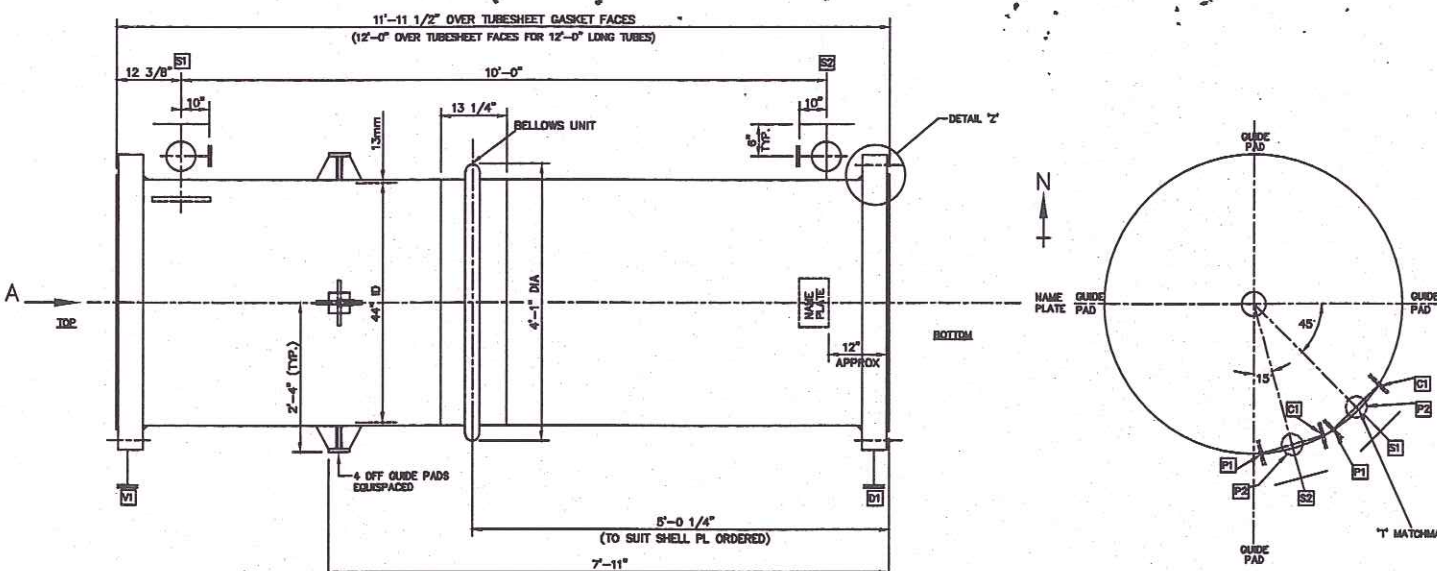




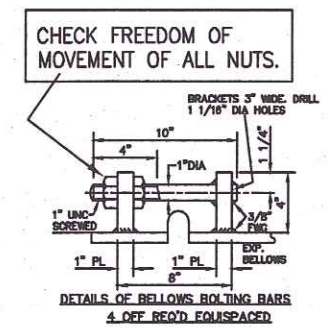
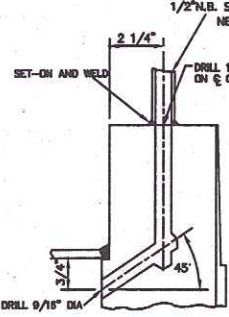
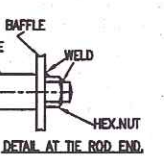
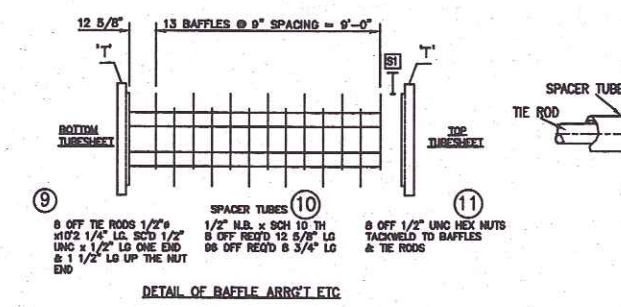
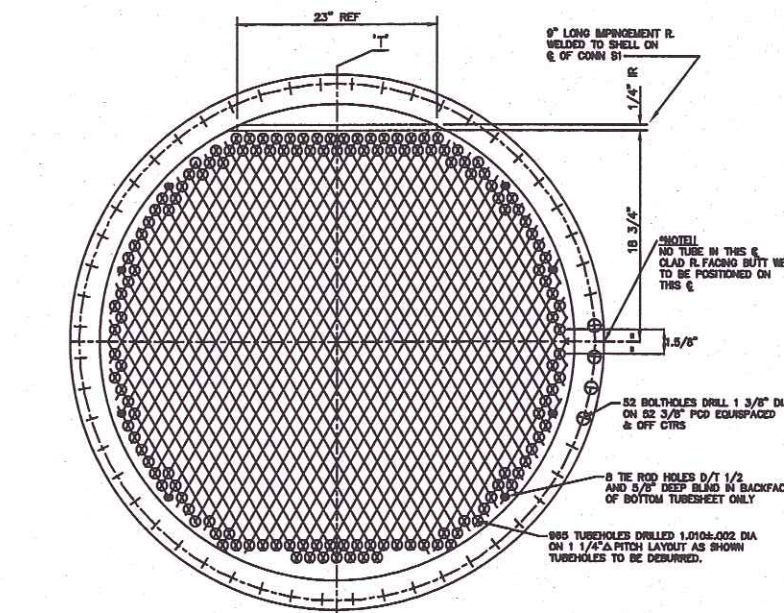
1. REMOVE TOP TUBESHEET, CLEAN AND RE-PREP. TUBEHOLES.
2. WITHDRAW BOTTOM TUBESHEET AND BUNDLE FROM SHELL.
3. REMOVE BOTTOM TUBESHEET FROM BUNDLE, CLEAN AND RE-PREP. TUBEHOLES.
4. DISMANTLE TUBE BUNDLE AND SALVAGE BAFFLES.
5. SHOTBLAST SHELL INSIDE AND OUT. CHECK BELLOWS TIE BARS.
6. ASSEMBLE TUBE BUNDLE USING NEW TUBES, RECLAIMED BAFFLES, NEW TIE RODS/SPACERS AND RECLAIMED BOTTOM TUBESHEET.
7. FIT NEW NOZZLE FLANGES TO S1, S2, P1, P2, V1 AND D1.
