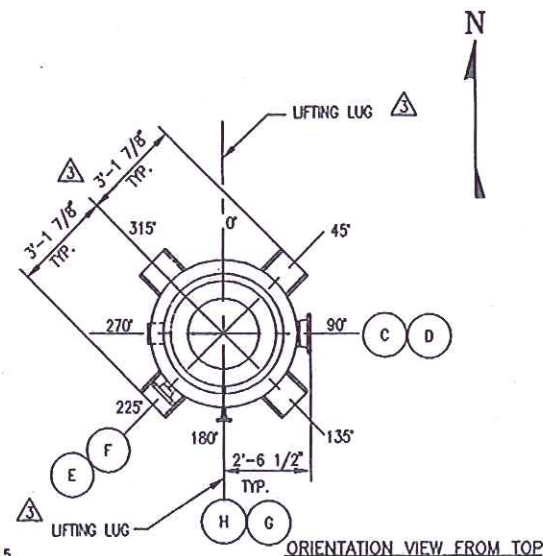
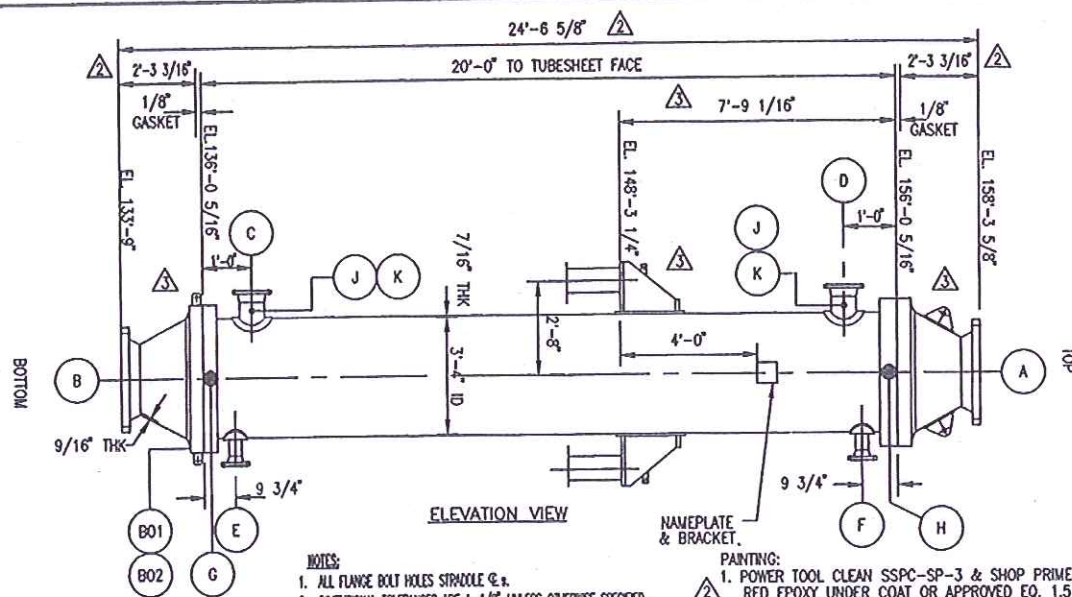


