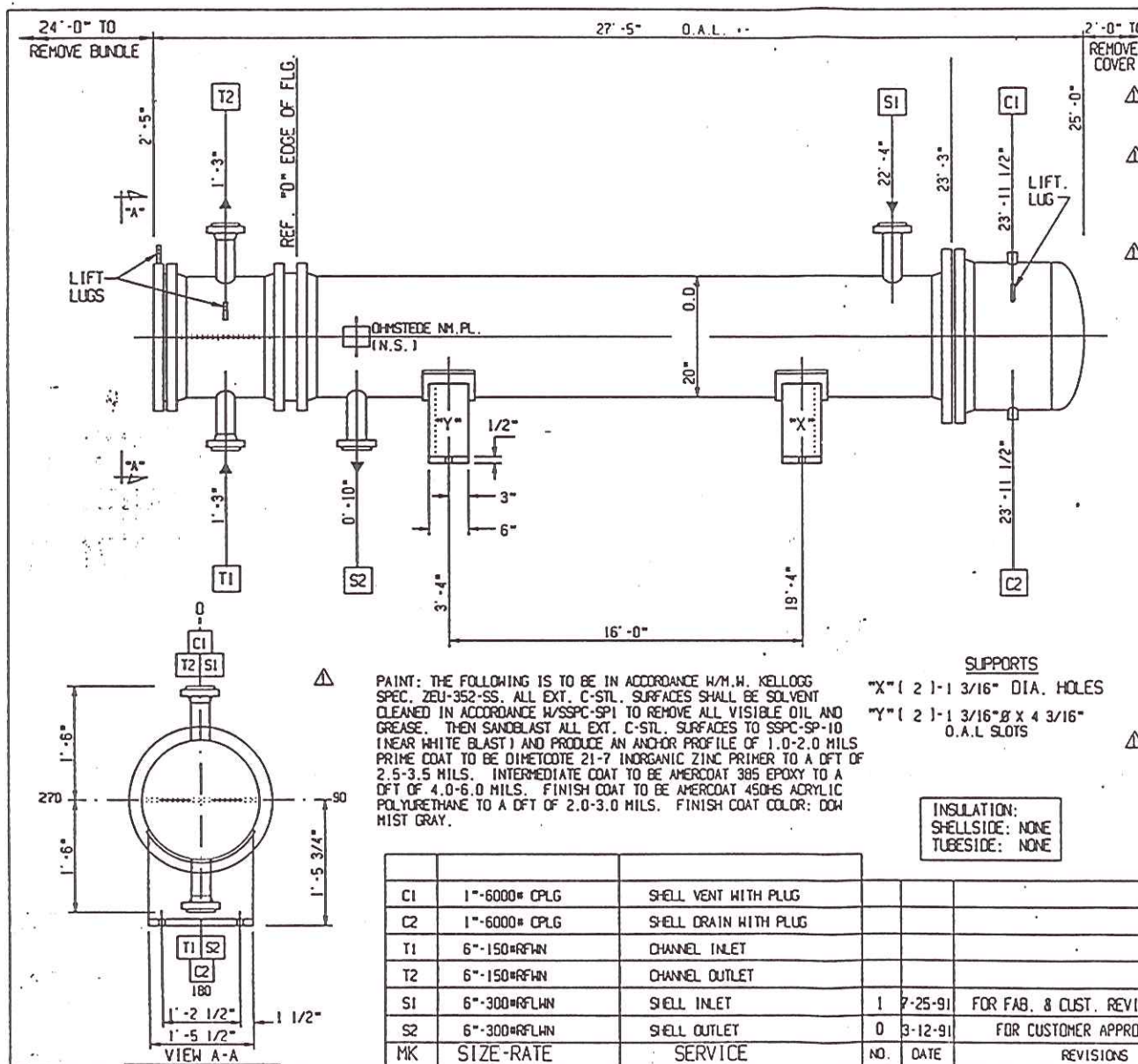
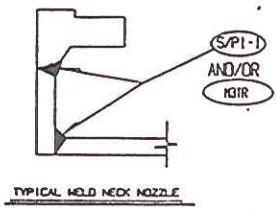
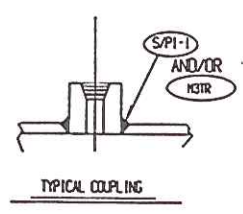
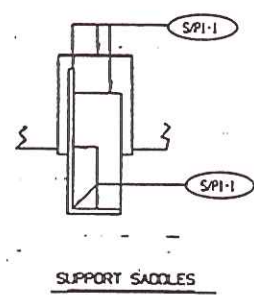
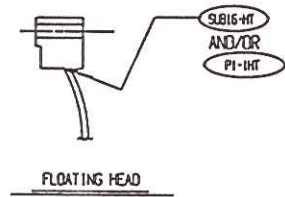
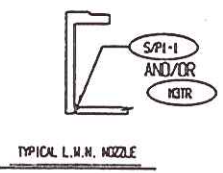
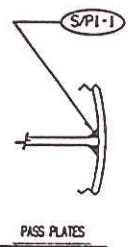
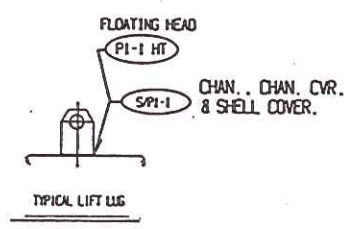
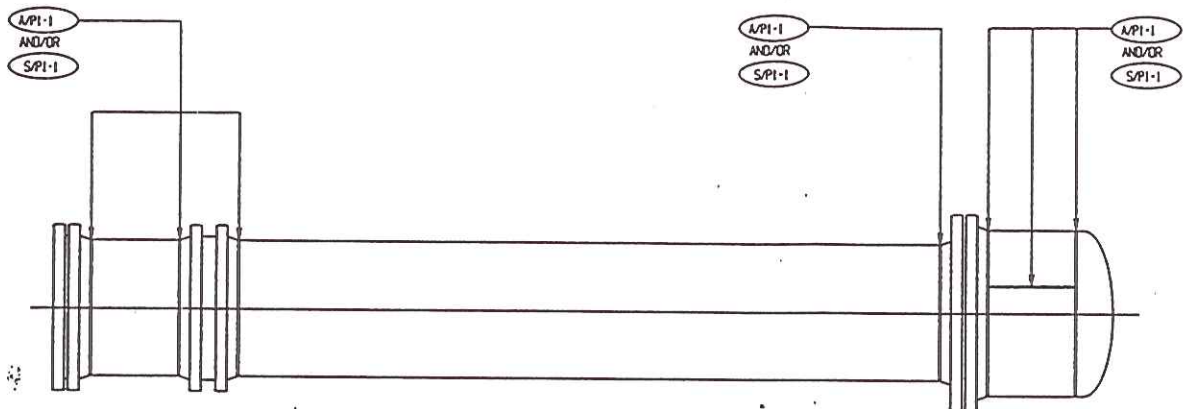




