

**FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS**  
as required by the provisions of the ASME Code rules, Section VIII, Division 1

06E108

1. Manufactured and certified by OHMSTEDE, INC. - LAPORTE PLANT 12415 LAPORTE RD. LAPORTE, TX 77571  
(name and address of manufacturer)
2. Manufactured for M.W. KELLOGG / TENNECO OIL CO. P.O. BOX 1307 LAPORTE, TX 77572-1307  
(name and address of purchaser)
3. Location of installation TENNECO OIL CO. 1200 N. BROADWAY LAPORTE, TX 77571  
(name and address)
4. Type: HORIZ. HT. EXCH. 28388 N/A 28388 160 1991  
(horiz. or vert., tank) (mfr's. serial no.) (CRN) (drawing no.) (Nat'l. Bd. no.) (year built)
5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction and workmanship conform to ASME Code, Section VIII, Division 1: 1989  
(year)
- 1989A N/A N/A  
(addenda (Date)) (Code Case no.) (special service per UG-120(d))

Items 6-11 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA106B .3750" .125" 1' - 11 1/4" 22' - 7 11/16"  
(mat'l. (spec. no., grade)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))
7. Seams: N/A (SMLS) N/A 100% N/A \* N/A DBL-BUTT FULL 2  
(long. (dbl., sngl.)) (RT (spot or full)) (eff. (%)) (HT temp. (\*F)) (time) (girth (dbl., sngl.)) (RT (spot, partial, or full)) (no. of courses)
8. Heads: (a) SHELL COVER CYL: SA516-70 (b) ELLIPTICAL HEAD: SA516-70  
(mat'l. (spec. no., grade)) (mat'l. (spec. no., grade))

|     | Location (top, bottom, ends) | Minimum Thickness | Corrosion Allowance | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure (convex or concave) |
|-----|------------------------------|-------------------|---------------------|--------------|----------------|------------------|--------------------|----------------------|---------------|--------------------------------------|
| (a) | N/A                          |                   |                     |              |                |                  |                    |                      |               |                                      |
| (b) | END                          | 3/8"              | 1/8"                |              |                | 2:1              |                    |                      |               | CONCAVE                              |

If removable, bolts used (describe other fastenings): (28) 3/4" SA193-B7 STUDS WITH (2) SA194-2H NUTS EACH.  
(mat'l., spec. no., gr., size, no.)

9. Type of jacket: N/A Proof test: \_\_\_\_\_
10. Jacket closure: N/A If bar, give dimensions: \_\_\_\_\_ If bolted, describe or sketch.  
(describe as ogee & weld, bar, etc.)
11. MAWP: 225 at max. temp. 300° Min design metal temp.: 10° at 225 Hydro. XXXXXXX test pressure 338  
(psi) (\*F) (\*F) (psi) (psi)

Items 12 and 13 to be completed for tube sections.

12. Tubesheets: SA350-LF2 23 1/8" 1 7/8" 1/8" BOLTED  
(stationary mat'l. (spec. no., gr.)) (dia. (in.) (subject to pressure)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment (welded, bolted))
- SA350-LF2 23" 1 7/8" 1/8" ROLLED TO TUBES  
(floating mat'l. (spec. no., gr.)) (dia. (in.)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment)
13. Tubes: SA214 3/4" .083" MW 426 STRAIGHT  
(mat'l. (spec. no., gr.)) (OD (in.)) (nom. thickness (in. or gauge)) (no.) (type (straight or U))

Items 14-17 inclusive to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell: SA106B .3750" .125" 1' - 11 1/4" 1' - 4 11/16"  
(mat'l. (spec. no., grade)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))
15. Seams: N/A (SMLS) N/A 100% N/A \* N/A DBL-BUTT SPOT 1  
(long. (dbl., sngl.)) (RT (spot or full)) (eff. (%)) (HT temp. (\*F)) (time) (girth (dbl., sngl.)) (RT (spot, partial, or full)) (no. of courses)
16. Heads: (a) CHANNEL COVER: SA350-LF2 (b) N/A  
(mat'l. (spec. no., grade)) (mat'l. (spec. no., grade))

|     | Location (top, bottom, ends) | Minimum Thickness | Corrosion Allowance | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure (convex or concave) |
|-----|------------------------------|-------------------|---------------------|--------------|----------------|------------------|--------------------|----------------------|---------------|--------------------------------------|
| (a) | END                          | 2"                | 1/8"                |              |                |                  |                    |                      | 28 1/8"       | FLAT                                 |
| (b) | N/A                          |                   |                     |              |                |                  |                    |                      |               |                                      |

If removable, bolts used (describe other fastenings): (24) 3/4" SA193-B7 STUDS WITH (2) SA194-2H NUTS EACH.  
(mat'l., spec. no., gr., size, no.)

17. MAWP: 155 at max. temp. 550° Min design metal temp.: 10° at 155 Hydro. XXXXXXX test pressure 233  
(psi) (\*F) (\*F) (psi) (psi)

## FORM U-1 (back)

18. Nozzles, inspection and safety valve openings: PER UG 125 NOTE 39

| Purpose (inlet, outlet, drain, etc.) | Number | Dia. or Size | Type  | Mat'l.    | Nom. Thickness | Reinforcement Material | How Attached | Location |
|--------------------------------------|--------|--------------|-------|-----------|----------------|------------------------|--------------|----------|
| INLET                                | 1      | 6" 150LB     | RFLWN | SA350-LF2 | .875"          | INTEGRAL               | WELDED       | SHELL    |
| OUTLET                               | 1      | 6" 150LB     | RFLWN | SA350-LF2 | .875"          | INTEGRAL               | WELDED       | SHELL    |
| INLET                                | 1      | 8" 150LB     | RFWN  | SA106B    | .500"          | INTEGRAL               | WELDED       | CHANNEL  |
| OUTLET                               | 1      | 8" 150LB     | RFWN  | SA106B    | .500"          | INTEGRAL               | WELDED       | CHANNEL  |
| VENT, DRAIN                          | 1 EA.  | 1"6000LB     | CPLG  | SA105     | ---            | INTEGRAL               | WELDED       | SHELL    |
|                                      |        |              |       |           |                |                        |              |          |
|                                      |        |              |       |           |                |                        |              |          |
|                                      |        |              |       |           |                |                        |              |          |
|                                      |        |              |       |           |                |                        |              |          |
|                                      |        |              |       |           |                |                        |              |          |
|                                      |        |              |       |           |                |                        |              |          |
|                                      |        |              |       |           |                |                        |              |          |

19. Supports: Skirt NO Lugs 4 Legs N/A Other (2) HORIZ. SUPPORTS Attached WELDED TO SHELL  
(yes or no) (no.) (no.) (describe) (where and how)

20. Remarks: Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: \* PWHT OF FLOATING HEAD COVER ONLY PER UCS-56.  
(name of part, item number, mfr's. name and identifying stamp)

MINIMUM DESIGN METAL TEMPERATURE PER UG-20.

ROLLED AND WELDED CYLINDER MANUFACTURED BY OHMSTEDE, INC. - LAKE CHARLES UNDER  
 AUTHORIZATION # 17397 AND SERIAL # 28388-1.

CUSTOMER ITEM # 06E-108

## 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. 18673 expires JUNE 27, 19 92

Date 9-30-91 Name OHMSTEDE, INC. - LAPORTE PLANT

(manufacturer)

Signed

(representative)

## CERTIFICATE OF SHOP INSPECTION

Vessel constructed by OHMSTEDE, INC. at LAPORTE, TX

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 Manufacturers' Data Report on 9-30, 19 91, 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 the Manufacturers' 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 9-30-91 Signed [Signature] Commissions NB 9263

(Authorized Inspector)

(Nat'l. Bd. (incl. endorsements) state, prov. and no.)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME BOILER AND PRESSURE VESSEL CODE.

"U" Certificate of Authorization no. \_\_\_\_\_ expires \_\_\_\_\_, 19 \_\_\_\_\_

Date \_\_\_\_\_ Name \_\_\_\_\_

(assembler that certified and constructed field assembly)

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 Manufacturers' 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 that 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.