8. FIT RECLAIMED TOP TUBESHEET TO SHELL.
9. FABRICATE AND WELD SHELL MAKE UP PIECE.
10. FIT BUNDLE TO SHELL AND WELD TUBE ENDS.
11. PRESSURE TEST SHELLSIDE.
12. HELIUM LEAK TEST TUBE END WELDS.
13. PRESSURE TEST TUBESIDE USING COVERS SUPPLIED BY DUPONT.
14. PAINT SHELL ONE COAT PRIMER.
15. FIT BLANKS AND RETURN TO SITE.

MATERIAL RECLAIMED.

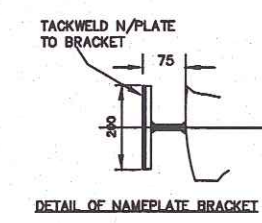
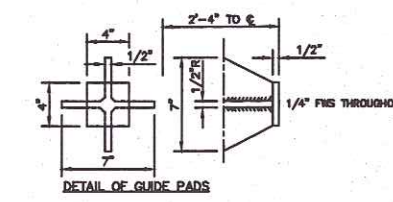
1. SHELL
2. BELLOWS.
3. TOP TUBESHEET AND BOTTOM TUBESHEET.
4. BAFFLES

MATERIAL TO BE REPLACED.

1. TUBES
2. NOZZLE FLANGES S1, S2, P1, P2, V1 AND D1.
3. TIE RODS AND SPACERS
4. BLIND FLANGES, BOLTS AND GASKETS FOR P1, P2, V1 AND D1.