DESIGN DATA		SHELL	TUBE
DESIGN PRESSURE P.S.I.G.		390	260/FV
TEST PRESSURE P.S.I.G. SHOP/FIELD		617/593	425/390
DESIGN TEMPERATURE DEG. F./MONT (MAX/MIN)		650/ 10	200/ 10
CORROSION ALLOWANCE		.1250"	.1250"
NUMBER OF PASSES		1	2
RADIOGRAPHIC EXAMINATION		FULL (RT-1)	SPOT (RT-3)
HEAT TREAT REQUIRED		NO	*
ESTIMATED WEIGHTS, LBS.			
DRY: 10000	BUNDLE: 5500	NET: 13500	
SPECIFICATIONS			
ASME CODE SECTION VIII DIV.1 STAMP YES		M.W. KELLOGG SPECS.:	
TEMA CLASS R		C41-1E-6636.4-7TS-6636	
NATIONAL BOARD REGISTRATION REQUIRED		9-4S-6636.06E-116-1FCDS	
* HEAT TREATMENT-FLOATING HEAD ONLY		P42-1TS-6636.M17-2S-89	
MATERIAL			
CHANNEL:	SA-106-B	CERTIFIED MH	
SHELL:	SA-106-B		
TUBESHEETS:	SA-350-LF2	DATE 7/25/91	
BAFFLES:	SA36		
TUBES:	SA-214	x 24'-0" LG.	
1 272 1 3/4"	0.0 x .083" MIN.		
TUBE PITCH 15/16"	Δ	SURFACE 1265 SO. FT.	
GENERAL NOTES			
ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.			
<u>MAX. ALLOWABLE PRESSURE:</u>			
<u>SHELLSIDE:</u>			
MAWP (HOT & CORR.) = 395 PSIG LIM. BY SHELL FLANGE			
MAP (N & C) = 411 PSIG LIM. BY SHELL FLANGE			
<u>TUBESIDE:</u>			
MAWP (HOT & CORR.) = 260 PSIG LIM. BY NOZZLE RATING			
MAP (N & C) = 283 PSIG LIM. BY CHANNEL COVER			
MINIMUM DESIGN METAL TEMP. = -10°F			
GASKETS: .1250" THK. A10JNAF			
FLTG. HD. GASKET: .0625" THK. SOFT IRON (120 MAX. BRINELL HARDNESS)			
2 SETS OF SPARE GASKETS REQUIRED.			
CUST: M.W.KELLOGG/TENNECO			
P.O. NO.: 6636-9901-C210-01			
ITEM NO.: 06E-116			
SERVICE : DEPROPANIZER RAFFINATE COOLER			
SHIP TO : LAPORTE, TX.			
OHMSTEDE JOB NO.:28394			
ASSEMBLY AND SPECIFICATIONS FOR			
ONE 19-288 A E S			
OWN. BY GEO		OHMSTEDE	
DATE 3-5-91			
CKD. BY DC	DRAWING NO. 28394	SHEET NO. 1	REV.

103372

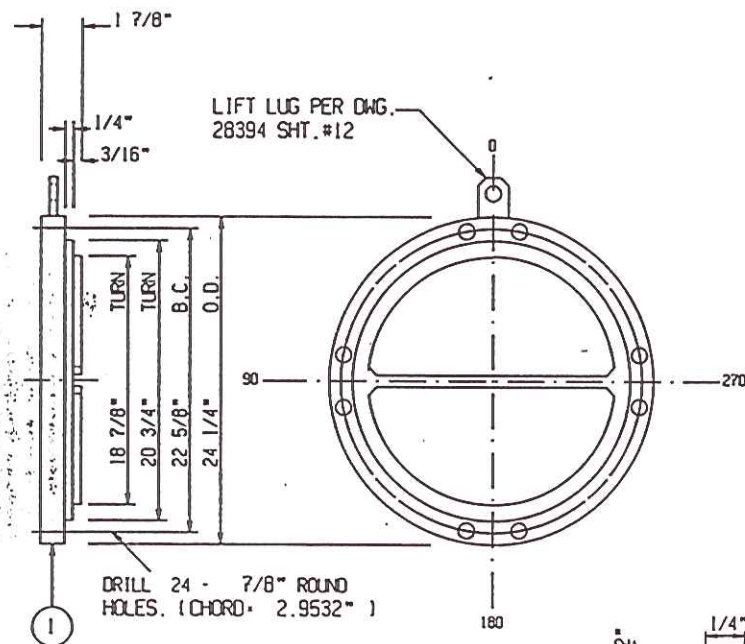


CUST: M.W. KELLOGG/TENNECO
 P.O. NO.: 6636-9901-C210-01
 ITEM NO.: 06E-116
 SERVICE: DEPROPANIZER RAFFINATE COOLER
 SHIP TO: LAPORTE, TX.
 OHMSTEDE JOB NO.: 28394

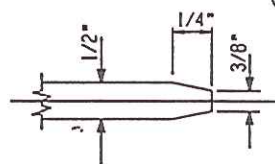
				WELD MAP				
				OWN. BY GEO	OHNSTEDE			
				DATE 3-4-91				
1	7-25-91	FOR FAB. & CUST. REVIEW	CC	CKD. BY DC	DRAWING NO.	SHEET NO.	REV.	
0	3-12-91	FOR CUSTOMER APPROVAL			28394	2	1	
NO.	DATE	REVISIONS						

COVER NOTES:

