

THICKNESS SHOWN IN THE DRAWING ARE PROPOSED VALUE.
VENDOR SHALL CHECK AND GUARANTEE THEM ON SAFETY.

DESIGN DATA					
CODE & STD		ASME SEC. VIII.1 2023 ED.			
ASME U-STAMP	NO	SPECIAL SERVICES		☐ H2 SERVICE	
OPER. PRESSURE MPa(g)	0.3			☐ WET H2S SERVICE	
DESIGN PRESSURE MPa(g)	0.5			☐ AMMONIA SERVICE	
OPER. TEMP. °C	40	NDE	WELDING JOINT CATEGORY		INSPECTION METHOD/RATIO
DESIGN TEMP. °C	85		A		RT-SPOT
MDMT °C	0		B		RT-SPOT
MAWP MPa(g)	1.39@85℃(BY FLANGE)		SHELL/HEAD/NOZZLE(DN>250)		RT-SPOT
MEDIUM	MAGMA		NOZZLE DN<=250		PT
MEDIUM DENSITY kg/m³	1203		C		PT
LETHAL SERVICE	☐ YES ☒ NO	PRESSURE TEST	D/E		PT
CORROSION ALLOWANCE mm	0		HYDRO. TEST PRESSURE MPa(g)		VERTICAL 1.807
JOINT EFFICIENCY	0.85		PNEUMATIC TEST PRESSURE MPa(g)		HORIZONTAL 1.807
WIND LOAD	NOTE 1	LEAKAGE TEST	AIR-TIGHT TEST PRESSURE MPa		—
SEISMIC LOAD	NOTE 2		HELIUM LEAK TEST PRESSURE MPa		—
TOTAL VOLUME	0.1		OTHER LEAK TEST MEDIUM/PRESSURE MPa		—
FILLING COEFFICIENT	—	FABRICATION WEIGHT kg		120	
INSULATION MATERIAL	—	INSTALL WEIGHT kg		—	
INSULATION THK. mm	—	OPERATING WEIGHT kg		—	
FIRE PROOFING THK. mm	—	WEIGHT OF FULL WATER kg		220	
REQ. FOR PWHT	—	DESIGN SERVICE LIFE YEAR		20	