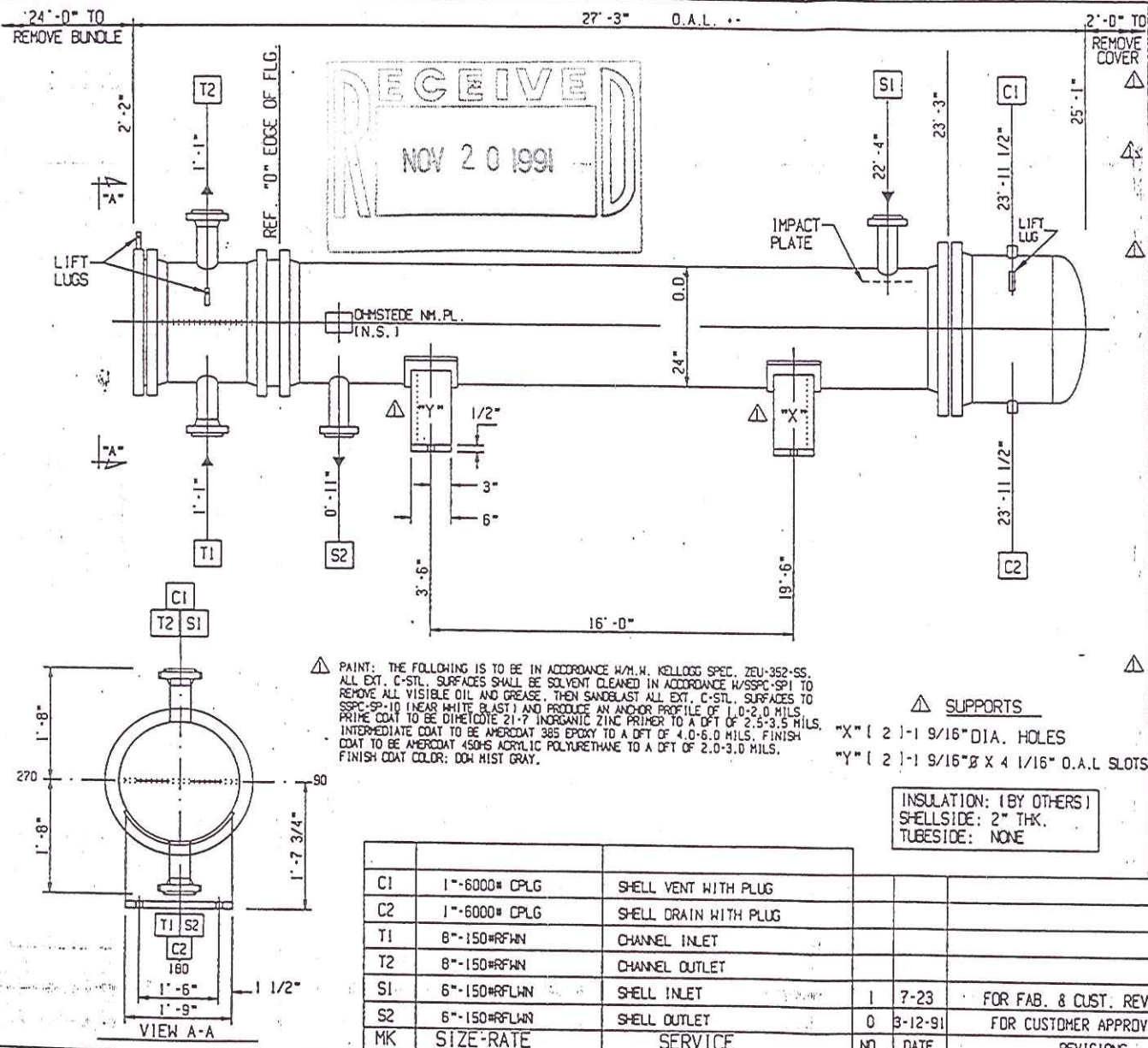
By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in the Manufacturers' Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date \_\_\_\_\_ Signed \_\_\_\_\_ Commissions \_\_\_\_\_

(Authorized Inspector)

(Nat'l. Bd. (incl. endorsements) state, prov. and no.)

# PRELIMINARY



| DESIGN DATA                                              |                    | SHELL                     | TUBE        |
|----------------------------------------------------------|--------------------|---------------------------|-------------|
| DESIGN PRESSURE P.S.I.G.                                 |                    | 225                       | 150/FV      |
| TEST PRESSURE P.S.I.G. SHOP/FIELD                        |                    | 350/338                   | 302/233     |
| DESIGN TEMPERATURE DEG. F./MONT/MIN                      |                    | 300/ 10                   | 550/ 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: 14000                                               | BUNDLE: 8000       | NET: 18000                |             |
| SPECIFICATIONS                                           |                    |                           |             |
| ASME CODE SECTION VIII DIV. 1 STAMP YES                  |                    | M.W. KELLOGG SPECS:       |             |
| TEMA CLASS R                                             |                    | C41-1E-6636, 4-77S-6635   |             |
| NATIONAL BOARD REGISTRATION REQUIRED                     |                    | 9-4S-6636, 06E-108-1FCCS  |             |
| * HEAT TREATMENT—FLOATING HEAD ONLY                      |                    | P42-ITS-6636, HIT-2S-89   |             |
| MATERIAL                                                 |                    |                           |             |
| CHANNEL:                                                 | SA-106-B           | FLOATING HEAD: SA-516-70- |             |
| SHELL:                                                   | SA-106-B/SA-516-70 | NORM                      |             |
| TUBESHEETS:                                              | SA-350-LF2         |                           |             |
| BAFFLES:                                                 | SA36               |                           |             |
| TUBES:                                                   | SA-214             |                           |             |
| ( 426 1 3/4" O.D. X .083" MIN.                           |                    | X 24'-0"                  | LG.         |
| TUBE PITCH 15/16" Δ                                      |                    | SURFACE 1980 SQ. FT.      |             |
| GENERAL NOTES                                            |                    |                           |             |
| ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.         |                    |                           |             |
| MAX. ALLOWABLE PRESSURE:                                 |                    |                           |             |
| SHELLSIDE:                                               |                    |                           |             |
| MAWP (HOT & CORR.) = 225 PSIG LIM. BY SHELL FLANGE       |                    |                           |             |
| MAP (N & C) = 233 PSIG LIM. BY SHELL FLANGE              |                    |                           |             |
| TUBESIDE:                                                |                    |                           |             |
| MAWP (HOT & CORR.) = 155 PSIG LIM. BY CHANNEL FLANGE     |                    |                           |             |
| MAP (N & C) = 201 PSIG LIM. BY CHANNEL COVER             |                    |                           |             |
| MINIMUM DESIGN METAL TEMP. = +10°F                       |                    |                           |             |
| GASKETS: .1250" THK. AIDNAP                              |                    |                           |             |
| FLTG. HD GASKET: .0626" THK. SOFT IRON (120 MAX. BRINELL |                    |                           |             |
| 2 SETS OF SPARE GASKETS REQUIRED. HARDNESS)              |                    |                           |             |
| CUST: M.W. KELLOGG/TENNECO                               |                    | CERTIFIED MH              |             |
| P.O. NO.: 6636-9901-C210-01                              |                    |                           |             |
| ITEM NO.: 06E-108                                        |                    | DATE 7/23/91              |             |
| SERVICE: MTBE PRODUCT COOLER                             |                    |                           |             |
| SHIP TO: LAPORTE, TX.                                    |                    |                           |             |
| OHMSTEDE JOB NO.: 28388                                  |                    |                           |             |
| ASSEMBLY AND SPECIFICATIONS FOR                          |                    |                           |             |
| ONE 23-288 A E S                                         |                    |                           |             |
| OWN. BY GEO                                              |                    | OHMSTEDE                  |             |
| DATE 3-5-91                                              |                    |                           |             |
| DOW. BY DC                                               |                    | DRAWING NO. 28388         |             |
|                                                          |                    | SHEET NO. 1               |             |
|                                                          |                    | REV. 1                    |             |

| C1 | 1"-6000" CPLG | SHELL VENT WITH PLUG  |     |         |                         |  |  |  |  |
|----|---------------|-----------------------|-----|---------|-------------------------|--|--|--|--|
| C2 | 1"-6000" CPLG | SHELL DRAIN WITH PLUG |     |         |                         |  |  |  |  |
| T1 | 8"-150#RFLWN  | CHANNEL INLET         |     |         |                         |  |  |  |  |
| T2 | 8"-150#RFLWN  | CHANNEL OUTLET        |     |         |                         |  |  |  |  |
| S1 | 6"-150#RFLWN  | SHELL INLET           | 1   | 7-23    | FOR FAB. & CUST. REVIEW |  |  |  |  |
| S2 | 6"-150#RFLWN  | SHELL OUTLET          | 0   | 3-12-91 | FOR CUSTOMER APPROVAL   |  |  |  |  |
| MK | SIZE-RATE     | SERVICE               | NO. | DATE    | REVISIONS               |  |  |  |  |

