

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

Form U-1

1. Manufactured and certified by EXELL, INC. 690 FRANKLIN ST. BEAUMONT, TX, USA 77701
(Name and address of Manufacturer)
2. Manufactured for OCCIDENTAL CHEMICAL COMPANY PO BOX 3785, BEAUMONT, TX 77704
(Name and address of Purchaser)
3. Location of Installation OCCIDENTAL CHEMICAL COMPANY GULF STATES ROAD, BEAUMONT, TX 77704
(Name and address)
4. Type: VERTICAL HEAT EXCHANGER 13223 13223 1883 1998
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exh., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year Built)
5. ASME Code, Section VIII, Div. 1 1995-A96
Edition and Addenda (date) Code Case No. Special Service per UG-120 (d)

Items 6 - 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell: (a) No. of course(s): 2 (b) Overall length (ft & in.): 19-8.375

Course(s)			Material	Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	42.000	9-11.000	SA-516-70	.500	.125	1	SPOT	85	1	SPOT	85	—	—
1	42.000	9-9.375	SA-516-70	.500	.125	1	SPOT	85	1	SPOT	85	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—

7. Heads: (a) (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (b) (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
	Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	—	—	—	—	—	—	—	—	—	—	—	—	—
(b)	—	—	—	—	—	—	—	—	—	—	—	—	—

If removable, bolts used (describe other fastening)

8. Type of Jacket Jacket Closure (Describe as ogee & weld, bar, etc.)
If bar, give dimensions — If bolted, describe or sketch.

9. MAWP 97 — psi at max. temp. 370 — °F Min. design metal temp. -20 °F at 97 psi.
(internal) (external) (internal) (external)

10. Impact test NO PER UG-20f
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. HYDROTEST AT 197 PSI Proof test —
Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-516-70 45.625 1.875 .125 WELDED
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)
- SA-516-70 47.250 1.875 .125 WELDED
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment
13. Tubes: SA-214 .750 14 MW 1557 STRAIGHT
Mat'l Spec. No., Grade or type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14 - 18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): 2 (b) Overall length (ft & in.): 2-11.812

Course(s)			Material	Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	42.000	2-10.312	SA-516-70	.500	.125	1	SPOT	85	1	SPOT	85	----	----
1	42.000	0-1.500	SA-516-70	.500	.125	1	SPOT	85	1	SPOT	85	----	----
—	—	—	—	—	—	—	—	—	—	—	—	—	—

15. Heads: (a) SA-516-70 (b) SA-516-70
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
	Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a) TOP	.231	.125	—	—	2:1	—	—	—	—	YES	S	NONE	100
(b) BOTTOM	.215	.125	—	—	2:1	—	—	—	—	YES	S	NONE	100

If removable, bolts used (describe other fastening)

(Mat'l Spec. No., Grade, Size, No.)

#100268

16. MAWP 77 (internal) (external) psi at max temp. 333 (internal) (external) °F Min. design metal temp. -20 °F at 77 psi.

17. Impact test

NO PER UG-201 AND UCS-66

(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press.

HYDROTEST AT 134 PSI

Proof test

Nozzles, inspection, and safety valve openings: UG125 (a)

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
INLET	1	12-150#	RFWN	SA-106B	SA-105	.500	.125	INTEGRAL	WELDED	WELDED	
INLET/OUTLET	2	6-150#	RFWN	SA-106B	SA-105	.432	.125	INTEGRAL	WELDED	WELDED	
VENT/DRAIN	3	1-150#	RFLWN	SA-105		.500	.125	INTEGRAL	WELDED		
OUTLET	1	18-150#	RFWN	SA-106B	SA-105	.500	.125	INTEGRAL	WELDED	WELDED	
AUXILLARY	8	3/4-6M#	CPLG	SA-105			.125	INTEGRAL	WELDED		
VENT/DRIAN	2	1/2"	NPT								

20. Supports: Skirt

(Yes or No)

Lugs

2

(No.)

Legs

(No.)

Others

(Describe)

Attached

WELDED TO SHELL

(Where and How)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: ONE (1) THIRD EFFECT REBOILER
ITEM #E-1532

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

U Certificate of Authorization No. 14.155 Expires SEPTEMBER 4, 19 98

Date: 3/11/98

Name:

EXELL, INC.
(Manufacturer)

Signed:

(Representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of TEXAS and employed by H.S.B.I. & I. CO. of HARTFORD, CT. have inspected the pressure vessel described in this Manufacturer's Data Report on 3-11, 19 98, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 3-11-98

Signed

(Authorized Inspector)

Commissions

N.B. A8510
(Nat'l Board incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.