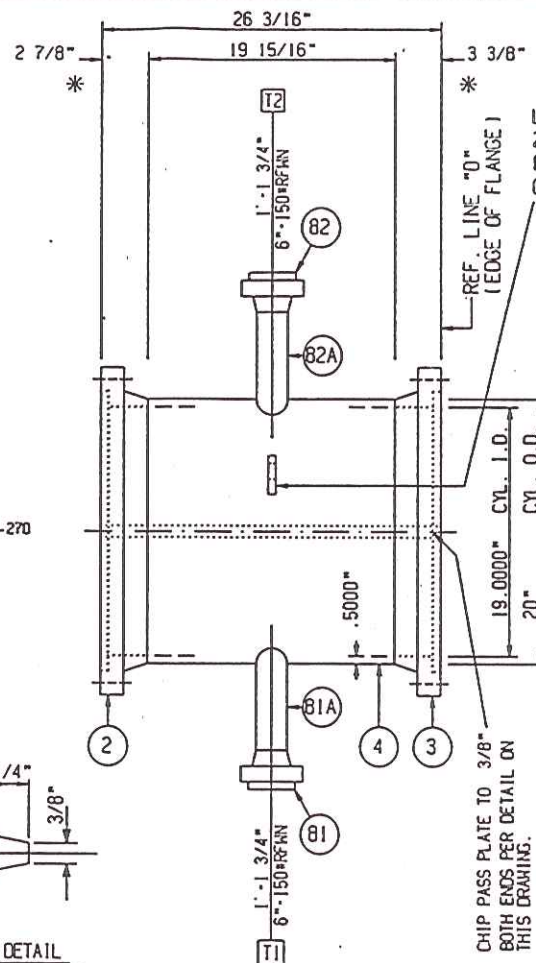
- 1) MACHINE ALL COVER GASKET SURFACES TO 125 RMS
- 2) ALL COVER PASS PLATE GROOVE WIDTHS TO BE 1/2" WIDE.
- 3) ALL COVER PASS PLATE GROOVE JUNCTIONS TO BE NOTCHED 3/8" AT 45 Deg.



CHANNEL-COVER DETAIL



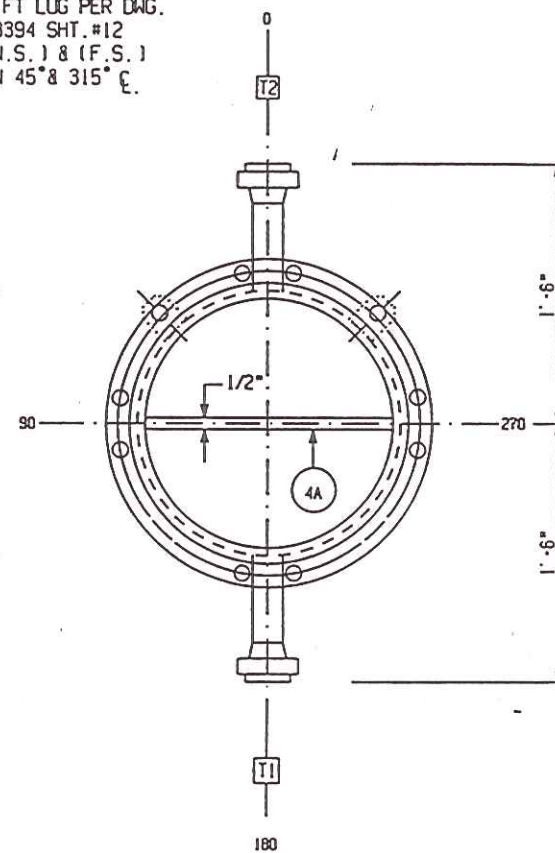
PASS PL. TAPER DETAIL
(TYPICAL BOTH ENDS)



CHANNEL SIDE VIEW

* MACHINE GASKET FACING AFTER ALL WELDING.
FOR FLANGE DETAILS SEE DWG. 28394 SHT. #14

LIFT LUG PER DWG. 28394 SHT. #12 (N.S.) & (F.S.) ON 45° & 315° E.



CHANNEL END VIEW

NOTES:

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/PI-1, #A/PI-1, M3TR
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28394 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) SPOT RADIOGRAPHY. (RT-3)

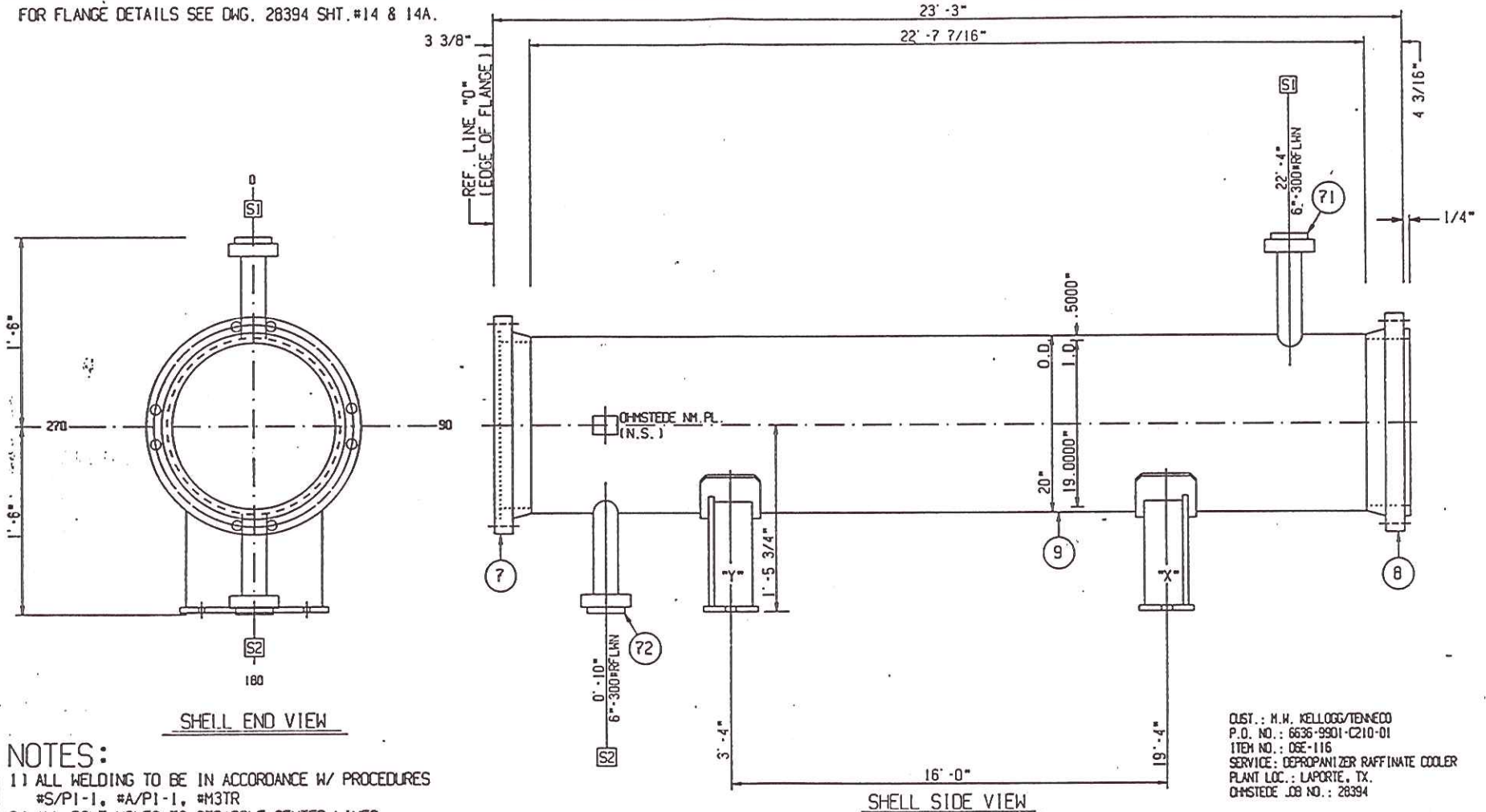
CUST.: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9001-C210-01
ITEM NO.: OGE-116
SERVICE: DEPROPANIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

