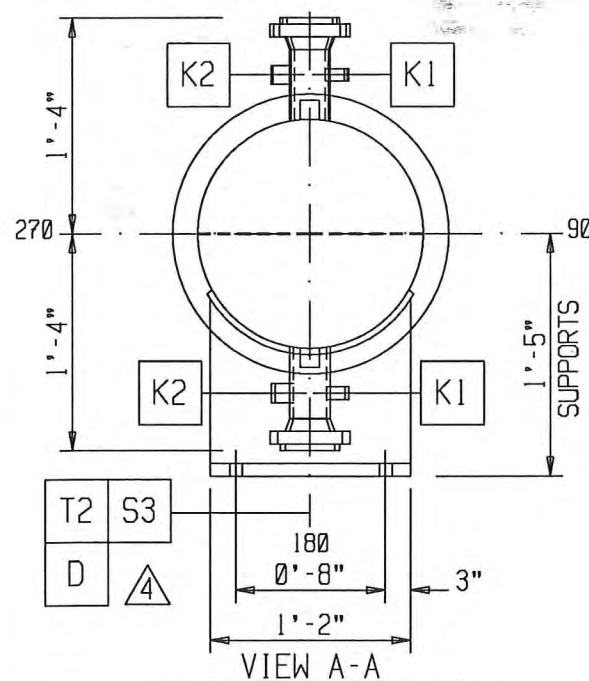
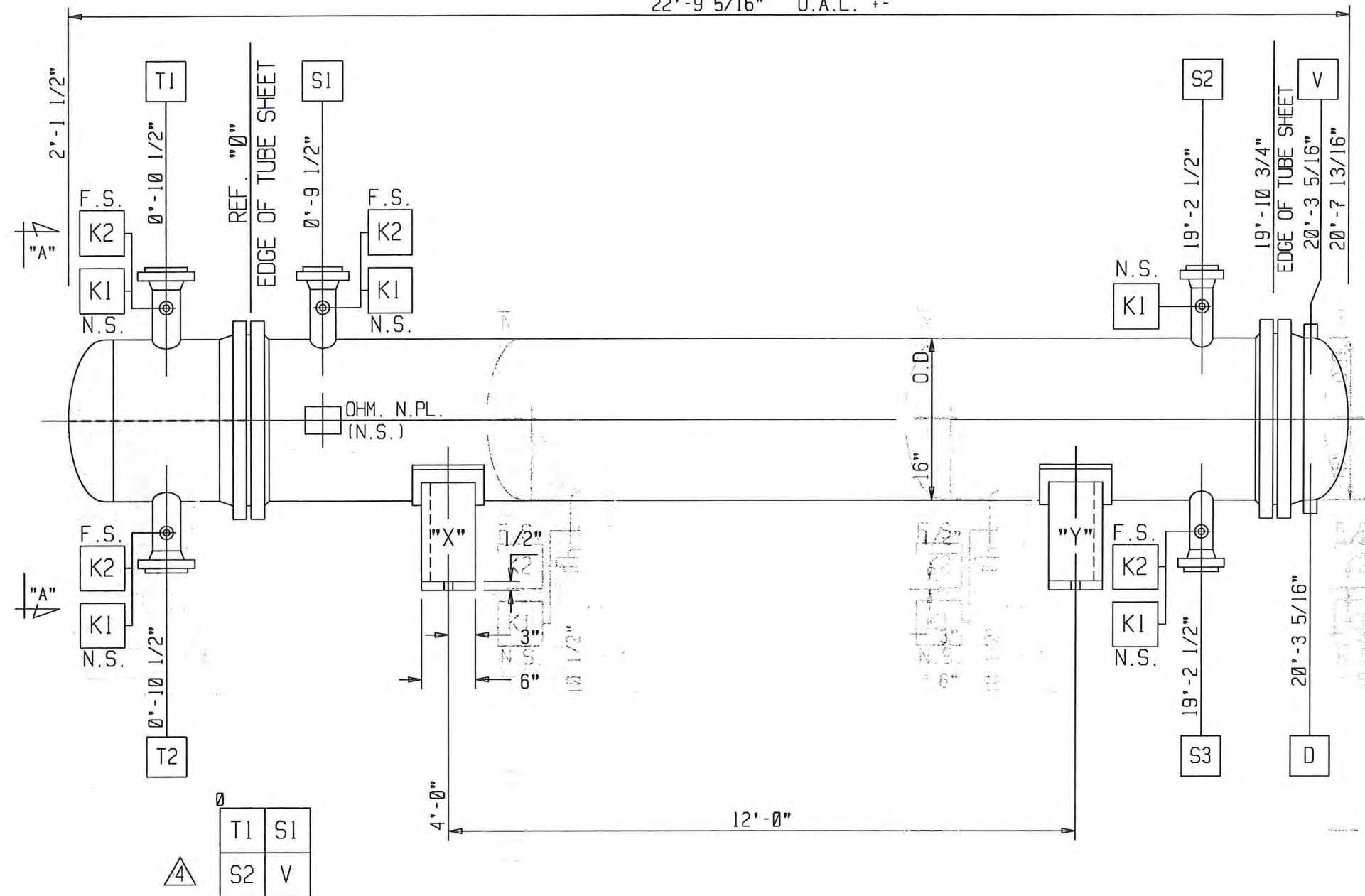