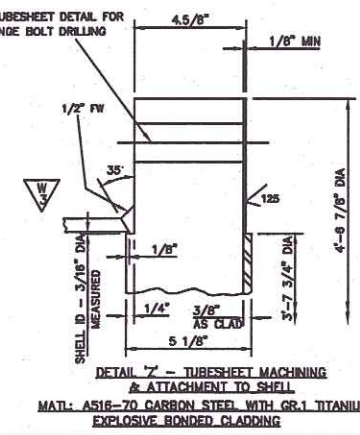
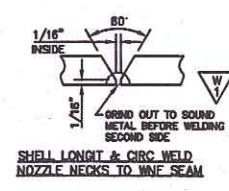


DETAIL OF TUBESHEET DRILLING
1 OFF REQ'D AS DRAWN (BOTTOM) SUPPLIED BY R.M.F.
1 OFF REQ'D WITHOUT TIE ROD HOLES (TOP) SUPPLIED FREE ISSUE



VESSEL TITLE		REACTOR VENT CONDENSER	
PLANT ITEM No.	E314E/1	P.V. REG. No.	
MANUFACTURER	RMF ENGINEERING LTD.	YEAR BUILT	2000
MANUF. JOB No.	4706/00	INSPECTOR'S STAMP	
I.C.I. ORDER No.		DESIGN CODE	ASME B DIV 1
DESIGN TEMPERATURE (°C)		SHELL 65 TUBES 210	
DESIGN PRESSURE (bar g)		SHELL 5.17 TUBES 29.31	
IN-SERVICE HYD. TEST PRESS. (bar g)		SHELL 7.79 TUBES 43.99	
SHOP TEST PRESSURE (bar g)		SHELL 7.79 TUBES 43.99	
POST-WELD HEAT TREATMENT		NO	
NDT RADIOGRAPHY/DYE PEN.		SPOT/TUBE END WELDS	
DRY WEIGHT(TONNES)		VOLUME(m3)	

DETAIL OF NAMEPLATE 3mm THICK S.S. PLATE
3mm HIGH CHARACTERS - BLACK ON POLISHED BACKGROUND.



NOTE - 150# R.F. BLIND FLANGES ARE TO BE FITTED TO NOZZLES:-
P1 AND C1 ⑥
P2 ⑦
D1 AND V1 ⑧
BOLTING FOR ABOVE - 1/2\"/>

REF	QTY	SIZE	RATING	FLANGE	PART No.	NECK	PART No.	SERVICE	STANDOUT VESSEL C/L TO F.F.
S1	1	8"	150#	RF WNF	2	219.1 O/DIA x 13 THK PLATE		SHELL INLET	2'-9"
S2	1	8"	150#	RF WNF	2	219.1 O/DIA x 13 THK PLATE		SHELL OUTLET	2'-9"
P1	2	1.1/2"	150#	RF WNF	3	1.1/2"N.B.x SCHD 160 PIPE		INSTRUMENT CONN. S1/S2	SEE DRG.
P2	2	1"	150#	RF WNF	4	1"N.B.x SCHD 160 PIPE		INSTRUMENT CONN. S1/S2	SEE DRG.
C1	2	1.1/2"	150#	RF WNF	5	1.1/2"N.B.x SCHD 160 PIPE		CHEMICAL CONN. S1/S2	SEE DRG.
D1	1	1/2"	150#	RF WNF	5	1/2"N.B.x SCHD 160 PIPE		DRAIN (SHELL)	2'-9"
V1	1	1/2"	150#	RF WNF	5	1/2"N.B.x SCHD 160 PIPE		VENT (SHELL)	2'-9"

NOZZLE SCHEDULE

SPECIFICATIONS:- TEMA 'R' 1988

DESIGN DATA:-

	SHELLSIDE	TUBESIDE
DESIGN PRESSURE	5.17 BAR G	29.31 BAR G
DESIGN TEMPERATURE	65°C	210°C
CORROSION ALLOWANCE	0.125"	
RADIOGRAPHY	SPOT	
LIQUID PENETRANT EXAM.	NO	100%
HYDRO. TEST	7.79 BAR G	43.99 BAR G
PNEUMATIC TEST	NO	
POST WELD H.T.	NO	

- (1) UNLESS STATED OTHERWISE, ALL NOZZLE BOLT HOLES TO BE POSITIONED OFF NORMAL VESSEL CENTRELINES.
- (2) ALL WELDERS AND WELDING PROCEDURES TO BE QUALIFIED TO ASME IX
- (3) SERVICE GASKETS TO BE FITTED FOR HYDRO. TEST.
- (4) ALL GASKET FACES TO HAVE 6.3 TO 12.5 µm FINISH.
- (5) HELIUM LEAK TEST TO BE CARRIED OUT ON TUBE END WELDS.
- (6) TUBESHEET TEST COVERS TO BE SUPPLIED BY DUPONT.