FRONT CHANNEL DETAILS

OHMSTEDE

				FRONT CHANNEL DETAILS				
				OWN. BY	OHMSTEDE			
				ERIC				
				DATE				
					6-21-91			
0	7-25-9	FOR FAB. & CUST. REVIEW		CC				
NO.	DATE	REVISIONS		OKD. BY	DRAWING NO.	SHEET NO.		REV
				DC	28394	3		0

FOR FLANGE DETAILS SEE DWG. 28394 SHT. #14 & 14A.



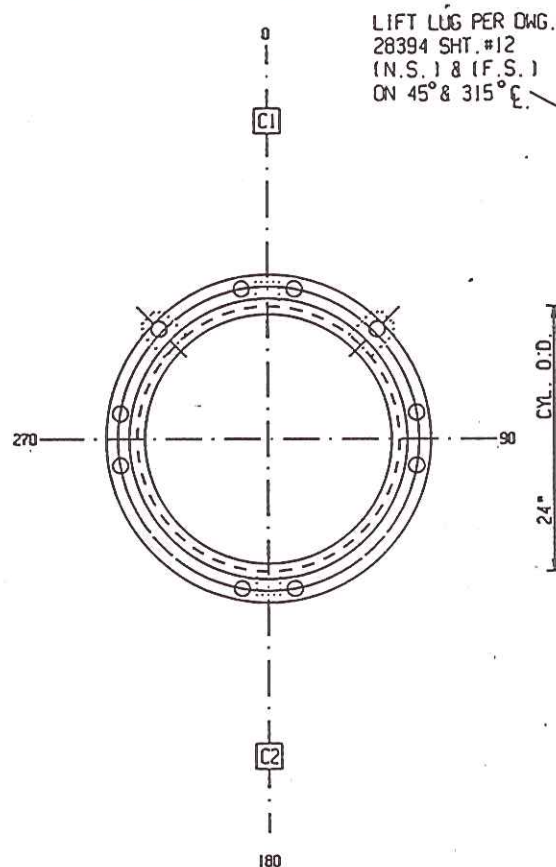
NOTES:

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/PI-1, #A/PI-1, #M3TR
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28394 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) GRIND ALL INSIDE WELDS FLUSH.
- 5) FULL RADIOGRAPHY. (RT-1)

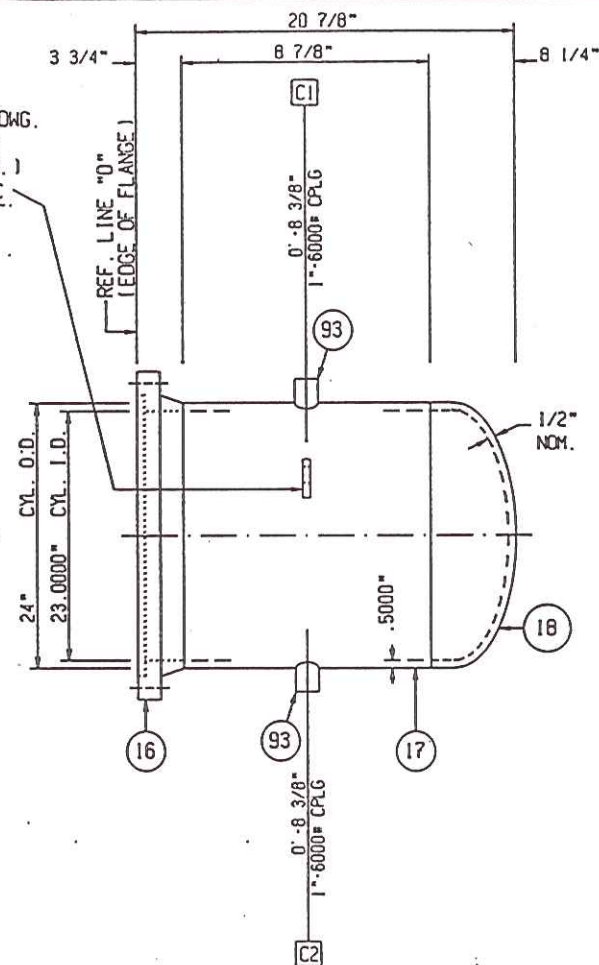
CUST.: M.W. KELLOGG/TENNCO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: DSE-116
SERVICE: DEPROPANTIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

SHELL DETAILS			
OHMSTEDE		DWN. BY ERIC	
		DATE 6-21-91	
0 7-25-91		CC	
NO. DATE		REV. DC	
FOR FAB. & CUST. REVIEW		DRAWING NO. 28394	
REVISIONS		SHEET NO. 4	
		REV. 0	