SPECIFICATION

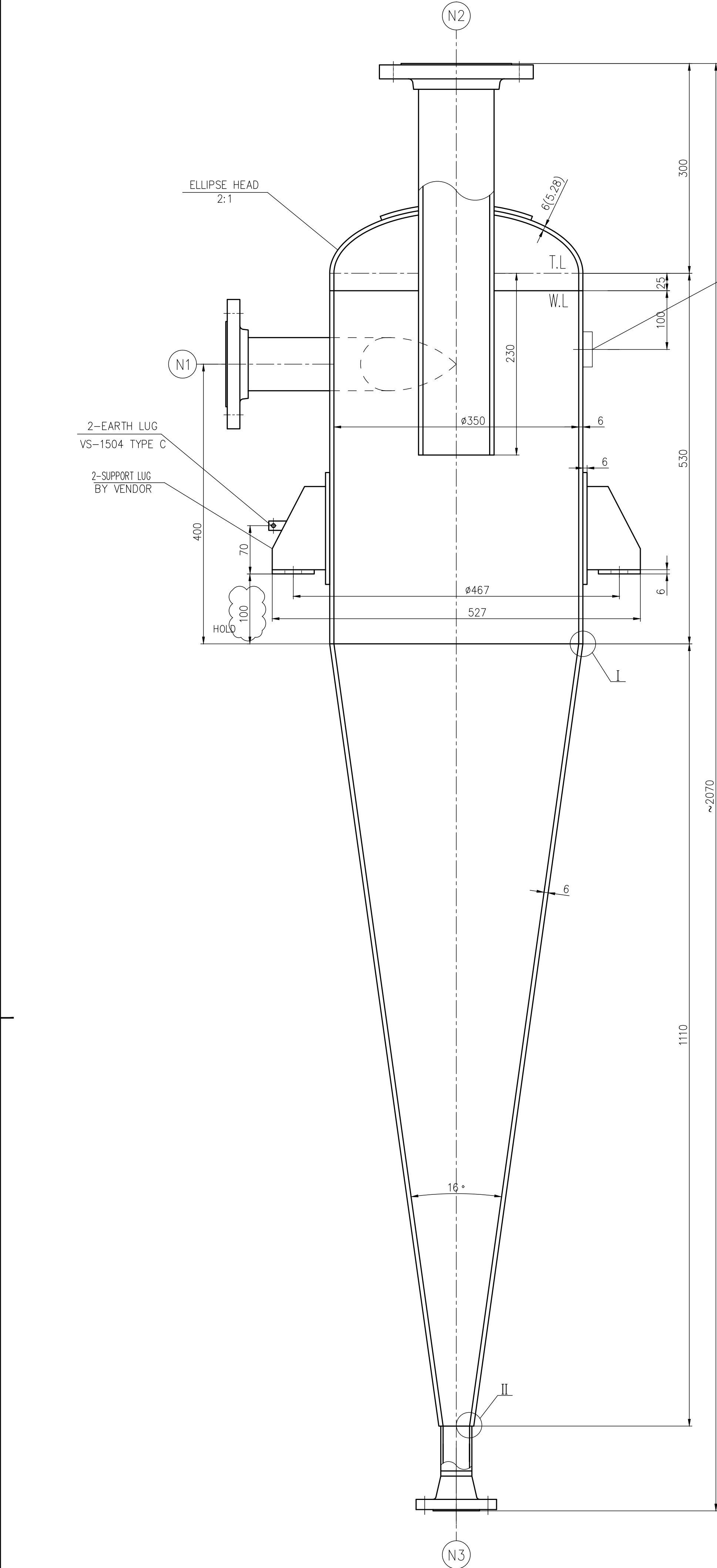
- SAPKT-EQ-SPE-0004 Rev.0 <SPECIFICATION FOR PRESSURE VESSEL>
- SAPKT-QC-BED-0002 Rev.0 <SPECIFICATION FOR GENERAL WELDING AND NDE REQUIREMENT FOR PRESSURIZED EQUIPMENT>.
- APPENDIX 10.1.8 <SPECIFICATION FOR VESSELS, TANKS AND TOWERS>.
- SAPKT-EQ-SPE-0045 Rev.0 <ENGINEERING SPECIFICATION OF MECHANICAL EQUIPMENT>
- SAPKT-EM-SPE-0050 Rev.0 <Engineering Specification of Mechanical Equipment>
- T24B25-064-MC07-01<SPECIFICATION FOR PAINTING>.

NOZZLE LIST

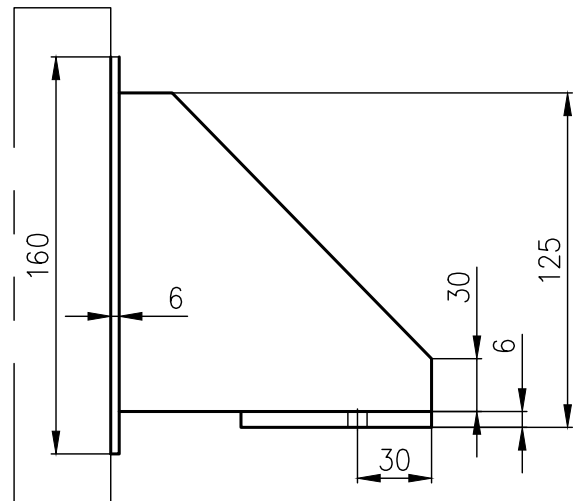
MARK	SIZE NPS	SCH. OR THK.	CLASS	FLANGE STD	TYPE	FACE TYPE	SERVICE	NOZ. PROJ. FROM C.L	REMARK
N1	2.5"	Sch80S	150#	ASME B16.5-2020	SO	RF	MAGMA INLET	SEE DWG.	
N2	4"	Sch80S	150#	ASME B16.5-2020	SO	RF	OVERFLOW NOZZLE	SEE DWG.	WITH INNER TUBE
N3	1.5"	Sch80S	150#	ASME B16.5-2020	WN	RF	UNDERFLOW NOZZLE	SEE DWG.	