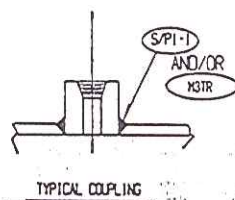
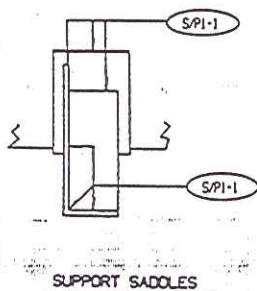
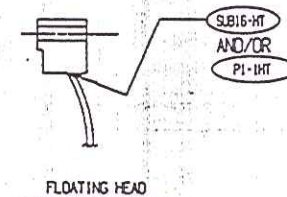
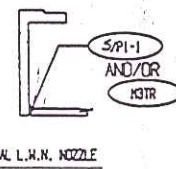
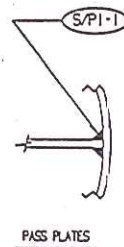
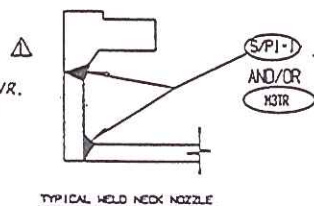
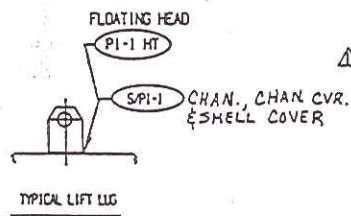
A/P1-1  
AND/OR  
S/P1-1

A/P1-1  
AND/OR  
S/P1-1

A/P1-1  
AND/OR  
S/P1-1

PRELIMINARY

NOV 20 1991



CUST: M.W. KELLOGG/TENNECO  
P.O. NO.: 6636-9901-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388

WELD MAP

OHMSTEDE

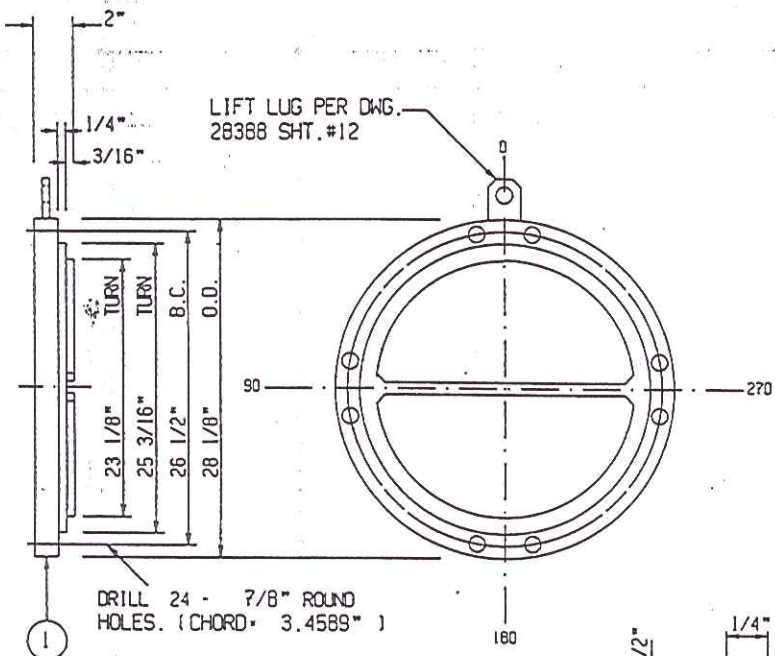
| NO. |         |                         | DATE   | REVISIONS | OWN. BY | DATE   | DRAWING NO. | SHEET NO. | REV. |
|-----|---------|-------------------------|--------|-----------|---------|--------|-------------|-----------|------|
| 1   | 7-23    | FOR FAB. & CUST. REVIEW | 3-4-91 |           | GEO     | 3-4-91 | 28388       | 2         | 1    |
| 0   | 3-12-91 | FOR CUSTOMER APPROVAL   |        |           | DC      |        |             |           |      |

# PRELIMINARY

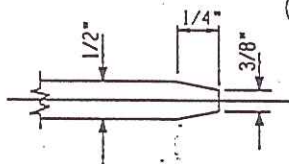
NOV 20 1991

## COVER NOTES:

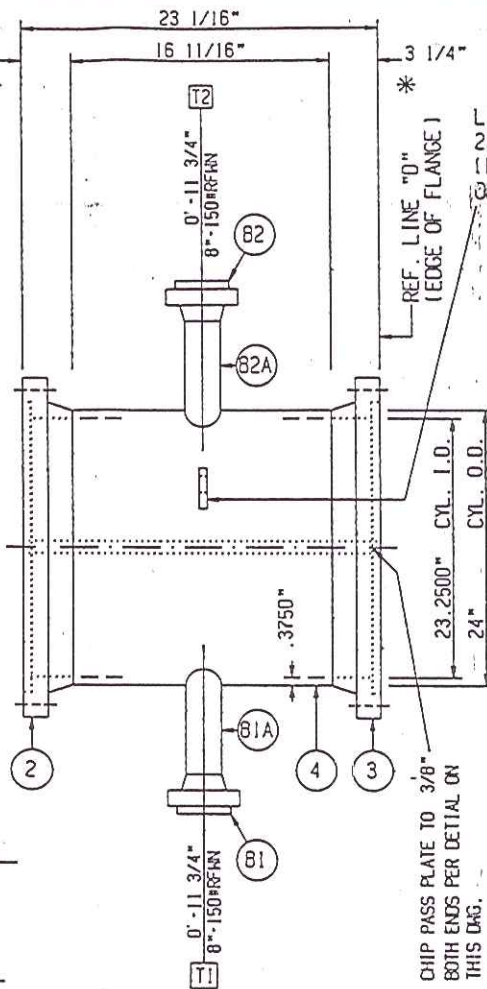
- 1) MACHINE ALL COVER GASKET SURFACES TO 125 RMS
- 2) ALL COVER PASS PLATE GROOVE WIDTHS TO BE 1/2" WIDE.
- 3) ALL COVER PASS PLATE GROOVE JUNCTIONS TO BE NOTCHED 3/8" AT 45 Deg.