FOR FLANGE DETAILS SEE DWG. 28394 SHT. #14A



SHELL CVR. END VIEW



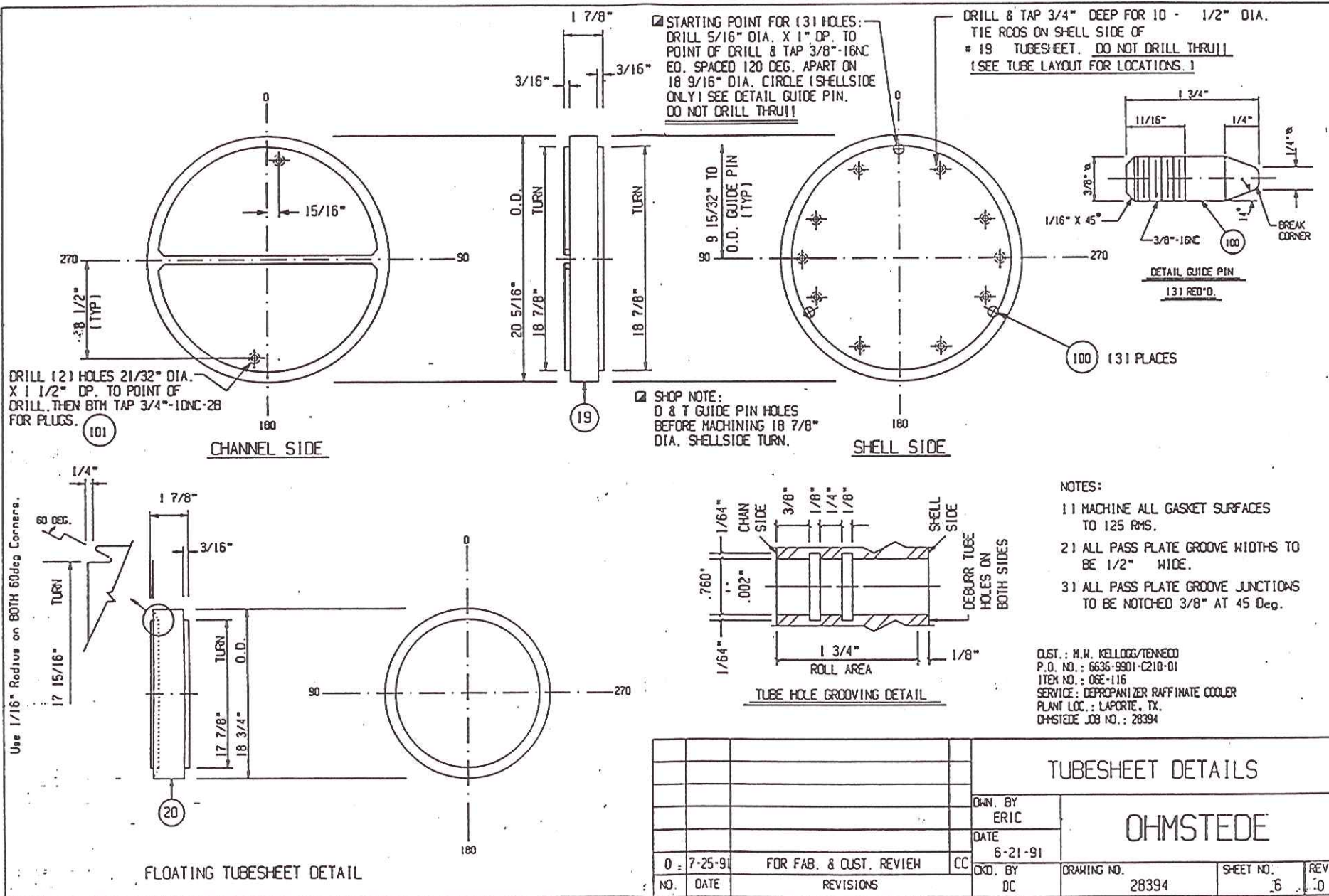
SHELL CVR. SIDE VIEW

NOTES:

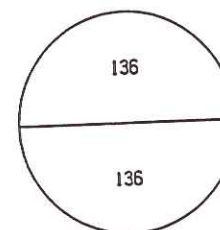
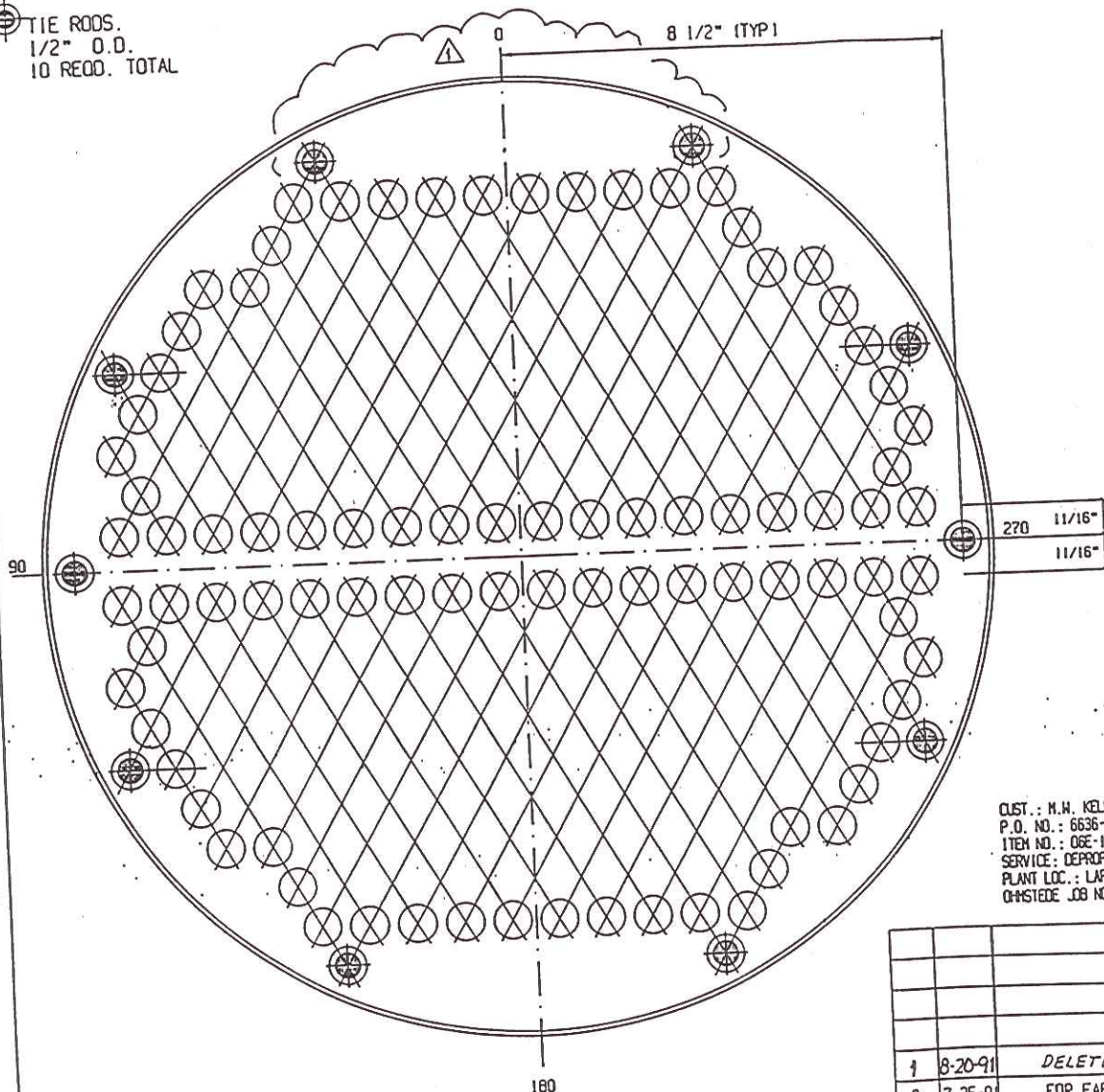
- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/PI-1, #A/PI-1, M3TR.
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28394 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) GRIND ALL INSIDE WELOS FLUSH.
- 5) FULL RADIOGRAPHY. (RT-1)