INTERNAL FINISH: CLEAN AND DRY

EXTERNAL FINISH: ONE COAT PRIMER.

TRANSIT PROTECTION: OPENINGS SEALED WITH WOOD COVERS

INSPECTION BY:- DU PONT (UK) LTD. REPRESENTATIVE

TWO COPIES OF DATA FOLDERS REQUIRED IN ACCORDANCE WITH CUST'S EQUIPMENT SCHEDULE TABLE #1.

MATERIAL SCHEDULE

PART No.	No. OFF	LOCATION	MATERIAL TYPE	MATERIAL SPECIFICATION
1	965	TUBES	TITANIUM GR.2	ASTM B338 GR.2
2	2	FLANGES S1 & S2	C.S. FORGING	ASTM A105
3	2	FLANGES P1	C.S. FORGING	ASTM A105
4	2	FLANGES P2	C.S. FORGING	ASTM A105
5	2	FLANGES D1 & V1	C.S. FORGING	ASTM A105
6	4	COVERS P1	C.S. FORGING	ASTM A105
7	2	COVERS P2	C.S. FORGING	ASTM A105
8	2	COVERS D1 & V1	C.S. FORGING	ASTM A105
9	8	TIE RODS	S.S. BAR	ASTM A970-321
10	8	SPACER PIPES	S.S. PIPE	ASTM A312-321
11	8	TIE NUTS	S.S. HEX NUT	ASTM A194-B
12	12	GASKETS P1	1/16"THK PSM-AS (1.1/2" 150# SIZE)	
13	6	GASKETS P2	1/16"THK PSM-AS (1" 150# SIZE)	
14	6	GASKETS D1 & V1	1/16"THK PSM-AS (1/2" 150# SIZE)	
15	32	NOZZLE BOLTING	Dr-M6 STUDBOLTS	ASTM A193 B7/A194 2H
16	1	SHELL MAKE UP PIECE	C.S. PLATE	ASTM A516-70

* 2 SPARE SETS OF GASKETS INCLUDED.

CLIENT DU PONT (UK) LTD.
TITLE REFINISHMENT OF REACTOR VENT CONDENSER
PLANT ITEM No. E 314E/1
PURCHASE ORDER No. 4550000212

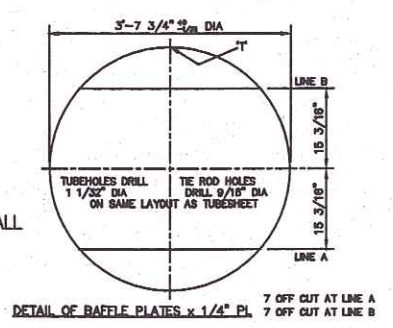
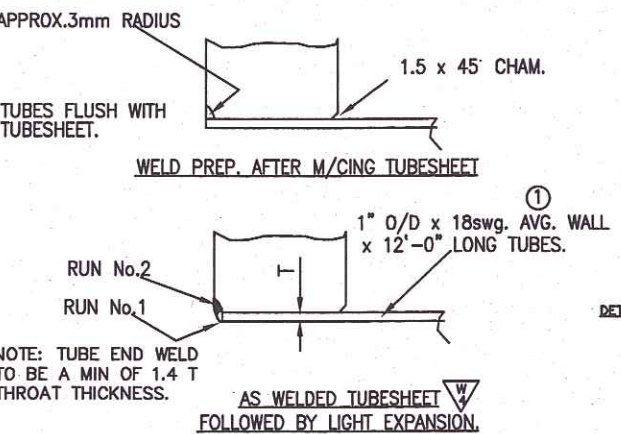
RMF CORROSION RESISTANT CHEMICAL PLANT

RMF ENGINEERING LTD.,
registered office
ROTHERHAM ROAD,
LAUGHTON COMMON,
DINNINGTON, SHEFFIELD S31 7RG.

DU PONT DRAWING No. D/A7/15/13380

SCALES: 1:15 DRG. No: 4706/00/1 REV 1

REV 3	CHD.	REV 2	CHD.	REV 1	CHD. B.A.	REV 0	CHD. B.A.



NOTE: TUBE END WELD TO BE A MIN OF 1.4 T THROAT THICKNESS.
AS WELDED TUBESHEET FOLLOWED BY LIGHT EXPANSION.