



NOTES

- UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETERS.
- UNLESS OTHERWISE NOTED OUTSIDE PROJECTION OF NOZZLES ARE MEASURED FROM C.L. OF EXCHANGER TO THE EXTREME FACE OF NOZZLE
- ALL WELDS CONTINUOUS EXCEPT NOTED
- BOLT HOLES FOR FLANGES SHALL BE STRADDLED TO EQUIPMENT MAIN AXIS
- ALL R.F. FLANGES SHALL HAVE SMOOTH FINISH FACING WITH RA= 3.2mm TO RA= 6.3mm
- BASE LINE (B.L.) INDICATES THE GASKET CONTACT SURFACE OF TUBE SHEET
- REINFORCING PADS FOR NOZZLES SHALL BE TAPPED WITH AT LEAST ONE (1) TELL TALE HOLE NPT 1/4" WITH VENT PIPE.

1-#3 VENT HOLE
1-NPT 1/4" TELLTALE HOLE W/VENT PIPE
LOWER AXIS

- DIMENSIONS REFER TO BAFFLES ARE MEASURED FROM C.L. OF EACH PLATE
- GASKET MATERIAL FOR ASME B16.20. SPIRAL WOUND (t4.5)
 - FILLER: GRAPHITE
 - INNER RING: 304 S.S.
 - HOOP: 304 S.S.
 - OUTER RING: 304 S.S.
- GASKET MATERIAL: SPIRAL WOUND (t4.5)
 - FILLER: GRAPHITE
 - INNER RING: 304 S.S.
 - HOOP: 304 S.S.
- SPARE PART (OPTIONAL)

	CONSTRUCTION & COMMISSIONING
GASKETS	100%
STUD BOLTS & NUTS	5% (MIN. 2SETS)

- ALL EXPOSED SURFACE SHALL BE PAINTED AS FOLLOWS: EXPOSED SURFACE FOR EXTERNAL PARTS: E1027-HSE-VD-QC-PRO-002
- EXPOSED SURFACE OF INTERNAL: NOT PARTS REQUIRED
- 1/1.4 FACTOR FOR LOAD COMBINATION HAS BEEN APPLIED
- TUBES SHALL BE SEAMLESS
- GASKET CONTACT SURFACE OF TUBE SHEET & GIRTH FLANGE: RA= 1.6µm (MAX)
- FURTHER DETAILS TO BE ADDED FOR DISCLAIMER PURPOSES SUCH AS AFTER HYDROTEST TO BE CLEANED AND DRIED.

REFERENCE DRAWING	DWG NO.	REV.
-	-	-

KEY PLAN :