CUST.: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: OGE-116
SERVICE: DEPROPANIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

				SHELL COVER DETAILS				
				OWN. BY ERIC	OHMSTEDE			
				DATE 6-21-91				
0	7-25-91	FOR FAB. & CUST. REVIEW	CC	OKD. BY DC	DRAWING NO. 28394	SHEET NO. 5	REV. 0	
NO.	DATE	REVISIONS						



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



TUBE DISTRIBUTION

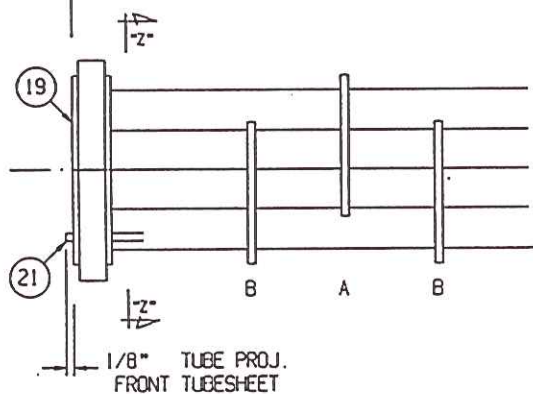
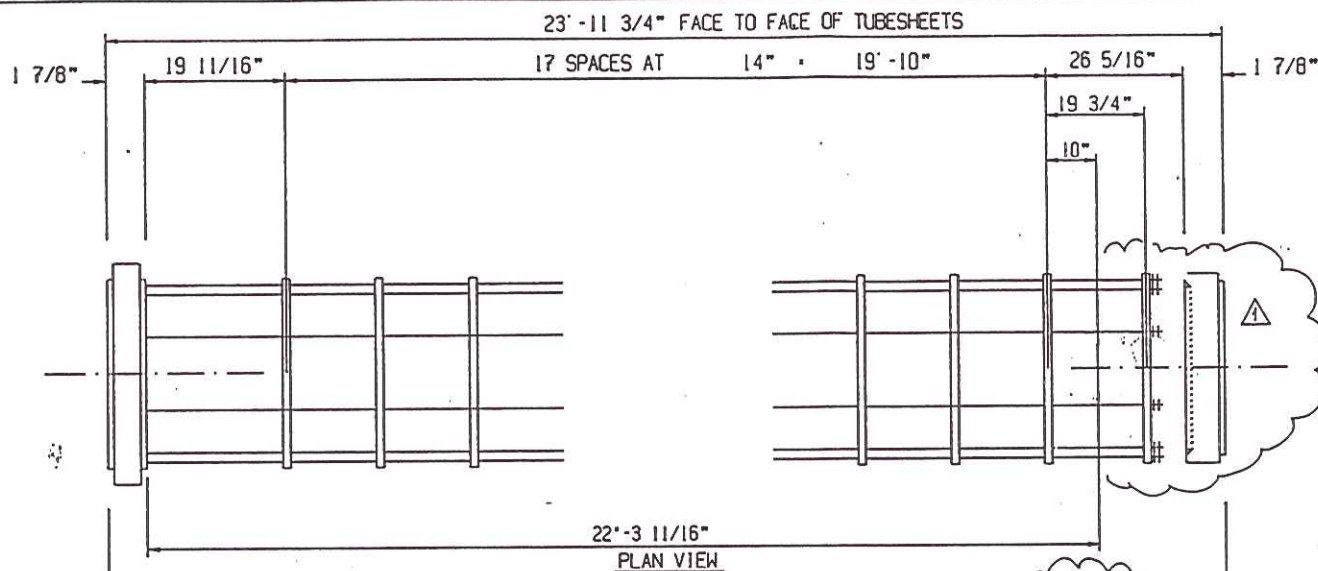
NOTES:

- 1) DRILL AND REAM TUBE HOLES IN TUBESHEETS TO .7600" $\pm$.002" DIA. FOR 272 - 3/4" O.D. TUBES.
- 2) TUBE PITCH = 15/16" TRIANGLE.
- 3) NUMBER OF PASSES = 2
- 4) SEE DRAWING 28394 SHT. #6 FOR TUBE HOLE GROOVING DETAILS.
- 5) BAFFLE O.D. = 18 13/16"
- 6) O.T.L. = 17 7/16"

CUST.: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: 06E-116
SERVICE: DEPROPANIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

VIEW LOOKING AT SHELL SIDE OF NO. 19 TUBESHEET

TUBE LAYOUT			
		OWN. BY ERIC	OHMSTEDE
1	8-20-91	DATE 6-21-91	
0	7-25-91	CHK. BY DC	DRAWING NO. 28394
NO.	DATE	REVISIONS	SHEET NO. 7
			REV. 1

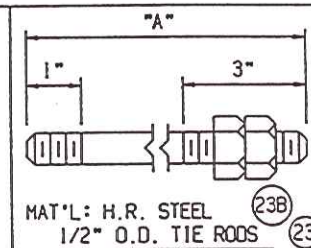


ELEVATION VIEW

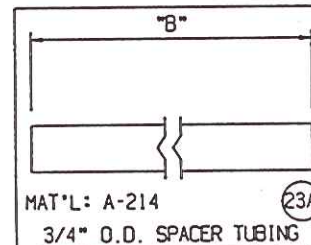
CUST.: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: 06E-116
SERVICE: DEPROPANIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

NOTES:

1) SEE DWG. NO. 28394 SHT.#9 FOR SECTION AND VIEW DETAILS.