CHANNEL-COVER DETAIL



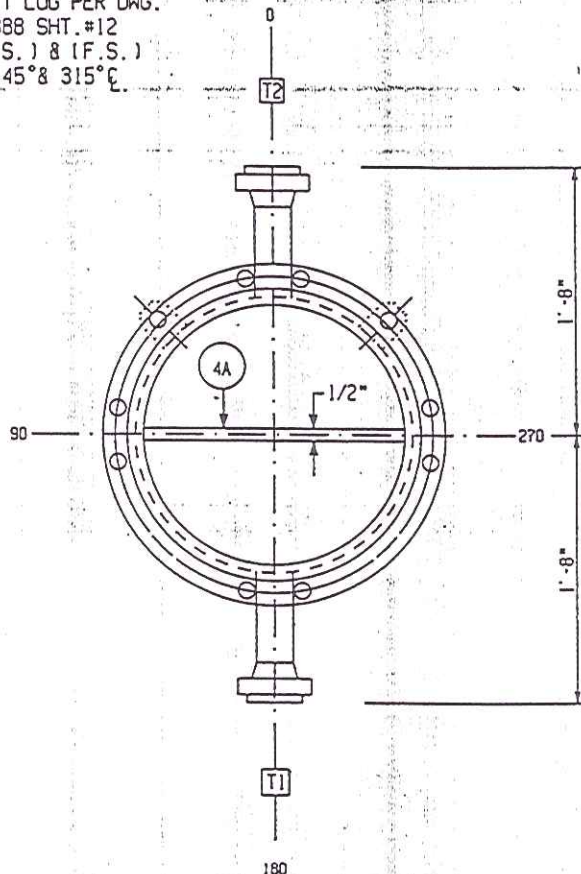
PASS PL. TAPER DETAIL  
(TYPICAL BOTH ENDS)



CHANNEL SIDE VIEW

\* MACHINE GASKET FACING AFTER ALL WELDING.  
FOR FLANGE DETAILS SEE DWG. 28388 SHT. #14

LIFT LUG PER DWG. 28388 SHT. #12  
(N.S.) & (F.S.)  
ON 45° & 315°



CHANNEL END VIEW

## NOTES:

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/P1-1, #A/P1-1, M3TR
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28388 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) SPOT RADIOGRAPHY. (RT-3)

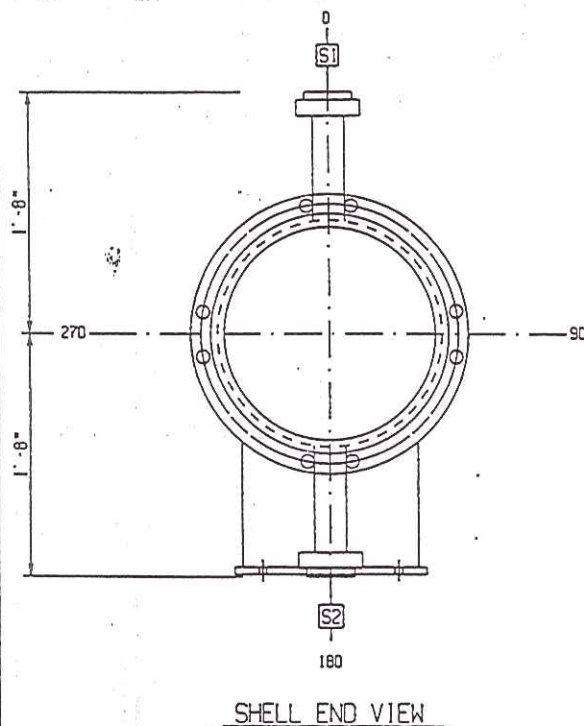
CUST: H.W. KELLOGG/TENNECO  
P.O. NO.: 6636-9901-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388

## FRONT CHANNEL DETAILS

|                                     |  |  |             |         |  |
|-------------------------------------|--|--|-------------|---------|--|
|                                     |  |  | OHMSTEDE    |         |  |
|                                     |  |  | OWN. BY     |         |  |
|                                     |  |  | ERIC        |         |  |
|                                     |  |  | DATE        | 6-17-91 |  |
| 0 7-23 FOR FAB. & CUST. REVIEW C.C. |  |  | CHK. BY     |         |  |
| NO. DATE REVISIONS                  |  |  | DC          |         |  |
|                                     |  |  | DRAWING NO. | 28388   |  |
|                                     |  |  | SHEET NO.   | 3       |  |
|                                     |  |  | REV.        | 0       |  |

FOR FLANGE DETAILS SEE DWG. 28388 SHT. 14 & 14A

NOV 20 1991

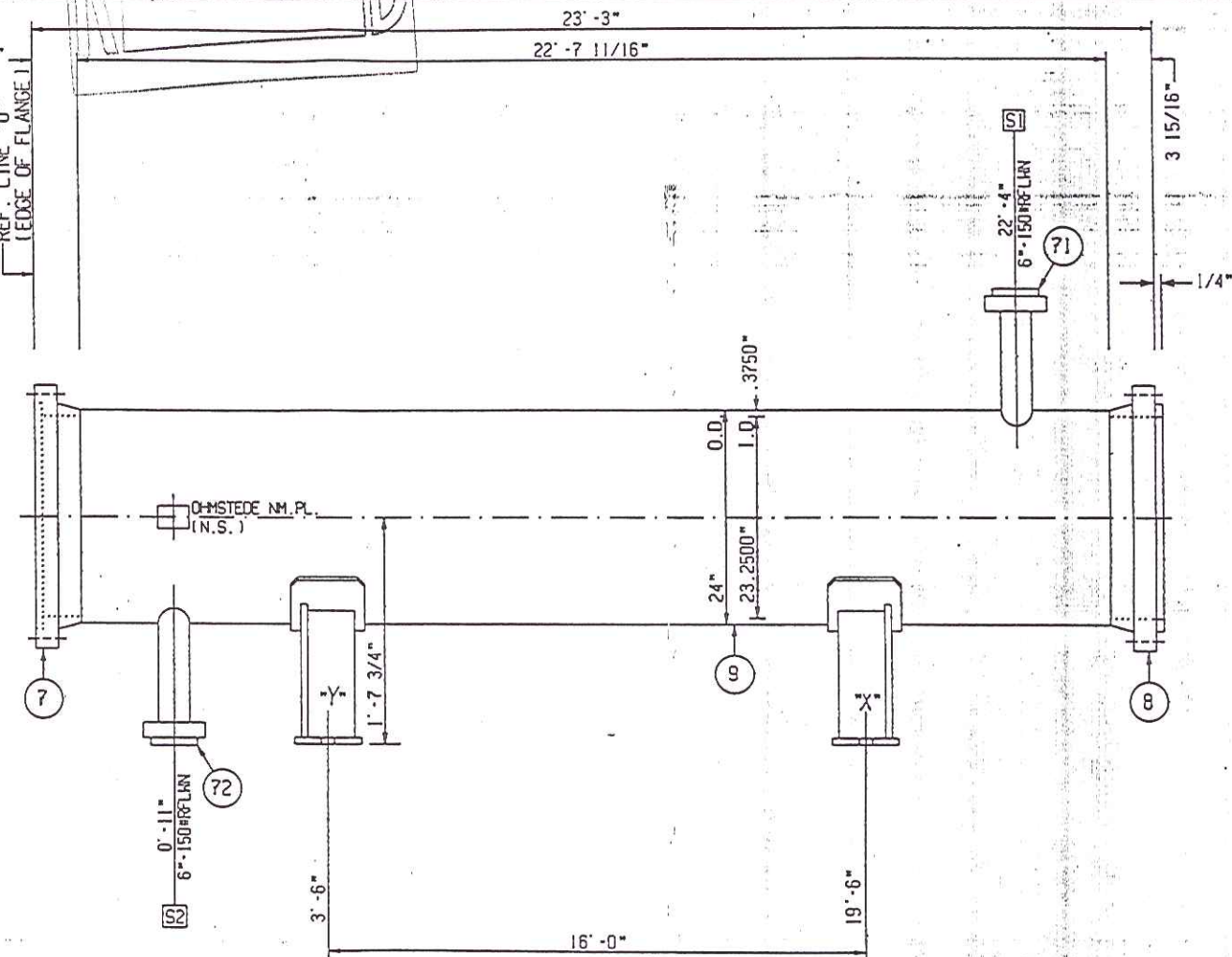


SHELL END VIEW

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. 28388 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) GRIND ALL INSIDE WELDS FLUSH.
- 5) FULL RADIOGRAPHY. (RT-1)

CUST: H.W. KELLOGG/TENNECO  
P.O. NO.: 6636-9901-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388



SHELL SIDE VIEW

SHELL DETAILS

OHMSTEDE

OWN. BY

ERIC

DATE

6-17-91

CHK. BY

DC

DRAWING NO.

28388

SHEET NO.

4

REV.

0

FOR FAB. & CUST. REVIEW C.C.

REVISIONS

NO.