TABLE FOR FOUNDATION LOAD DATA				MATERIALS				DESIGN DATA				NOZZLE LIST												
WIND		SEISMIC (NOTE 13)		SHELL		GENERAL		CODE		ASME SEC. VIII DIV.1 (2021 ED.)		TYPE	H-BKU	NOZZLE MARK	Q'TY /1 SET	SIZE (INCH)	FLANGE		SCH.	SERVICE		H/EX. C.I. PROJECTION	REINF. TH'K	PAD O.D.
SHEAR (kgf)	MOMENT (kgf-m)	SHEAR (kgf)	MOMENT (kgf-m)	BARREL	SA516-70N	SLIDING BAR/ROD	SA516 70/SA36	TEMA CLASS	TEMA 10TH ED. (CLASS "R")	CODE STAMP	NO		S1	1	4"	RATING	ASME B16.5 300# WNLRF			120	SHELL SIDE INLET	SEE DWG.	12	220
478	430	970	873	FLANGES	-	SEALING STRIP	SA516 70	LOCAL REGULATION	NO	WIND / SEISMIC CODE	UBC 97		S2	1	6"	ASME B16.5 300# WNLRF	80	SHELL SIDE OUTLET	675	12	300			
LEGEND B.L. = BASE LINE C.L. = CENTER LINE M.D.M.T. = MIN. DESIGN METAL TEMPERATURE N. = NORMALIZED O.T.L. = OUTER TUBE LINE C.O.G. = CENTER OF GRAVITY T.O.G. = TOP OF GROUTING W.P. = WORKING POINT				NOZZLE FROM PIPE	SA333-6	DUMMY TUBE/SEAL ROD	-	FLUID	PROPANE	STYRENE	WIND EXPOSURE / VELOCITY (km/h)		TI	1	3"	ASME B16.5 150# WNLRF	80	CHANNEL SIDE INLET	SEE DWG.	10	190			
				NOZZLE FROM PLATE	SA516-70N	BLUNDED NOZZLE BOLT/NUT	SA320 L7/SA194-4	DESIGN (INT.EXT.)	PRESS. barg	22/F.V.	6.8	Ca/Cv/Nv	0.4/0.56/1		T2	1	3"	ASME B16.5 300# WNLRF	160	CHANNEL SIDE OUTLET	SEE DWG.	10	190	
				NOZZLE FLANGES	SA350-LF2 CL.1N	BLUNDED NOZZLE GASKET	SEE NOTE "9"	TEMP. (°C)	120/85	85	SEISMIC IMPORTANCE FACTOR/RESPONSE FACTOR	1.25 / 3		D	1	2"	ASME B16.5 300# WNLRF	160	SHELL SIDE DRAIN	SEE DWG.	-	-		
				COUPLINGS & PLUGS	-	TEST RING	SA-266 2	STEAM OUT CONDITION	-	-	INSULATION (TYPE/THK.)	COLD/60 COLD/60		LG1	1	2"	ASME B16.5 300# WNLRF	160	LEVEL GAUGE	SEE DWG.	-	-		
				NOZZLE REINF. PAD	SA516-70N	GASKETS		OPER. PRESS. barg	3.813	4.5	FIRE PROOFING (mm)	-		LG2	1	2"	ASME B16.5 300# WNLRF	160	LEVEL GAUGE	SEE DWG.	-	-		
				EXCHANGERS SUPPORTS	SA283-C	SHELL/COVER	-	(IN/OUT) TEMP. (°C)	1.24/1	15.2/5	PAINTING	SEE NOTE "12"		PSV	1	3"	ASME B16.5 300# WNLRF	160	PRESSURE SAFETY VALVE <td>675</td> <td>12</td> <td>190</td>	675	12	190		
				SUPPORT WEAR PLATE	SA516-70N	SHELL/TUBESHEET	SEE NOTE "10"	CORROSION ALLOWANCE (mm)	3	3	TUBE TO TUBESHEET JOINT	NEW EXPOSED WITH 2 GRINDS WITH SEAL WELD		V	1	2"	ASME B16.5 300# WNLRF	116.8	VENT <td>675</td> <td>-</td> <td>-</td>	675	-	-		
				STIFFENING RINGS	SA516-70N	CHANNEL/TUBESHEET	SEE NOTE "10"	JOINT EFFICIENCY (S/H)	1.0/1.0	1.0/1.0	NO. OF PASS	1(ONE) 4(FOUR)		S3	1	2"	ASME B16.5 300# WNLRF	160	SHELL SPARE/PURGE	SEE DWG.	-	-		
				EXPANSION JOINT	-	CHANNEL/COVER	-	RADIOGRAPHY (S/H)	FULL/FULL	FULL/FULL	BUNDLE (KG)	840												
				LINING	-	FLOATING HEAD	-	HYDRO. TEST PRESS. (SHOP/FIELD) barg	28.6/28.6	8.84/8.84	ERECTION (KG)	2,850												
				SHELL COVER		FLOATING HEAD		HYDRO. TEST TYPE	U-900) NOTE (25)	U-900) NOTE (25)	WEIGHT	EMPTY (KG)	2,850											
				BARREL	-	COVER	-	PNEUM. TEST PRESS. barg	-	-	OPER. (KG)	4,250												
				COVER	-	FLANGES	-	M.D.M.T. (°C)	-45	-29	FULL WATER (KG)	4,900												
				FLANGES	-	SPLIT RING	-	M.A.P (HOT & CORRODED) barg		22	6.8	SURFACE AREA/SHELL (M²)	61.76											
				CHANNEL		BOLTS & NUTS		M.A.P (NEW & COLD) barg		22	6.8	VOLUME (M³)	1.65	0.38										
				BARREL	SA516-70N	SHELL/COVER	-	P.W.H.T	NO	NO	FLUID DENSITY (kg/m³)	532.9	918.4											
				FLANGES	SA266-2N	SHELL/CHANNEL	SA320-L7/SA194-4	IMPACT TEST	NO	NO	MEAN METAL TEMP. (°C)	-	-											
				COVER	SA516-70N	CHANNEL/COVER	-	S.R OF HEAD AFTER COLD FORMING	YES	YES	SHELL SIDE TUBE SIDE													
				FLAT COVER	-	FLOATING HEAD	-																	
				NOZZLE FROM PIPE	SA106-B	SETTING BOLTS/NUTS	SA193 B7 / SA194 2H																	
				NOZZLE REINF.	SA516-70N	TUBE BUNDLE																		
				NOZZLE FLANGES	SA105N	TUBES	SA334-6																	
				COUPLINGS & PLUGS	-	TUBESHEETS	SA350-LF2 CL1N																	
				NOZZLE REINF. PAD	SA516-70N	BAFFLES/SUPPORTS/IMP. PLATE	SA516-70																	
				PARTITION PLATES	SA516-70N	TIE RODS & SPACERS	SA36/SA179																	

00	05.20.2024	ISSUED FOR APPROVAL (IFA)	SH.Azogh	S.Behnafar	R.Memari
REV.	ISSUE DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

CLIENT

CONSULTING ENGINEER

PROJECT: **STYRENE PARK OFFSITE**

DRAWING TITLE: **GENERAL ARRANGEMENT DRAWING FOR CHILLER (EVAPORATOR)**

DRAWING NO.	REV.	SIZE	SCALE	SHEET
E1027-HSE-VD-ME-DWG-008	00	A3	NTC	1 of 1