U Certificate of Authorization No. _____ Expires _____, 19 ____

Date:

Name:

(Assembler)

Signed:

(Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____ psi. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date

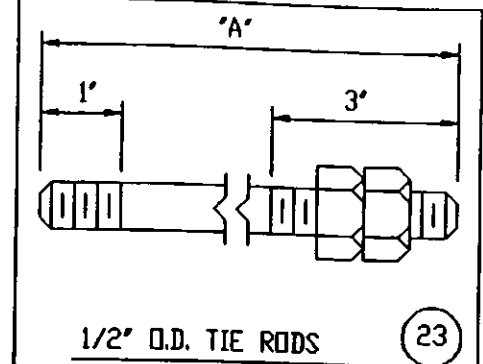
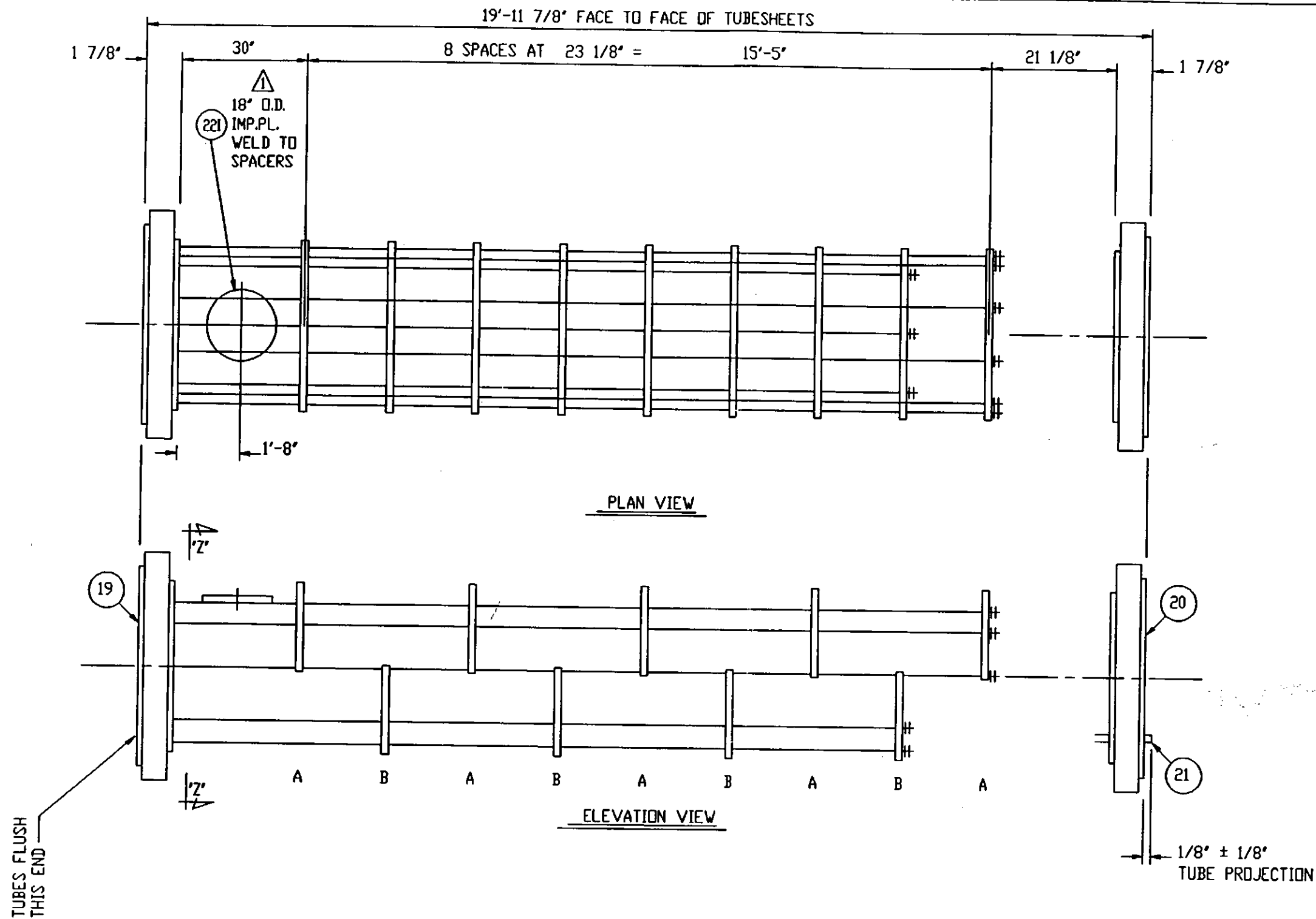
Signed