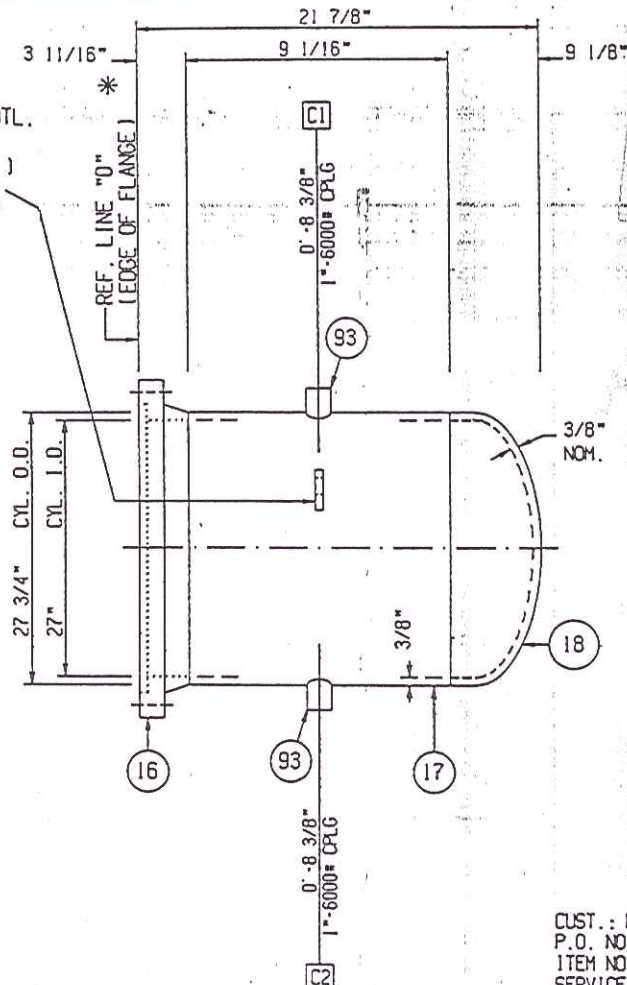
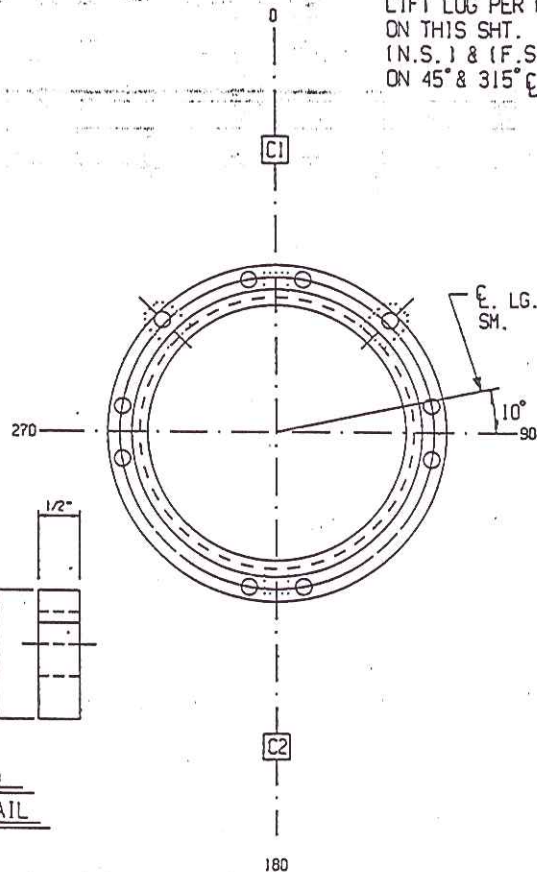
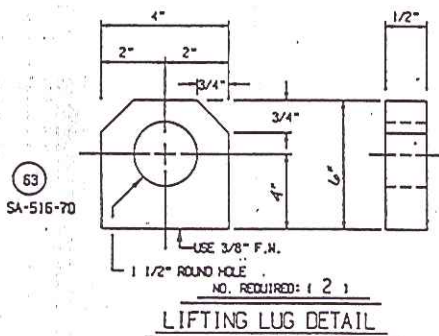
DATE

0

7-23

\* MACHINE GASKET FACING AFTER ALL WELDING.  
FOR FLANGE DETAILS SEE DWG. 28388 SHT. #14A

LIFT LUG PER DTL.  
ON THIS SHT.  
(N.S.) & (F.S.)  
ON 45° & 315° C.



CUST.: H.W. KELLOGG/TENNECO  
P.O. NO.: 6636-9901-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
PLANT LOC.: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388

## NOTES:

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #S/P1-1, #A/P1-1, M3TR
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28388 SHT. #15 FOR WELD & BEVEL DETAILS.
- 4) GRIND ALL INSIDE WELDS FLUSH.
- 5) FULL RADIOGRAPHY. (RT-1)

## SHELL COVER DETAILS

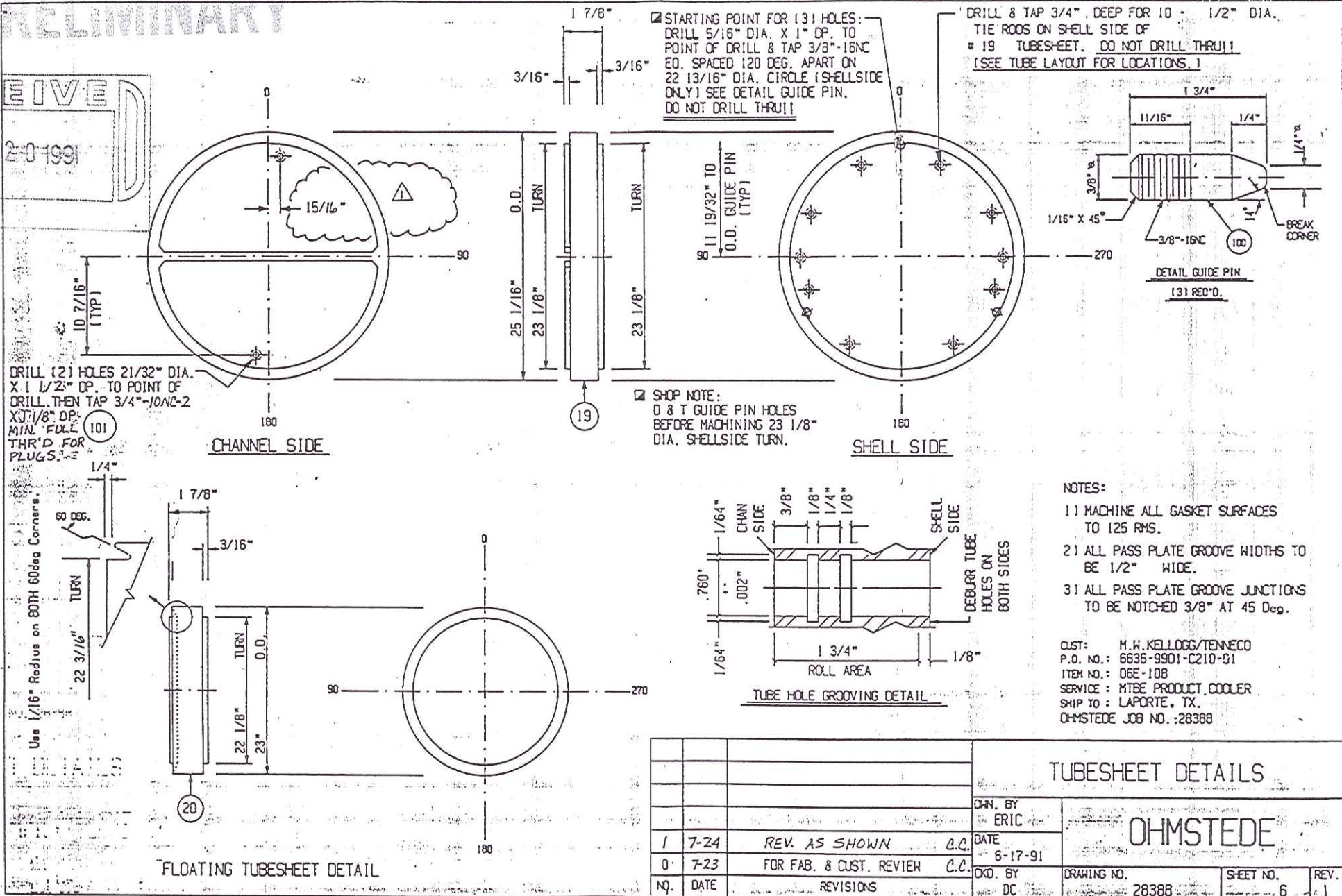
|     |      |                              |                     |                 |                      |                |           |
|-----|------|------------------------------|---------------------|-----------------|----------------------|----------------|-----------|
|     |      |                              | SHELL COVER DETAILS |                 |                      |                |           |
|     |      |                              | OWN. BY<br>TD. ERIC |                 | OHMSTEDE             |                |           |
|     |      |                              | DATE<br>6-17-91     |                 |                      |                |           |
| 0   | 7-23 | FOR FAB. & CUST. REVIEW C.C. |                     |                 |                      |                |           |
| NO. | DATE | REVISIONS                    |                     | CHKD. BY<br>DC. | DRAWING NO.<br>28388 | SHEET NO.<br>5 | REV.<br>0 |