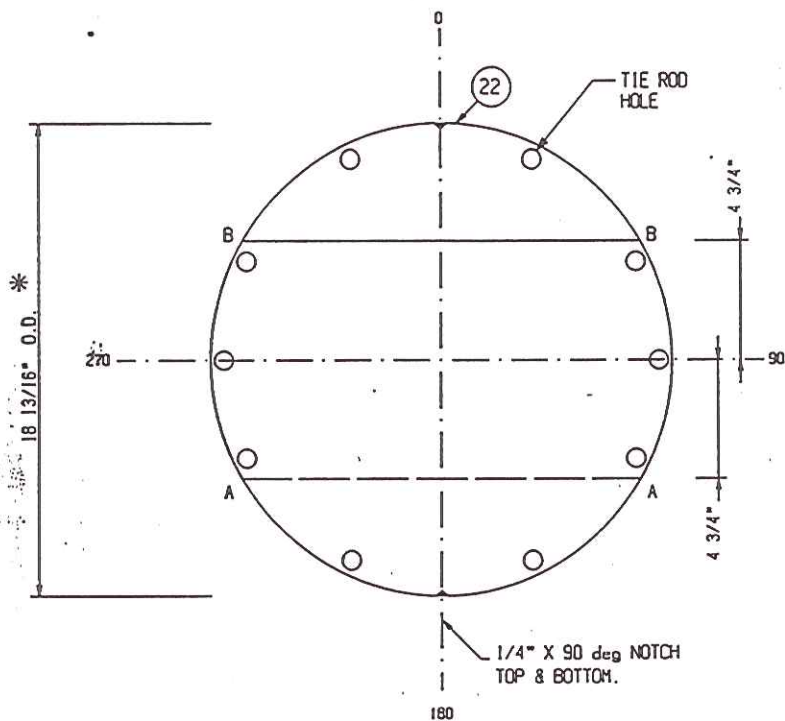


REQ'D.	"A"
10	23' - 4"



REQ'D.	"B"
8	19 1/2"
2	33 1/2"
102	13 5/8"
32	27 5/8"
8	19 5/16"
2	33 5/16"

BUNDLE DETAILS			
		OWN. BY ERIC	
		DATE 6-21-91	
		CHKD. BY DC	
NO.	DATE	REVISIONS	
1	8-20-91	DELETED IMP. PLATE	CC
0	7-25-91	FOR FAB. & CUST. REVIEW	CC
OHMSTEDE			
DRAWING NO. 28394		SHEET NO. 8	REV. 1

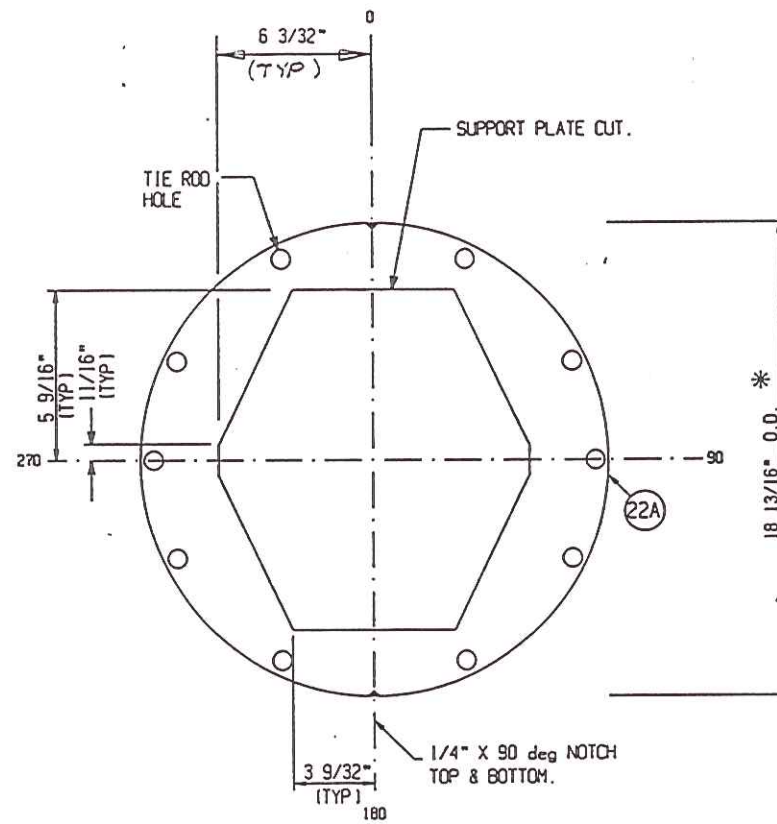


VIEW ZZ OF BAFFLES

3/8" THK.

9 -REQ'D. CUTBB

9 -REQ'D. CUTAA



VIEW XX OF SUPT. PL.

1/2" THK.