(Authorized Inspector)

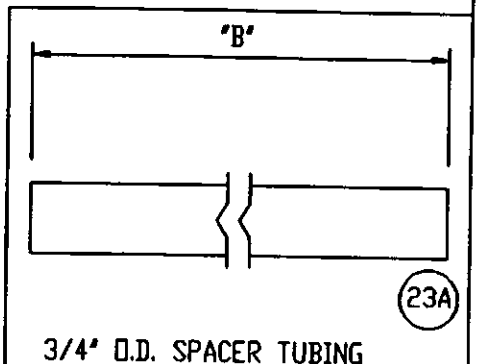
Commissions

(Nat'l Board incl. endorsement, State, Province and No.)

#100268



REQ'D.	'A'
6.	18'-1 1/2"
3.	16'-2 1/2"



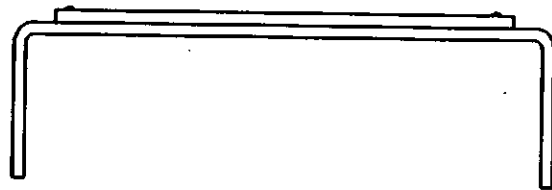
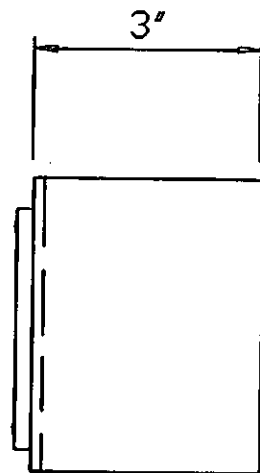
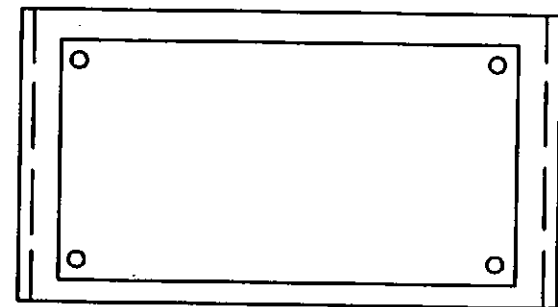
REQ'D.	'B'
6.	29 7/8"
3.	53"
16.	22 7/8"
25.	46"

NOTES:



- 1) SEE DWG. NO. 13223-13 FOR JOB NOTES.
- 2) SEE DWG. NO. 13223-9 FOR SECTION AND VIEW DETAILS.

BUNDLE DETAILS			
		DWN. BY	
		D.Holk	
		DATE	1- 2-98
		CKD. BY	
		RW	P.O. BOX 3726 BEAUMONT, TEXAS 77704 (409)838-3400
		DWG.NO.	
		13223-8	REV. 1
NO.	DATE	REVISIONS	
1	2-4-98	REV. IMP. PLATE PER CUST. GRI	

NAMEPLATE: TYPE 302 STAINLESS STL. (4" X 6")
BRACKET: SA-36
ALL BRACKET WELDS TO BE CONTINUOUS FILLET



NAMEPLATE BRACKET

 RT-3	NATIONAL BOARD SERIAL NO.			
	CERTIFIED BY: 		BEAUMONT, TX.	
	M.A.W.P. 77	P.S.I. AT 333	°F	TUBE SIDE
	M.A.W.P. 97	P.S.I. AT 370	°F	SHELL SIDE
MIN. DESIGN METAL TEMP. -20		°F AT 77	P.S.I.	TUBE SIDE
MIN. DESIGN METAL TEMP. -20		°F AT 97	P.S.I.	SHELL SIDE
MANUFACTURER'S SERIAL NO. 13223				
YEAR BUILT 1998		ITEM NO. E-1532		
PURCHASE ORDER NO. 1646665-80A				
SIZE 42-240		WEIGHT LBS. 29000		
TEST PRESSURE P.S.I. SHOP: 134			FIELD : 116	TUBE SIDE
TEST PRESSURE P.S.I. SHOP: 197			FIELD : 146	SHELL SIDE

			NAMEPLATE AND BRACKET		
			DWN. BY		
			D.Holk		
			DATE		
			1- 1-98		
			CKD. BY		
			RW		
			DWG.NO.		
			13223-11		
			REV.		