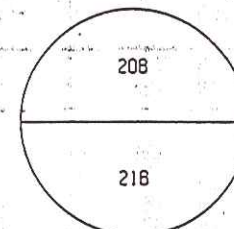
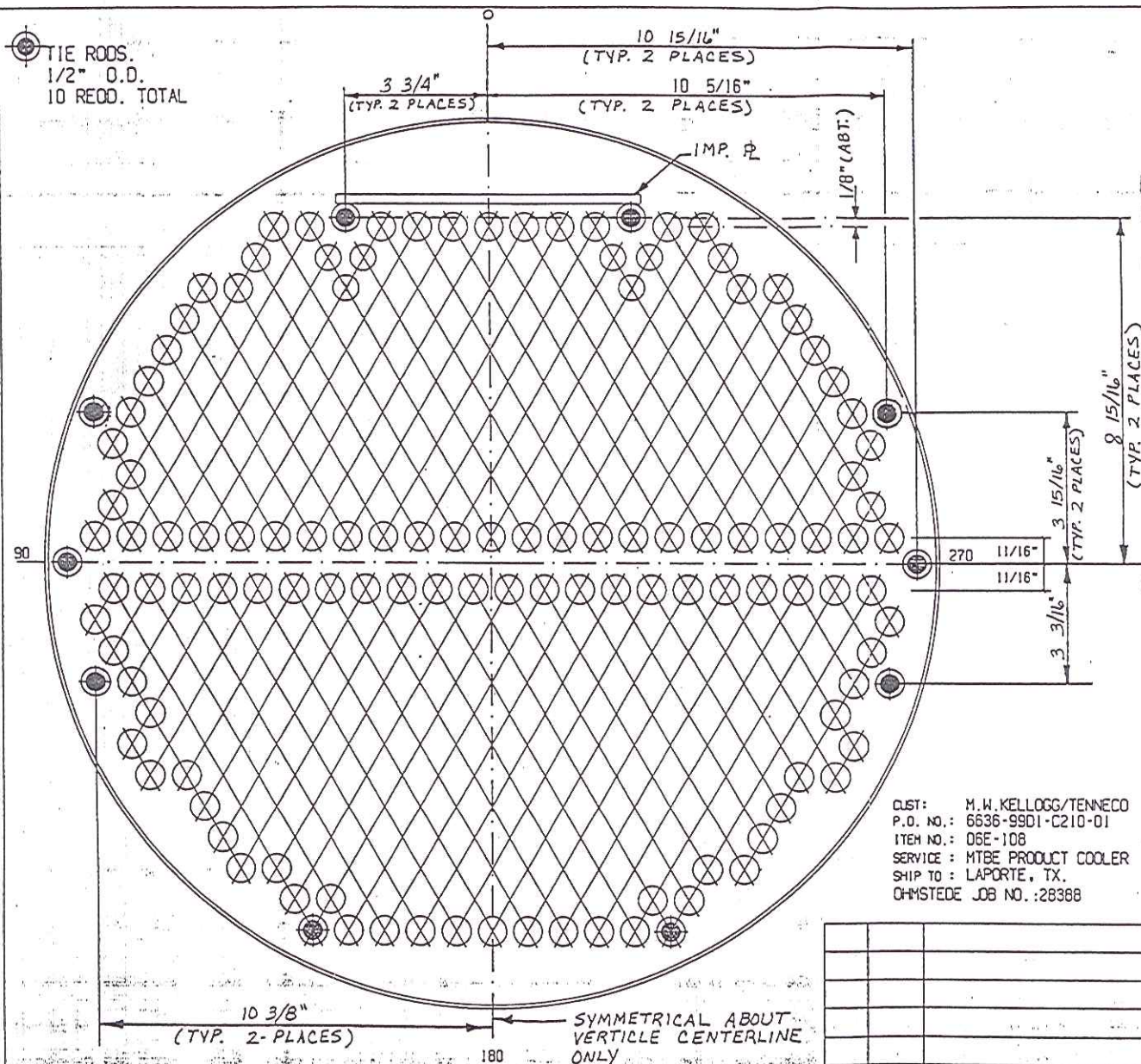


PRELIMINARY

# PRELIMINARY

RECEIVED  
NOV 20 1991





TUBE DISTRIBUTION

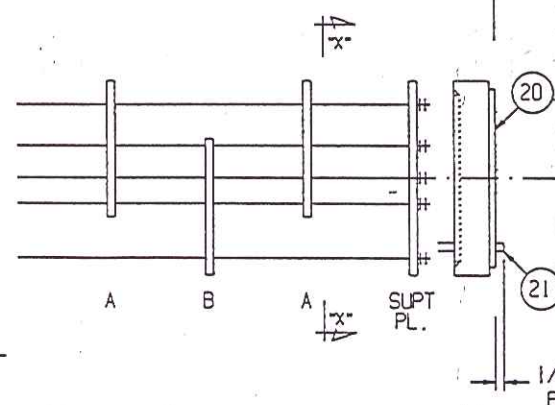
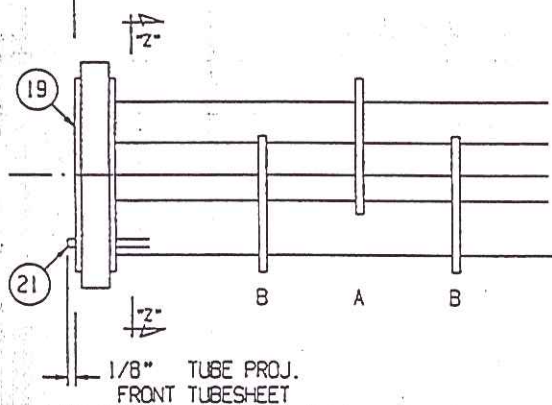
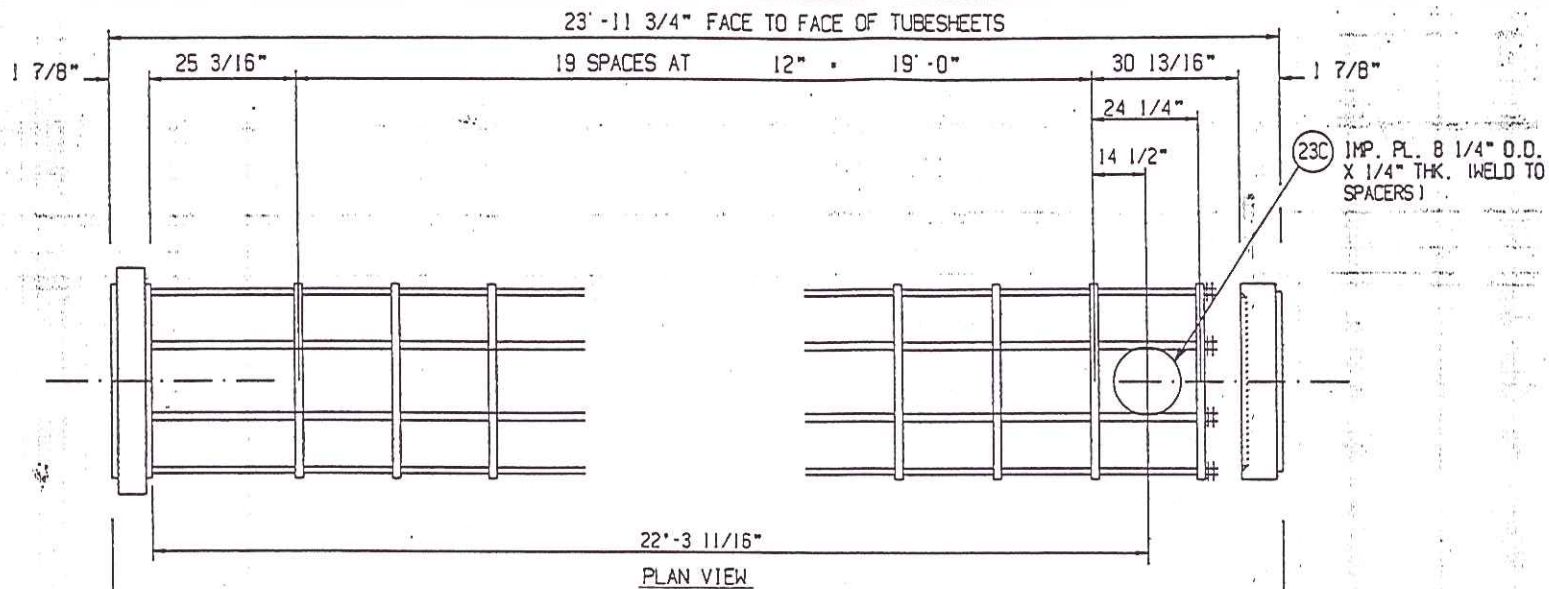
NOTES:

