK = 10 L = 140 x 65	EN10028-3 P275NH/NL2	
54	INSULATION SUPPORT ON SHELL	8	PL THK = 6 L = 140 x 140	EN10028-3 P275NH/NL2	
53	INSULATION SUPPORT ON SHELL	2	PL THK = 6 L = 180 x 140	EN10028-3 P275NH/NL2	
52	INSULATION SUPPORT ON SHELL	2	PL THK = 6 L = 3100 x 140	EN10028-3 P275NH/NL2	
51	BAFFLE	1	PL THK = 4 L = 350 x 350	EN10028-3 P275NH/NL2	C
50	IMPIGMENT PLATE	1	PL THK = 6 L = 135 x 135	EN10028-3 P275NH/NL2	
49					
48	SEAL STRIPS	2	PL THK = 10 L = 25 x 2264	EN10028-3 P275NH/NL2	C
47	NUTS	8+2	M10 UNI 3740	EN10269 - 42CrMo4	
46	EARTH LUG	2	PL THK = 10 L = 90 x 90	AlSi 304	
45	JACKSCREW	4	M12 L = 80 ITN32211	EN10269 - 42CrMo4	
44	PLATE FOR JACKSCREW	4	PL THK = 10 L = 70 x 70	EN10028-3 P275NH/NL2	C
43	PLUG FOR DUMMY TUBE	4	PL THK = 6 L=20x20	EN10028-3 P275NH/NL2	
42	DUMMY TUBES	4	øe= 20 THK 2.3 Avg thk L = 2264	EN10216-3 P275NL2	C
41	BAFFLE	7	PL THK = 4 L = 250 x 350	EN10028-3 P275NH/NL2	C
40	BAFFLE	6	PL THK = 4 L = 250 x 350	EN10028-3 P275NH/NL2	C
39	LIFTING LUGS FLANGE	1	PL THK = 10 L = 60 x 60	EN10028-3 P275NH/NL2	C
38	REINFORCING PAD LIFTING LUGS	4	PL THK = 10 L = 200 x 200	EN10028-3 P275NH/NL2	C
37	WEAR PLATE	2	PL THK = 12 L = 230 x 1500	EN10028-3 P275NH/NL2	C
36	GUSSET PLATE	2	PL THK = 6 L = 400 x 800	EN10028-3 P275NH/NL2	C
35	BASE PLATE	2	PL THK = 12 L = 220 x 510	EN10028-3 P275NH/NL2	C
34	LIFTING LUGS ON SHELL	4	PL THK = 10 L = 100 x 100	EN10028-3 P275NH/NL2	C
33	RIVETS	4	Ø4 x 20 UNI 136	AlSi 304	
32	PED NAMEPLATE	1	SEE DETAIL	AlSi 304	
31	BHGE LOGO NAMEPLATE	1	SEE DETAIL	ANODIZED ALUMINIUM	
30	NAMEPLATE SUPPORT	1	SEE DETAIL	EN10028-3 P275NH/NL2	C
29	LIFTING LUGS TUBESHEET	2	PL THK = 10 L = 170 x 100	EN10028-3 P275NH/NL2	C
28	PULLING EYE BOLT	4	M8 ITN33105	SEE DETAIL	
27	PLUGS	4	M8 L=13 ITN32500	ASTM A 193 B8	
26	SPACER	21	øe= 15 Ø75 THK 1.65 L = SEE TABLE	EN10028-3 P275NH/NL2	C
25	TIERRODS	5	Ø10 L = 2960	ASTM A 36	C
24	SLIDING STRIPS	2	PL THK = 10 L = 25 x 2940	EN10028-3 P275NH/NL2	C
23	TUBES	31U	øe= 20 THK 2.3 Avg thk L = SEE TABLE	EN10216-3 P275NL2	C
22	LIFTING LUGS CHANNEL	1	PL THK = 10 L = 130 x 60	EN10028-3 P275NH/NL2	C
21	FLANGE N3-N4	2	Ø= 2" LWN 150# RF-R9 L=245	ASTM A 350 LF2 Cl.1	C

REV.	POS	DENOMINATION	No	DIMENSIONS	MATERIAL
C= MATERIALS CERTIFICATE ACC. TO EN 10204 ed 2004 - 3.1 (EQUIVALENT TO EN 10204 ed 1991 - 3.1B)					
LIST OF RAW MATERIALS					
15	REINFORCING PAD N1-N2	2	PL THK = 10 L = 300 x 300	EN10028-3 P275NH/NL2	C
14	NOZZLE N1-N2	2	Ø= 6" SCH80-XS L= 190	EN10216-3 P275NL2	C
13	FLANGE N1-N2	2	Ø= 6" WN 150# RF-R9 SCH80-XS	ASTM A 350 LF2 Cl.1	C
12	PASS PARTITION	2	PL THK = 10 L = 160 x 500	EN10028-3 P275NH/NL2	
11	PASS PARTITION	1	PL THK = 10 L = 350 x 500	EN10028-3 P275NH/NL2	C
10	TUBE SHEET	1	øe= 366 THK = 30	EN10222-4 P285OH	C
9	NUTS	24+4	M20 m=d ITN34050/9	EN10222-4 42CrMo4	C
8	BOLTS	12+2	M20 L=150 ITN33202-TYPE A	EN10269 - 42CrMo4	C
7	GASKET FRONT SHELL	1+2	øe=366 / øi=346 THK 5	SS 316L + GRAPHITE	
6	GASKET FRONT CHANNEL	1+2	øe=366 / øi=346 THK 5	SS 316L + GRAPHITE	
5	FRONT SHELL FLANGE	1	øe= 462/ øi= 330 h= 60	EN10222-4 P285OH	C
4	FRONT CHANNEL FLANGE	1	øe= 462/ øi= 330 h= 60	EN10222-4 P285OH	C
3	ELL HEAD Øi= 330 x 10	2	PL THK = 12 L = 520 x 520	EN10028-3 P275NH/NL2	C
2	SHELL	1	PL THK = 10 L = 1100 x 3260	EN10028-3 P275NH/NL2	C
1	FRONT CHANNEL	1	PL THK = 10 L = 1100 x 300	EN10028-3 P275NH/NL2	C

LIFTING SKETCH

NAMEPLATE SUPPORT DETAIL
SCALE 13



4	22.11.2018	P.E.S.	A. SCHIAVELLO	G. ARENA	NO REVISION INTRODUCED IN THIS SHEET
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PROPRIETARY AND CONFIDENTIAL					
<div> Lietuva</div>					
PROJECT NAME Propane Propylene Fraction (PPF) Splitter			SUBSUPPLIER INFORMATION		CLIENT PROJECT NO. OLP01011
CLIENT NAME ORLEN Lietuva		LOCATION Juodeikiai, Lithuania	GE INTERNAL PROJECT NO. ICP-000037		
REPLACES			SUPPLIER/CONTRACTOR IDENT NO.	CLIENT PROJECT DOC NO. OLP-01011-DP-M-GA912	
<div> ORLEN a GE company</div>		TITLE AV-444 REGENERATION GAS BLOWER AFTERCOOLER CONSTRUCTION DRAWING		DOCUMENT CODE SG 8206596	REVISION 4
REVISION DESCRIPTION NO REVISION INTRODUCED IN THIS SHEET				PAGE MARKER N/A	SECURITY CODE N
				ORIGINAL JOB 64.00233	SIZE 1
					LANGUAGE A
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					SHEET 8 of 8