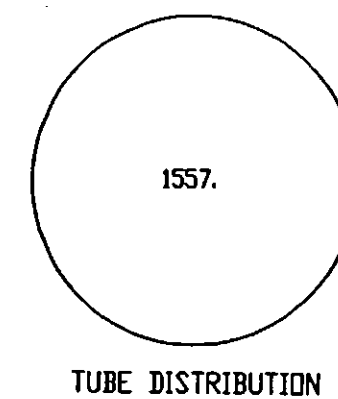
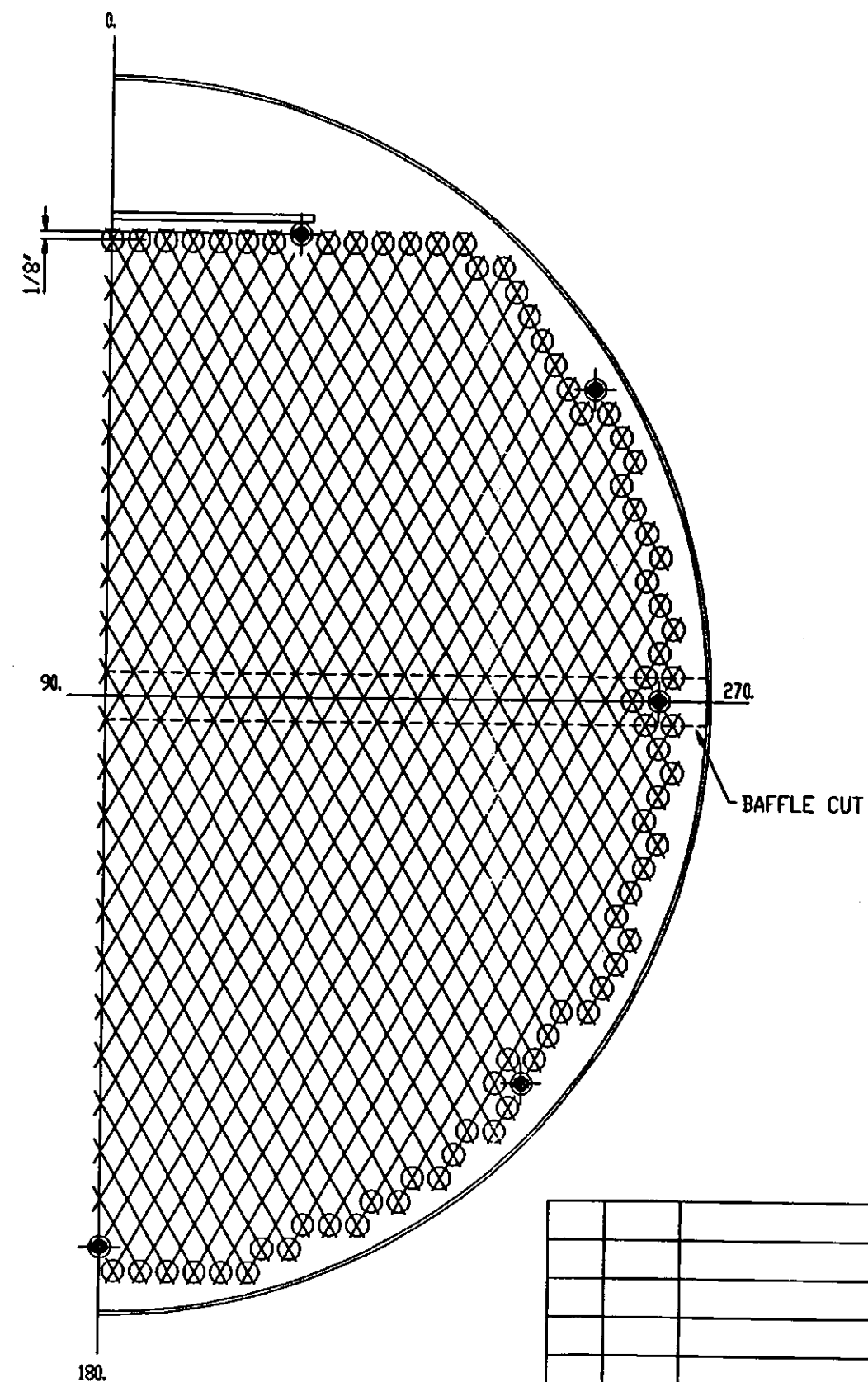
NO.	DATE	REVISIONS



P.O. BOX 3726
BEAUMONT, TEXAS
77704 (409)838-3400

TIE RODS.
1/2" O.D.
9 REQD. TOTAL


LAYOUT SYMMETRICAL
ABOUT VERTICAL
CENTER LINE.