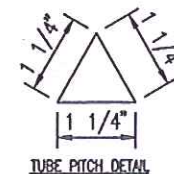
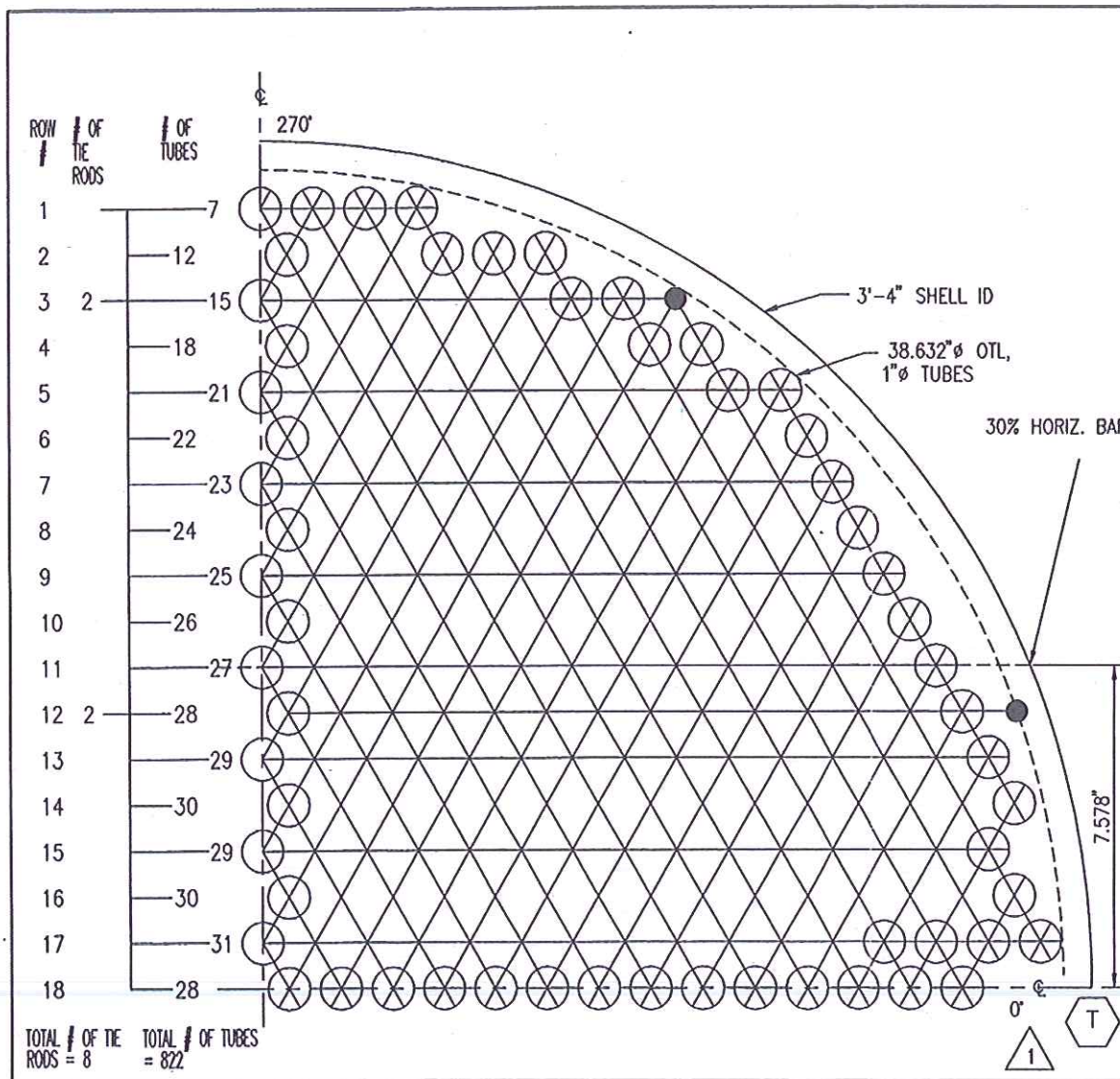
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- NOTES:**
1. ALL FLANGE BOLT HOLES STRADDLE C.E.
 2. DIMENSIONAL TOLERANCES ARE $\pm 1/8$ UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS ARE IN INCHES.
- PAINTING:**
1. POWER TOOL CLEAN SSPC-SP-3 & SHOP PRIME RED EPOXY UNDER COAT OR APPROVED EQ. 1.5 TO 2.5 MILS. OFF ON ALL OUTSIDE CARBON STEEL PARTS.