TECHNICAL REQUIREMENTS

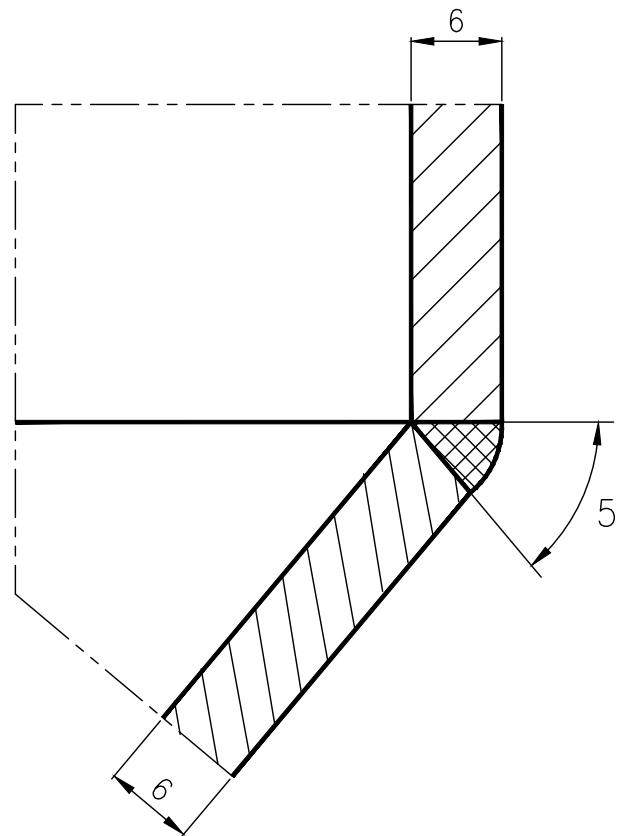
- THE BOLT SIZE ARE 1-1/8" AND OVER, THREADS PER INCH 8UN SHALL BE USED, THE BOLT SIZE ARE 1" AND LESS,THREADS PER INCH UNC SHALL BE USED.
 - UNLESS OTHER CASE, NOZZLE REINFORCEMENT PAD SHALL BE CONSIDERED.
 - UNLESS OTHERWISE SPECIFIED, THE NOZZLE GASKET SURFACE SHALL BE FLAT SMOOTH SURFACE AND SERRATION SPECIFIED IN ASME STANDARD IS NOT TO PROVIDE.
 - ANY GASKETS WHICH CONTAIN ASBESTOS SHALL NOT BE USED.
 - THE OPENING REINFORCEMENT SHALL BE SO DESIGNED AS NOT TO LIMIT THE MAXIMUM ALLOWABLE WORKING PRESSURE OF THE VESSEL.
 - A FORMED HEAD SHALL GENERALLY BE MADE OF SINGLE PLATE. IN CASE THAT MULTIPLE PLATES ARE WELDED TOGETHER FOR LARGE FORMED HEAD, THE WELDING JOINTS SHALL BE EXAMINED BY 100% FULL RT BEFORE AND AFTER FORMING.
 - THE HARDNESS TESTING OF THE PLATE AND WELD SEAM SHALL COMPLY WITH THE REQUIREMENTS OF B.3 IN SAPKT-EQ-SPE-0004 REV.0 SPECIFICATION FOR PRESSURE VESSEL.
 - DURING HYDROSTATIC TEST, THE CHLORIDE ION CONTENT IN THE WATER SHALL BE STRICTLY CONTROLLED TO NOT EXCEED 25mg/L. AFTER THE TEST IS COMPLETED, THE WATER STAINS SHALL BE IMMEDIATELY REMOVED.
 - AFTER THE HYDROSTATIC TEST AND AIR TIGHTNESS TEST HAVE BEEN SUCCESSFULLY PASSED, THE INNER SURFACE OF THE STAINLESS STEEL SHALL UNDERGO ACID PICKLING AND PASSIVATION TREATMENT. THE PASSIVATION FILM FORMED SHALL BE INSPECTED USING THE BLUE DOT METHOD, AND THE ABSENCE OF BLUE DOTS SHALL BE DEEMED AS ACCEPTABLE.
 - ALL SURFACES OF STAINLESS STEEL (INCLUDING PLATES, PIPES, AND FORGINGS) IN CONTACT WITH THE MEDIUM, AS WELL AS SURFACES OF WELDING PROCESS QUALIFICATION TEST SPECIMENS (INCLUDING SIMULATED PWHT), SHALL UNDERGO INTERGRANULAR CORROSION SENSITIVITY TESTING IN ACCORDANCE WITH THE PROVISIONS OF ASTM A262. THE TEST METHOD SHALL BE E METHOD: COPPER-COPPER SULFATE-16% SULFURIC ACID METHOD, AND THE BENDING METHOD SUPPLEMENTED BY METALLOGRAPHIC METHOD SHALL BE USED TO DETERMINE WHETHER THERE ARE INTERGRANULAR CORROSION CRACKS ON THE OUTER SIDE OF THE BENT SPECIMEN AS A QUALIFIED INDICATOR.
 - FOR STAINLESS STEEL HEADS AFTER COLD FORMING,THEFERRITE CONTENT MEASURED IN ACCORDANCE WITH ISO 8249 SHALL NOT EXCEED 15%.IF EXCEEDED, RECOVERY HEAT TREATMENT SHALL BE PERFORMED TO RESTORE MATERIAL PROPERTIES.
 - FOR COLD-FORMED STAINLESS STEEL HEADS SUBJECTED TO STRESS CORROSION OR INTERGRANULAR CORROSION,SOLUTION HEAT TREATMENT SHALL BE SPECIFIED.
 - THE FACE OF THE SLIP-ON FLANGES SHALL BE WELDED TO THE NECK WITH A "J" PREPARATION GROOVE WELD. THE DEPTH OF THE GROOVE SHALL NOT BE LESS THAN THICKNESS OF THE NOZZLE NECK TO WHICH THE FLANGE IS ATTACHED.
- NOTE:
- WIND CONDITION:ASCE 7-2016(EXPOSURE CATEGORY:C,RISK CATEGORY:III), DESIGN WIND SPEED:120Km/Hr;
 - SEISMIC CONDITION:ASCE 7-2016(CLASS E,IMPORTANT FACTOR 1.25,SS=0.198g,S1=0.1323g)
 - MEDIA COMPOSITION : TOTAL SOLIDS: 0~14%,
THE LIQUID IS THE MOTHER LIQUOR I:NH3:2.3%, NH4CL:18.2%, NaCL:9.17%, CO2:3.12%, H2O:67.1%.
 - THE SUPPORT LUG IS ALSO USED AS A LIFTING LUG.