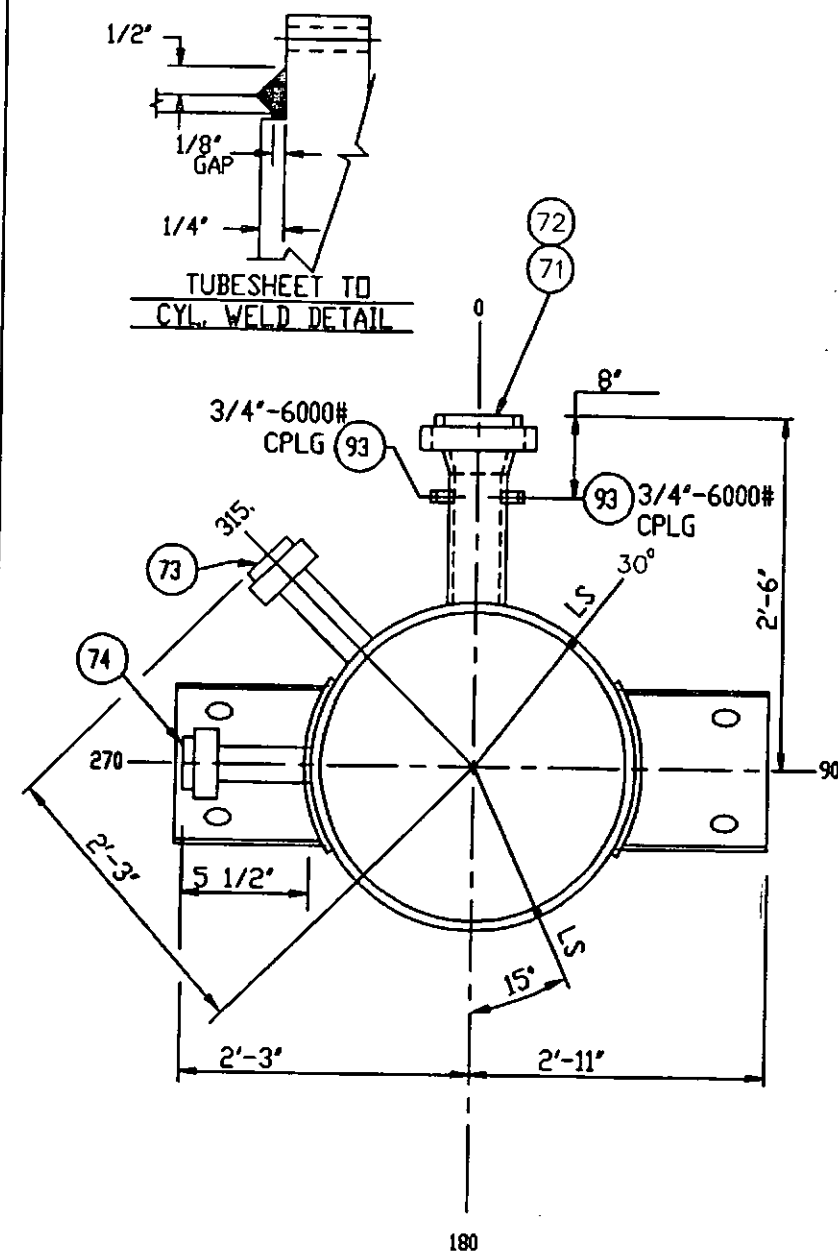


NOTES:

- 1) DRILL AND REAM TUBE HOLES IN
TUBESHEETS TO .7600" +/- .0020" DIA.
FOR 1557 - 3/4" O.D. TUBES.
- 2) TUBE PITCH = 15/16" TRIANGLE.
- 3) NUMBER OF PASSES = 1
- 4) SEE DRAWING 13223-6
FOR TUBE GROOVING DETAILS.
- 5) BAFFLE O.D. = 41 3/4"
- 6) O.T.L. = 41 1/8"