- 1) DRILL AND REAM TUBE HOLES IN TUBESHEETS TO  $.7600" \pm .002"$  DIA. FOR 426 -  $3/4"$  O.D. TUBES.
- 2) TUBE PITCH =  $15/16"$  TRIANGLE.
- 3) NUMBER OF PASSES = 2
- 4) SEE DRAWING 28388 SHT. #6 FOR TUBE HOLE GROOVING DETAILS.
- 5) BAFFLE O.D. =  $23 1/16"$
- 6) O.T.L. =  $21 13/16"$

CUST: M.W. KELLOGG/TENNECO  
P.O. NO.: 6636-99D1-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388

VIEW LOOKING AT SHELL SIDE OF NO. 19 TUBESHEET

| TUBE LAYOUT              |  |             |  |
|--------------------------|--|-------------|--|
| OWN. BY                  |  | DATE        |  |
| ERIC                     |  | 6-17-91     |  |
| DATE                     |  | DRAWING NO. |  |
| 0 7-23                   |  | 28388       |  |
| NO. DATE                 |  | SHEET NO.   |  |
| FOR FAB. & CUSTS. REVIEW |  | 7           |  |
| REVISIONS                |  | REV.        |  |
|                          |  | 0           |  |



"A"

1" 3"

MAT'L: H.R. STEEL  
1/2" O.D. TIE RODS

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

"B"

MAT'L: A-214  
3/4" O.D. SPACER TUBING

| REQ'D. | "B"       |
|--------|-----------|
| 8      | 25"       |
| 2      | 37"       |
| 114    | 11 5/8"   |
| 36     | 23 5/8"   |
| 8      | 23 13/16" |
| 2      | 35 13/16" |

CUST: M.W. KELLOGG/TENNECO  
P.O. NO.: 6636-99D1-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388

NOTES:

1) SEE DWG. NO. 28388 SHT. #9 FOR SECTION AND VIEW DETAILS.

RECEIVED

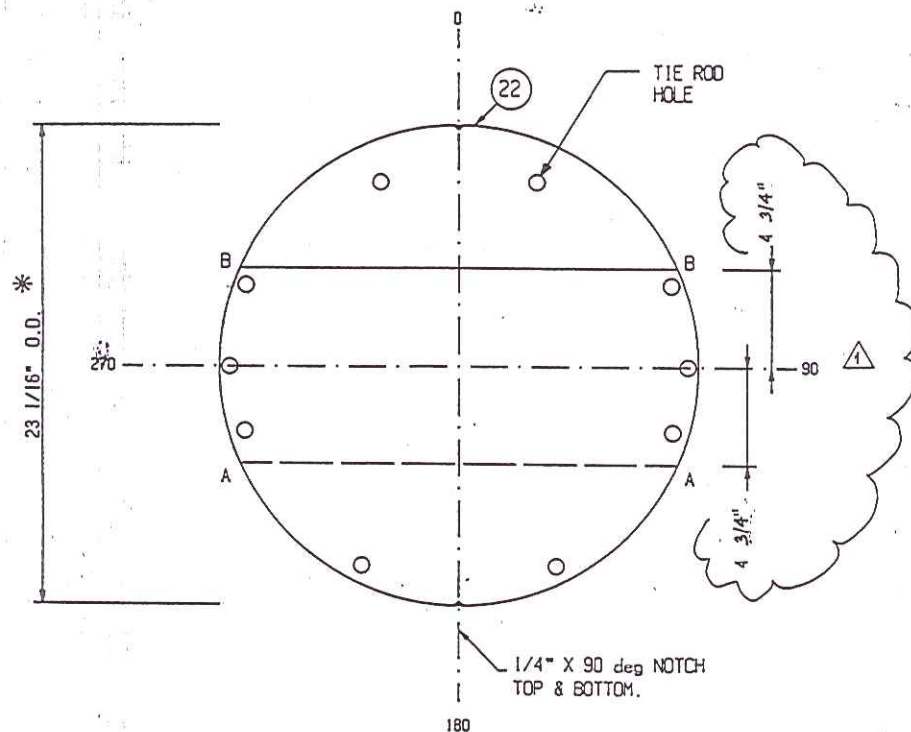
| NO. | DATE | REVISIONS                    |
|-----|------|------------------------------|
| 0   | 7-23 | FOR FAB. & CUST. REVIEW C.C. |

BUNDLE DETAILS

|                 |                      |                |           |
|-----------------|----------------------|----------------|-----------|
| OWN. BY<br>ERIC | OHMSTEDE             |                |           |
| DATE<br>6-17-91 |                      |                |           |
| DRAWN BY<br>DC  | DRAWING NO.<br>28388 | SHEET NO.<br>8 | REV.<br>0 |

# PRELIMINARY

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VIEW ZZ OF BAFFLES

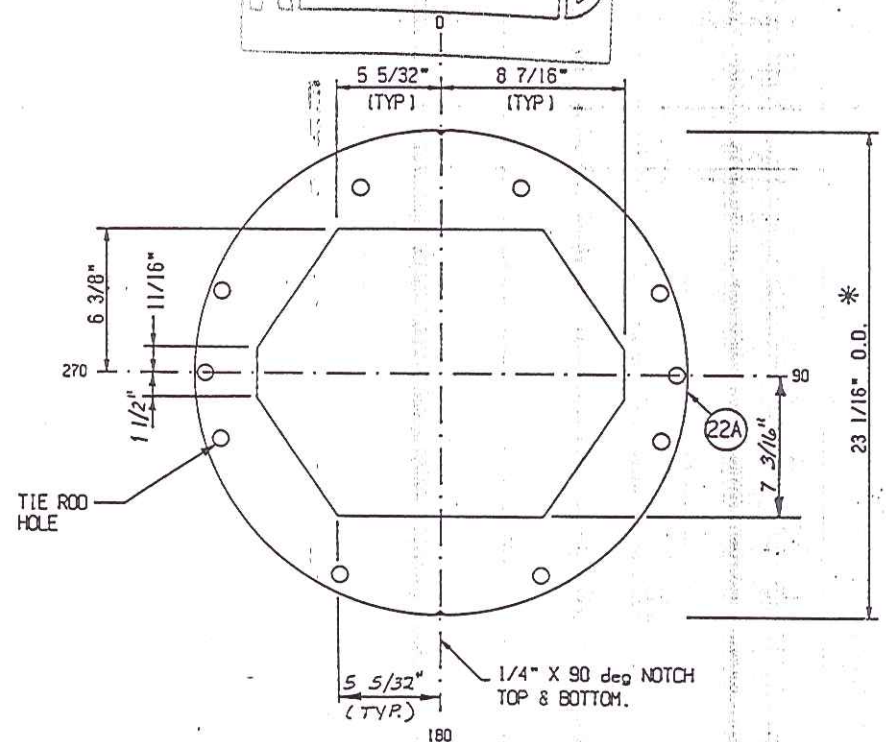
3/8" THK.