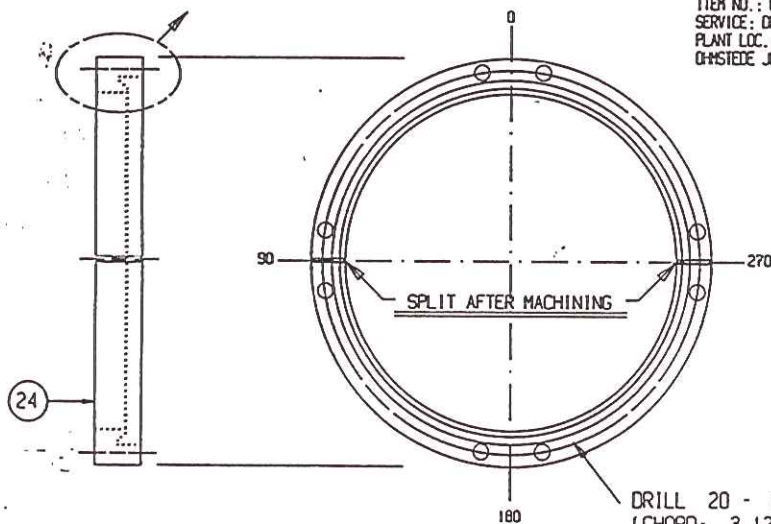
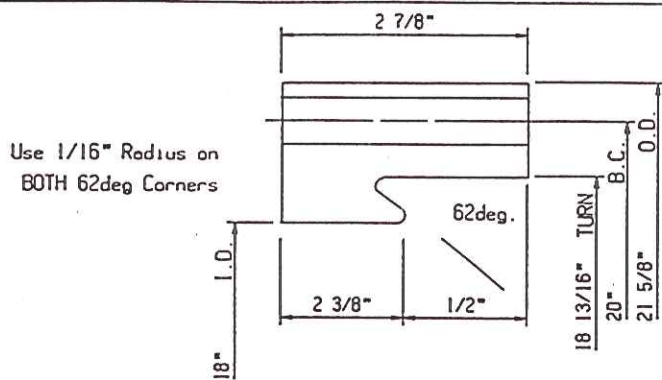
1-REQ'D.

CUST.: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: 06E-116
SERVICE: DEPROPANIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

NOTES:

- 1) DRILL TUBE HOLES IN BAFFLES 25/32" DIA. & DEBURR.
- 2) DRILL TIE ROD HOLES 9/16" DIA.
SEE TUBE LAYOUT FOR LOCATION.
- 3) RADIUS ALL CORNERS ON BAFFLE CUTS.
- * 4) CHECK SHELL I.D. BEFORE MACHINING BAFFLE O.D.
- 5) MACHINE O.D. OF BAFFLES TO 250 RMS.

BAFFLE DETAILS					
			OWN. BY	OHMSTEDE	
			ERIC		
			DATE		
			6-21-91		
			CKD. BY	DRAWING NO.	SHEET NO.
			DC	28394	9
			REV.		
			0		



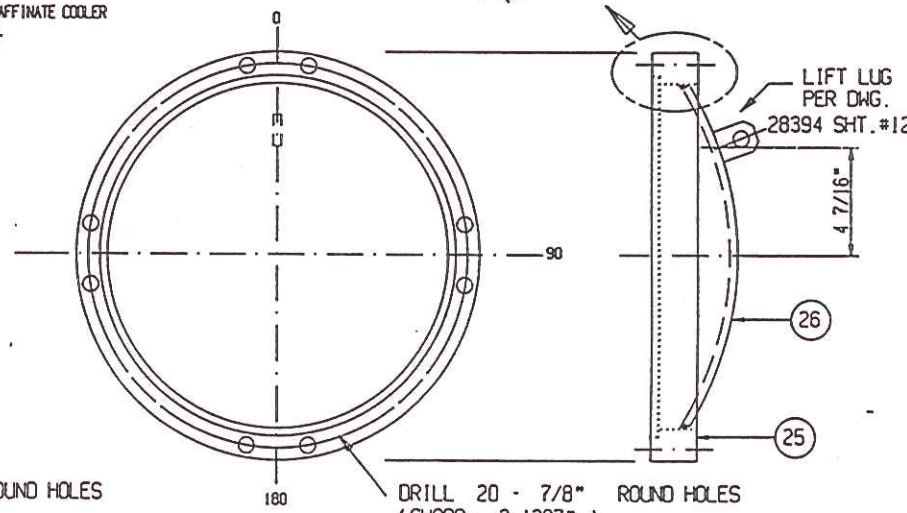
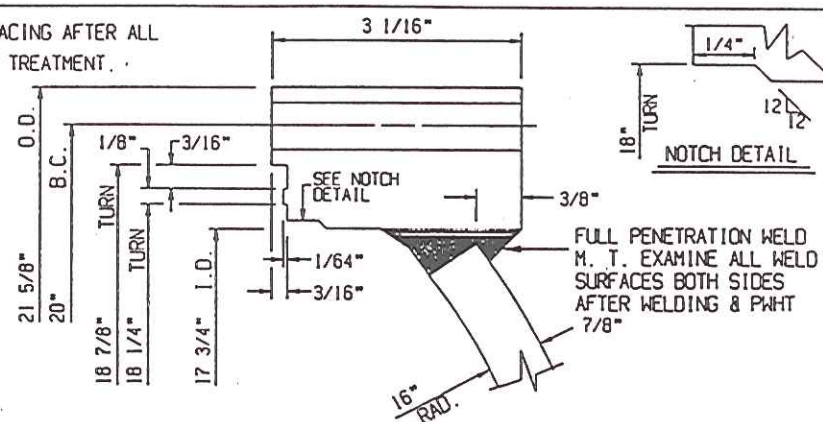
CUST.: M.W. KELLOGG/TENNECO
P.O. NO.: 6636-9901-C210-01
ITEM NO.: OGE-116
SERVICE: DEPROPANIZER RAFFINATE COOLER
PLANT LOC.: LAPORTE, TX.
OHMSTEDE JOB NO.: 28394

DRILL 20 - 7/8" (CHORD - 3.1287")

ROUND HOLES

(47) (48) BOLTING

MACHINE GASKET FACING AFTER ALL WELDING AND HEAT TREATMENT.



DRILL 20 - 7/8" (CHORD - 3.1287")

ROUND HOLES

(47) (48) BOLTING

NOTES:

BACK - UP RING

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #P1-1HT, #SUB-16HT
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28394 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) MACHINE ALL GASKET SURFACES TO 125 RMS
- 5) POST-WELD HEAT TREAT FLTG. HEAD COVER:

- A) HEAT FROM 800 deg.F TO 1100 deg.F AT 400 deg.F PER HOUR
- B) HOLD AT 1100 deg.F FOR 1.00 HOUR (MIN).
- C) COOL FROM 1100 deg.F TO 800 deg.F AT 500 deg.F PER HOUR
- D) FURTHER COOLING MAY BE IN STILL AIR.
- E) AN OVEN RECORDING CHART IS REQUIRED.

FLOATING HEAD COVER

FLOATING HEAD COVER & BACK UP RING DETAILS

OHMSTEDE

			OWN. BY			
			ERIC			
			DATE			
			6-21-91			
			OKD. BY			
			DC			
0	7-25-91	FOR FAB. & CUST. REVIEW	CC	DRAWING NO.	SHEET NO.	REV.
				28394	10	0