VIEW LOOKING AT SHELL SIDE OF NO. 19 TUBESHEET

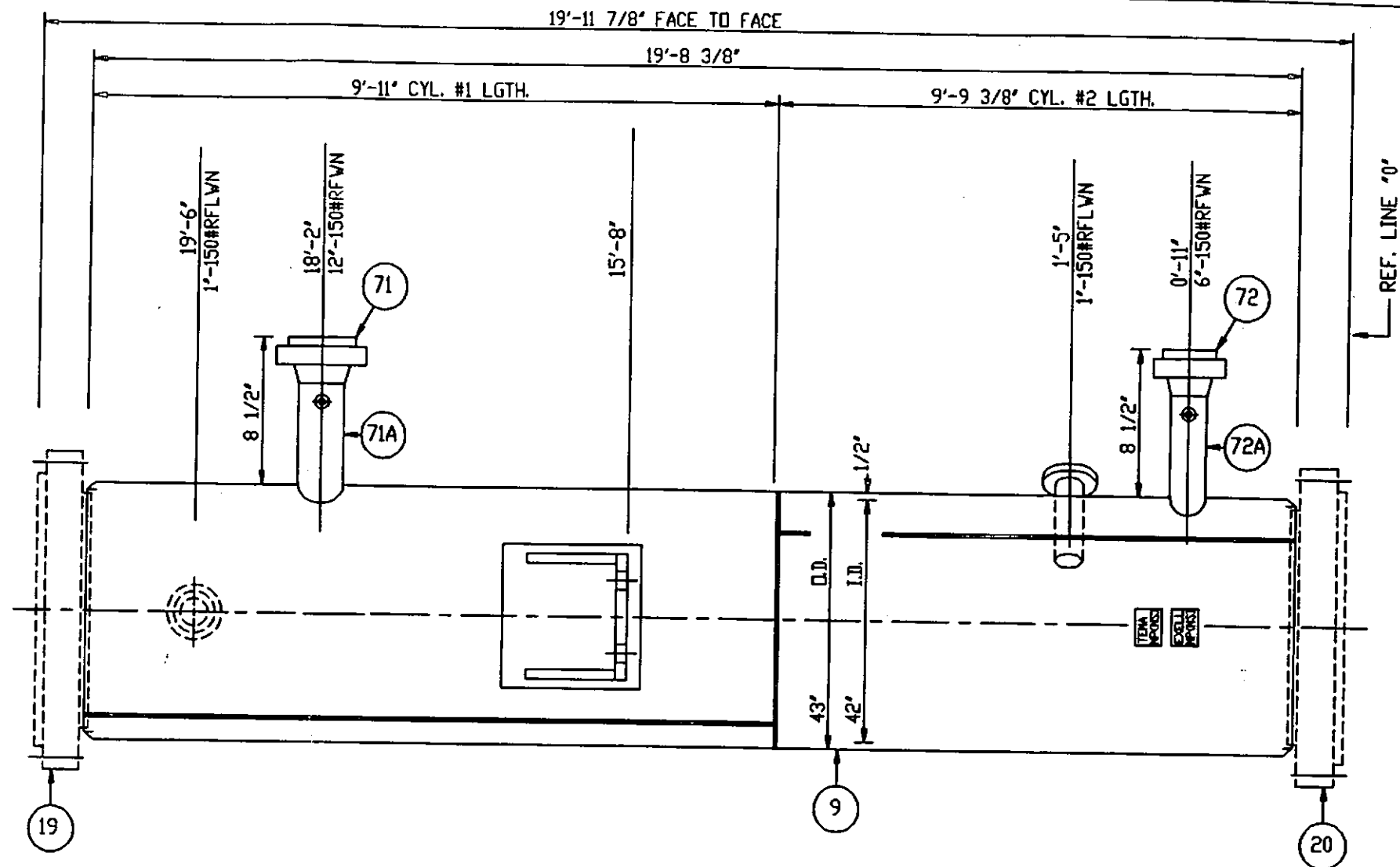
			TUBE LAYOUT		
			DWN. BY	 <p>P.O. BOX 3726 BEAUMONT, TEXAS 77704 (409)838-3400</p>	
			D.Holk		
			DATE		
			1- 2-98		
			CKD. BY	DWG.NO.	REV
			RW	13223-7	
NO.	DATE	REVISIONS			




SHELL END VIEW

NOTES:

- 1) SEE DWG. 13223-13 FOR JOB NOTES.
- 2) SEE DWG. 13223-14 FOR WELD & BEVEL DETAILS.