10 -REQ'D. CUT BB

10 -REQ'D. CUT AA

## 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.



VIEW XX OF SUPT. PL.

1/2" THK.

1-REQ'D.

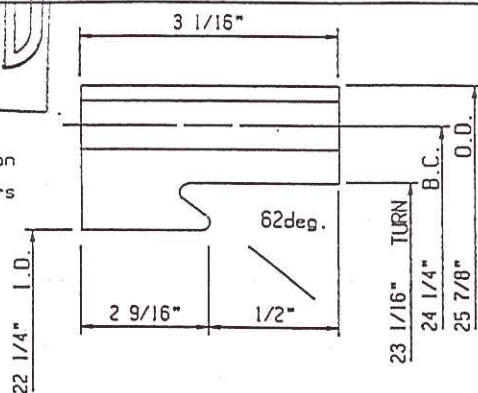
CUST: M.W. KELLOGG/TENNECO  
P.O. NO.: 6636-9901-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28368

## BAFFLE DETAILS

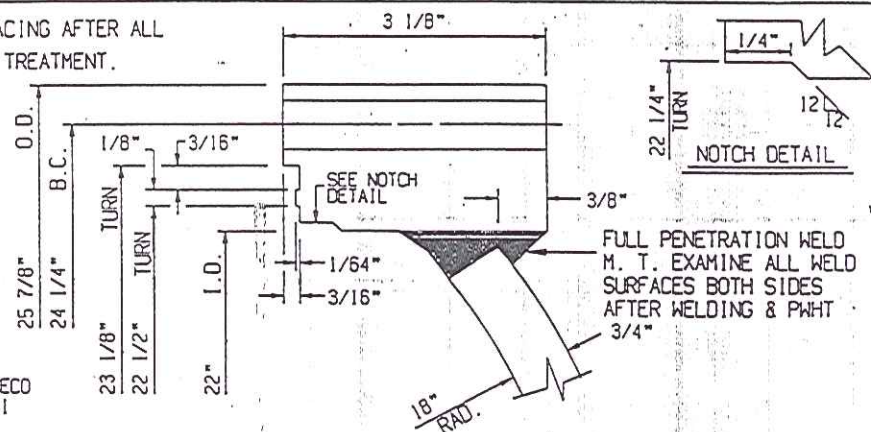
|          |      |                         |              |            |              |  |                   |  |             |  |        |
|----------|------|-------------------------|--------------|------------|--------------|--|-------------------|--|-------------|--|--------|
|          |      |                         | OWN. BY ERIC |            | DATE 6-17-91 |  | DRAWING NO. 28368 |  | SHEET NO. 9 |  | REV. 1 |
| 1        | 8-9  | REV. PER CUSTOMER       | C.C.         |            |              |  |                   |  |             |  |        |
| 0        | 7-23 | FOR FAB. & CUST. REVIEW | C.C.         |            |              |  |                   |  |             |  |        |
| NO. DATE |      | REVISIONS               |              | CND. BY DC |              |  |                   |  |             |  |        |

NOV 20 1991

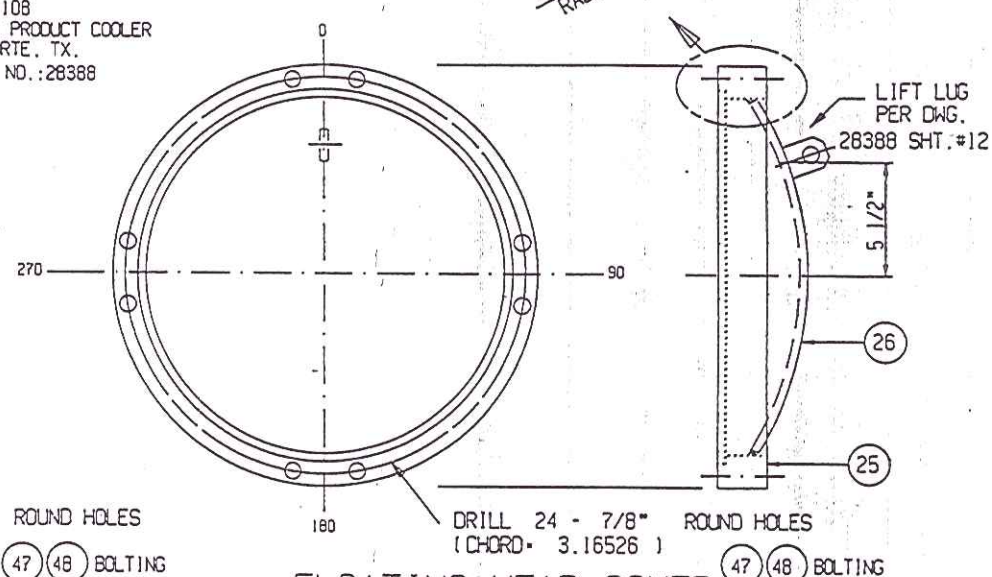
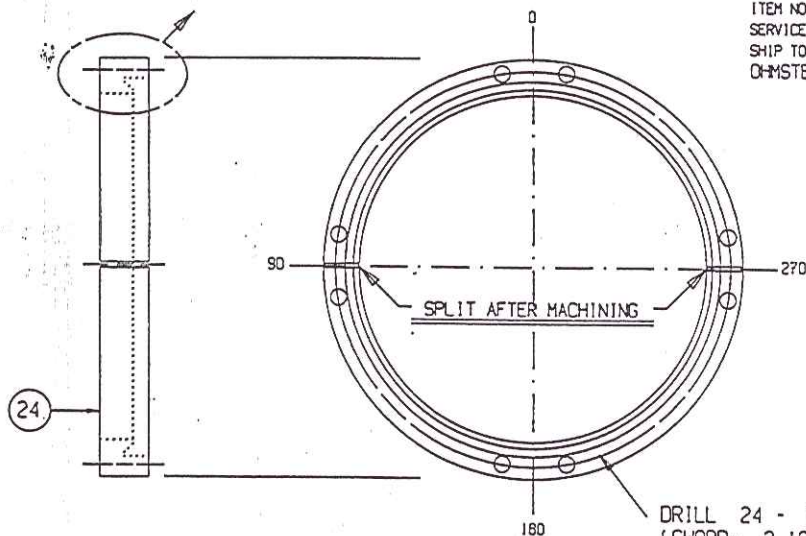
Use 1/16" Radius on  
BOTH 62deg Corners



MACHINE GASKET FACING AFTER ALL  
WELDING AND HEAT TREATMENT.



CUST: M.W.KELLOGG/TENNECO  
P.O. NO.: 6636-99D1-C210-01  
ITEM NO.: 06E-108  
SERVICE: MTBE PRODUCT COOLER  
SHIP TO: LAPORTE, TX.  
OHMSTEDE JOB NO.: 28388



## NOTES:

## BACK - UP RING

- 1) ALL WELDING TO BE IN ACCORDANCE W/ PROCEDURES #P1-IHT, #SUB-16HT
- 2) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 3) SEE DWG. 28388 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 &<br>BACK UP RING DETAILS |               |                      |                 |          |
|     |      |                         | OWN. BY<br>ERIC                               |               | OHMSTEDE             |                 |          |
|     |      |                         | DATE<br>6-17-91                               |               |                      |                 |          |
| 0   | 7-23 | FOR FAB. & CUST. REVIEW |                                               | C.C.          |                      |                 |          |
| NO. | DATE | REVISIONS               |                                               | OKD. BY<br>DC | DRAWING NO.<br>28388 | SHEET NO.<br>10 | REV<br>0 |