DESIGN CONDITIONS			MATERIAL SPECIFICATIONS			NOZZLES & CONNECTIONS				NATIONAL BOARD
	SHELL SIDE	TUBE SIDE	Mark	SHELL SIDE	TUBE SIDE	Mark	SIZE	FLG. NECK	SERVICE	SERIAL NO.: 22
DESIGN PRESS.(PSIG)	210	313	CYLINDERS	SA 516-70	SA-240-304	A	24"-300	RF NN SCH. 30	INLET-T/S	TUBERATE SERIAL NO. 5459
HYDRO TEST PRESS.(PSIG)	315	470				B	24"-300	RF NN SCH. 30	OUTLET-T/S	Engineer's Stamp
DESIGN TEMP.(F)	365	212	GIRTH FLGS	-	SA-182-F304	C	8"-00	RF NN X-STG	INLET-S/S	
MDMT (F@PSIG)	-20 @ 210	-20 @ 313	NOZZ. FLGS	SA-105	SA-182-F304	D	8"-00	RF NN X-STG	OUTLET-S/S	
PASSES PER SHELL	1	1	NOZZ. NECKS	SA-106B	SA-312-TP304	E	4"-00	RF NN SCH. 120	CHEM. CLEAN	
CORROSION ALLOW.	1/8"	0"	REPADS	SA-516-70	-	F	4"-00	RF NN SCH. 120	CHEM. CLEAN	
RADIOGRAPHY (SPOT)	SPOT	SPOT	COUPLINGS	SA-105	SA-182-F304	H	1"-00	RF NN XX-STG	DRAIN-S/S	
STRESS RELIEF	NO	NO	SUPPTS/LUGS	SA-516-70/SA-36	N/A	J	3/4"-800	CPLG	TEMP. CONN.	
EFFICIENCY	85%	85%	STUDS	SA-193-B7	SA-193-B7	K	3/4"-800	CPLG	PRESS. CONN.	
MEDIUM	COOLING WATER	HYDROCARBON	NUTS	SA-194-2H	SA-194-2H					
INSULATION	-	-	GASKETS	C.S. DJ	304 S.S. DJ					
MAG. PART. INSP.	-	-	TUBES	SA-249-TP304						
IMPACT TESTING	Exempt per UG-20(f), UHA-51(d)		TUBESHEET	SA-240-TP304						
Code: ASME SECT. VIII DIV. 1 1995 EDITION AND DEC 31/1995 ADDENDA			BAFFLES	SA-36		NOTE: NOZZLES E, F, G & H PROVIDED WITH GASKETS BLIND FLANGES & BOLTING. ALL OTHER EXPOSED FLANGE FACES TO BE PROTECTED DURING SHIPMENT WITH BOLTED ON WOOD BLIND FLANGES.				NO. OF SHELLS: 1
TEMA Class: C			TIE RODS	SA-36						WEIGHTS (EACH)
SIZE: 40-240	TYPE: BEM	POS: VERT.	SPACERS	SA-214						BUNDLE: 16000 LBS.
SURFACE/SHELL:	4206 SQ. FT.		IMP. PLT.	SA-516-70						SHIPPING: 25000 LBS.
										FLOODED: 30000 LBS.

4	6/2/97	D.R.	CERTIFIED "AS BUILT"		
3	4/3/97	C.Z.	ADDED LIFTING LUG & REVISED SUPPORT LUG ELEVATION.		
2	3/5/97	C.Z.	REVISED OVERALL LENGTH & PAINT SPEC. OVERALL LENGTH WAS 24'-7 5/8"	HRK	HRK
1	2/10/97	C.Z.	REVISED NOZZLE ORIENTATION	HRK	HRK
REV.	DATE	BY	DESCRIPTION	CHK'D	APP'D
TUBERATE Ltd. Sarnia, Ontario CANADA				Dwn. By D.R.	
For HUNTSMAN CORPORATION MARYSVILLE, MICHIGAN				Chk'd By HRK	
Title GENERAL ARRANGEMENT FOURTH REACTOR CIRC. GAS COOLER ITEM # E-204A				App'd By	
				Date	96/11/29
				Scale	1:40
Customer PO No.		Customer Dwg. No.			
961974		-			
Job No.		TUBERATE Dwg. No.		Rev.	
5459A		5459-B1		4	



NOTES

1. (T) DENOTES MATCHMARK FOR ASSEMBLY.
2. FOR TUBE BUNDLE ASSEMBLY & DETAILS SEE DWG. 5459-B7.
3. FOR TUBESHEET DETAIL SEE DWG. 5459-B5.
4. LAYOUT IS SYMMETRICAL ABOUT BOTH ϕ .

2	D.R.	6/2/97	CERTIFIED "AS BUILT"		
1	C.Z.	3/7/97	REVISED TUBE LAYOUT ORIENTATION		
Rev.	By	Date	Description	Chk'd	App'd
TUBE RATE Ltd. Sarnia, Ontario CANADA				Dwn. By D.R.	
For HUNTSMAN CORPORATION MARYSVILLE, MICHIGAN				Chk'd By HRK	
Title TUBE LAYOUT FOURTH REACTOR CIRC. GAS COOLER ITEM # E-204A				App'd By HRK	
				Date 96/11/28	
				Scale 3/16"=1"	
Customer PO No. 961974			Customer Dwg. No. -		
Job No. 5459A			TUBERATE Dwg. No. 5459-B2		Rev. 2