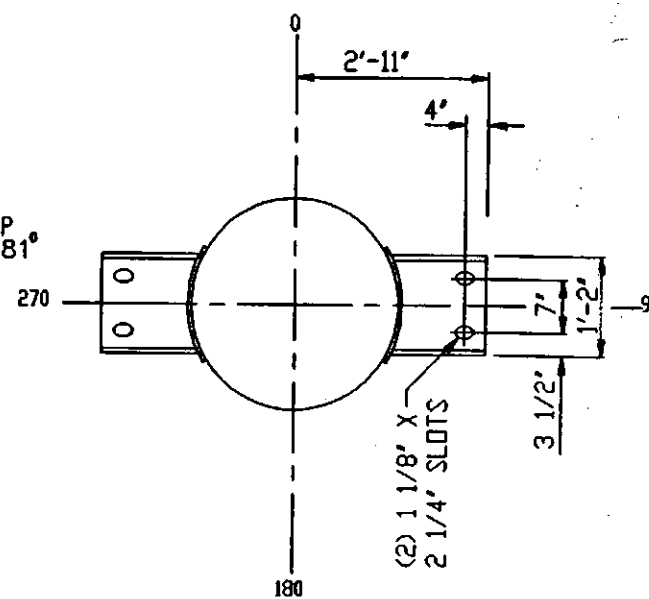
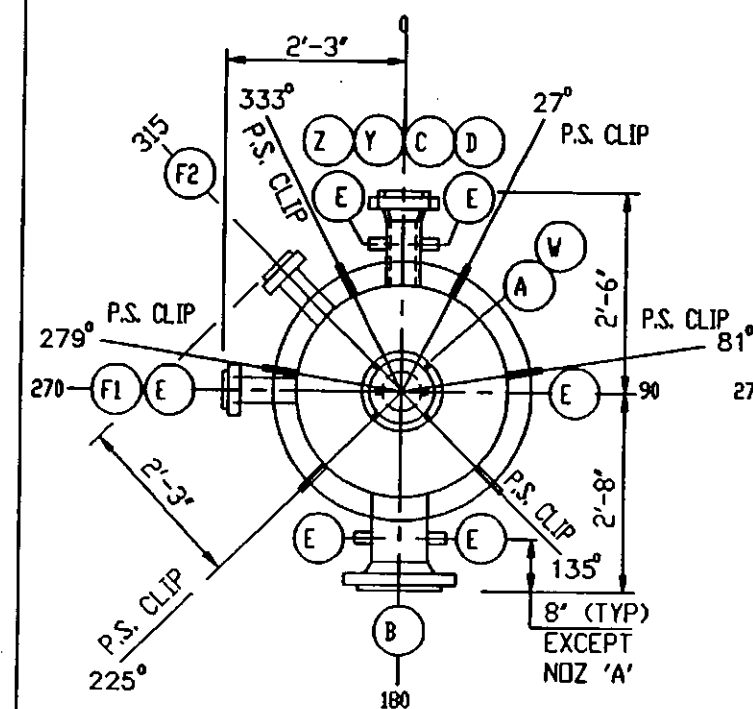
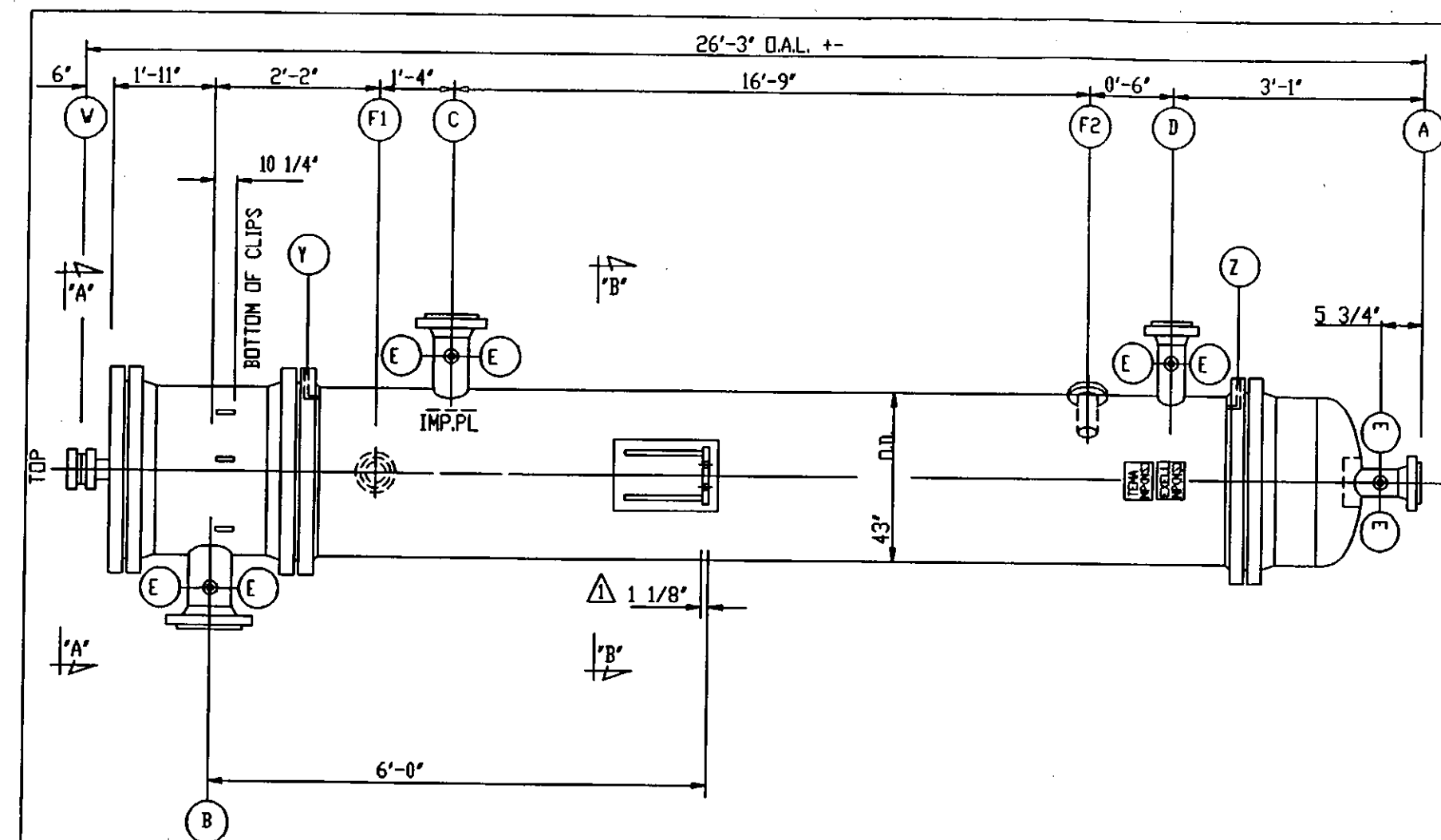
SHELL SIDE VIEW