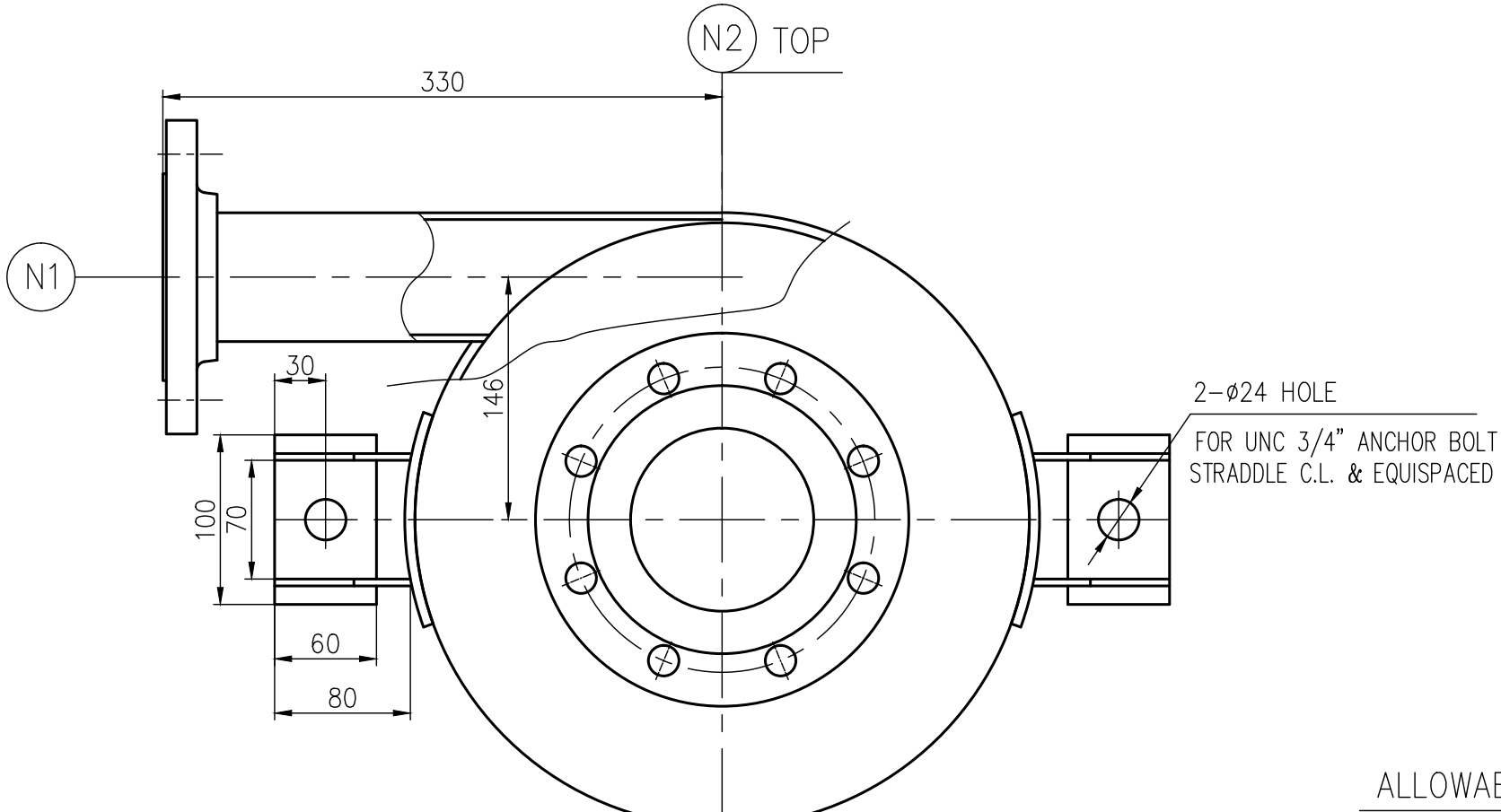
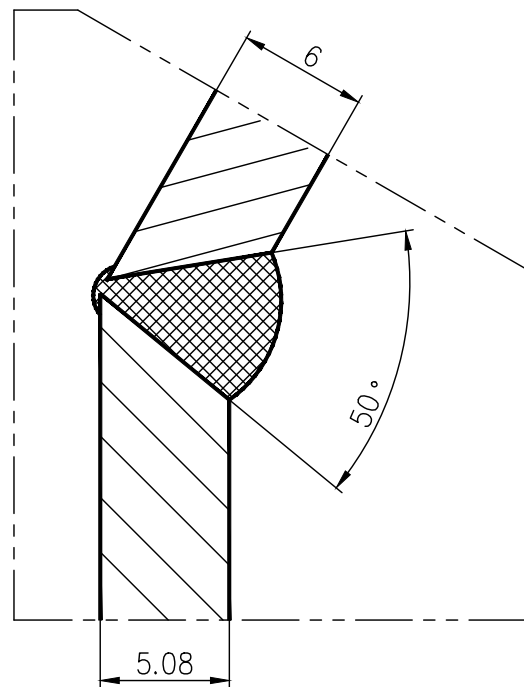
SUPPORT LUG
NO SCALE