			SHELL DETAILS		
			DWN. BY	 <p>P.O. BOX 3726 BEAUMONT, TEXAS 77704 (409)838-3400</p>	
			D.Holk		
			DATE		
			1- 1-98		
			CKD. BY	DWG.NO.	REV.
NO.	DATE	REVISIONS	RV	13223-3	



P.O. BOX 3726
BEAUMONT, TEXAS
77704 (409)838-3400

100268



NOZZLE SCHEDULE			
MK	QT	DESCRIPTION	PROCESS
C	1	12" 150#RF WN	INLET
D	1	6" 150#RF WN	OUTLET
F1	1	1" 150#RF LVN	VENT
F2	1	1" 150#RF LVN	DRAIN
B	1	18" 150#RF WN	OUTLET
V	1	1" 150#RF LVN	VENT
A	1	6" 150#RF WN	INLET
E	8	3/4" 6000# CPLG	AUX
Z	1	1/2" NPT	DRAIN
Y	1	1/2" NPT	VENT

DESIGN DATA	SHELL	TUBE
DESIGN PRESSURE P.S.I.G.	96.	75.
MAWP (H&C) P.S.I.G.	97. (TUBESHEETS)	77. (CHAN.COVER)
MAP (N&C) P.S.I.G.	131. (TUBESHEETS)	89. (CHAN.COVER)
SHOP TEST PRESS P.S.I.G.	197.	134.
FIELD TEST PRESS P.S.I.G.	146.	116.
VACUUM PRESSURE	N/A	N/A
DESIGN TEMP. Deg.F.	370.	333.
MDMT Deg. F.	-20.	-20.
CORROSION ALLOWANCE	1/8"	1/8"
NUMBER OF PASSES	1.	1.
RADIOGRAPHY	SPOT	SPOT
HEAT TREAT REQUIRED	NO	NO

ESTIMATED WEIGHTS, LBS.	
DRY: 29000.	WET: 44050.

SPECIFICATIONS
ASME CODE SECT. VIII DIV.1, 1995 EDD. (STAMP YES)
TEMA CLASS B
NATIONAL BOARD REGISTRATION IS REQUIRED

MATERIAL
CHANNEL: SA-516-70
SHELL: SA-516-70
TUBESHEETS: SA-516-70
BAFFLES: SA36orEQUAL
TUBES: SA-214
< 1557. > 3/4" O.D.X 14bwg x 20'-0" LG.
TUBE PITCH 15/16" SURFACE 6000. SQ.FT.

GENERAL NOTES
ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.

GASKETS: .1250" THK. SILDJNAF (2 SPARE SETS REQUIRED)

PAINT: SEE SHEET 13

CUST: OCCIDENTAL CHEMICAL COMPANY

P.O. NO: 1646665-80A

ITEM NO: E-1532

SERVICE: THIRD EFFECT REBOILER

ASSEMBLY AND SPECIFICATIONS FOR

ONE 42-240

B E L

DWN. BY

D.Holk

DATE

12-31-97

CKD. BY

RW



P.O. BOX 3726
BEAUMONT, TEXAS
77704 (409)838-3400

DWG.NO.

13223-1

REV.

1

CERTIFIED

#100268