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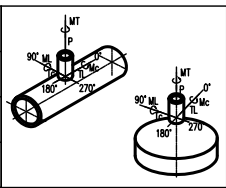


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ALLOWABLE LOAD OF NOZZLES

NOZZLE	FORCE (N)			FORCE MOMENT (N.m)		
	FR	FL	FC	MT	ML	MC
N1	1200	1200	900	180	156	120
N2	3600	3600	2700	1080	936	720



MATERIAL LIST					
SHELL/HEAD/CONE		SA-240 TYPE316L	SUPPORT LUG/PAD		SA-240 TYPE304/SA-240 TYPE316L
NOZZLE FLANGE		SA-182 Gr.F316L	NAMEPLATE/BACKET		SA-240 TYPE304/SA-240 TYPE316L
NOZZLE NECK	PIPE	SA-312 TP316L	ANCHOR BOLTS		SA-307 Gr.B/SA563 Gr.A
	FORGED	—	EARTH LUG		SA-240 TYPE304
		PLATE	—		
REV.	DESCRIPTION	DATE	DESIGN	DRAW	CHECK
RO1	IFD	04-06-2025	XLC		LQ
					WT
					REVIEW
					APPROVE
THIS DOCUMENT IS THE PROPERTY OF TCC. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED OR DISCLOSED TO OTHERS OR USED FOR ANY PURPOSE WHATSOEVER EXCEPT WITH THE PRIOR WRITTEN PERMISSION OF TCC.					
TCC 中国天辰工程有限公司 CHINA TIANCHEN ENGINEERING CORPORATION			PROJECT	PKT 300KTA Soda Ash Project	
512-V-11 Hydrocyclone Engineering Drawing			UNIT	Filtration Section	
			PHASE	Detail Design	
SCALE		SHEET 1	TOT. 1	DWG NO.	T24B25-512-FE8D-1100