[illegible]

22'-9 5/16" O.A.L. +-



SUPPORTS

"X" (2) - 1" DIA. HOLES
"Y" (2) - 1" X 2" SLOTS

K2	1" - 6000#CPLG. W/ PLUG	
K1	3/4" - 6000#CPLG. W/ PLUG	
SD	3/4" - 6000#CPLG.	DRAIN
SV	3/4" - 6000#CPLG.	VENT
T2	8" - 150#RF WN	OUTLET
T1	8" - 150#RF WN	INLET
S3	3" - 300#RF WN	INTERMEDIATE
S2	4" - 300#RF WN	OUTLET
S1	6" - 300#RF WN	INLET
MK	SIZE-RATE	SERVICE

CERTIFIED

DATE

V. K. Saxena
9/10/96

DESIGN DATA

DESIGN DATA	SHELL	TUBE
DESIGN PRESSURE P.S.I.G.	225	150
TEST PRESSURE P.S.I.G.	369	429
DESIGN TEMPERATURE DEG. F. (MAX./MIN.)	300/-20	150/-20
CORROSION ALLOWANCE	.0000"	.0000"
NUMBER OF PASSES	1	2
RADIOGRAPHIC EXAMINATION	SPOT	SPOT
HEAT TREAT REQUIRED	NO	NO

ESTIMATED WEIGHTS, LBS.

DRY: 4500 BUNDLE: - - - WET: 6000

SPECIFICATIONS

ASME CODE SECT. VIII DIV.1, 1995 ED. (STAMP YES)
TEMA CLASS R
NATIONAL BOARD REGISTRATION REQUIRED

MATERIAL

CHANNEL: SA-312TP304L
SHELL: SA-312TP304L
TUBESHEETS: SA-240-304L
BAFFLES: SA-240-304L
TUBES: SA-213TP304L
(187) 3/4" O.D.X .083" (MW) X 20'-0" LG.
TUBE PITCH 15/16" Δ SURFACE 730 SQ.FT.

GENERAL NOTES

ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.

MAWP:

SHELL SIDE: 225 PSIG LIMITED BY TUBESHEETS (HYDROTEST= 1.092 X 1.5 X 225 = 368.5)

TUBE SIDE: 284 PSIG LIMITED BY BODY FLANGES
(HYDROTEST = 1.006 X 1.5 X 284 = 428.5)

BODY FLANGE GASKETS: .1250" THK. S.S. DOUBLE JACKETED W/
FLEXIBLE GRAPHITE FILLER

1 SET OF SPARE GASKETS REQUIRED.

PAINT: LIGHTLY ABRASIVE BLAST TO LEAVE A 1/2 TO 1 mil. SURFACE
PROFILE THE SURFACE SHOULD FEEL LIKE FINE GRIT SANDPAPER
TO THE TOUCH. PAINT WITH ONE COAT OF CARBOLINE 1248
(1 1/2 - 2) mils D.F.T. FINISH COLOR TO BE LIGHT GRAY.

TYPE UNIT : B E M SIZE : 16-240

CUSTOMER: OLIN CORP.

OHMSTEDE JOB NO.: 648548

P.O. NO.: LC98765, R-9552

ITEM NO.: 171-039

SERVICE : HYDROLYSIS COLUMN VENT CONDENSER

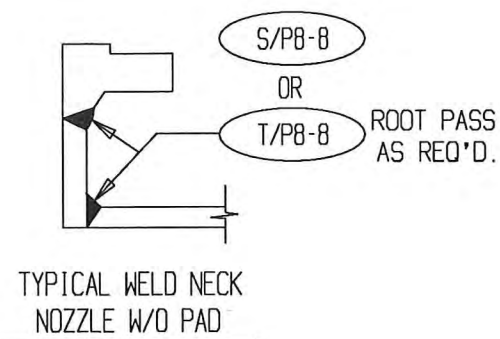
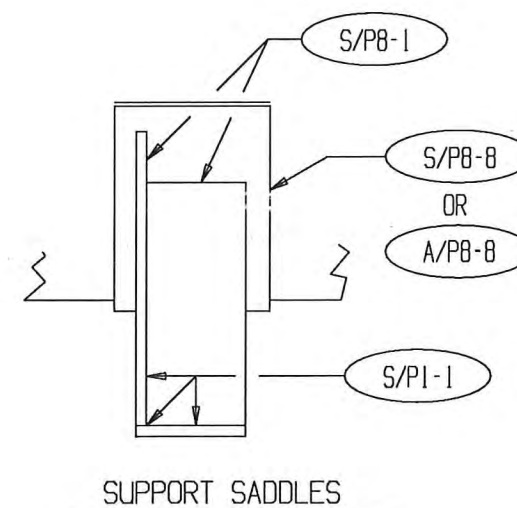
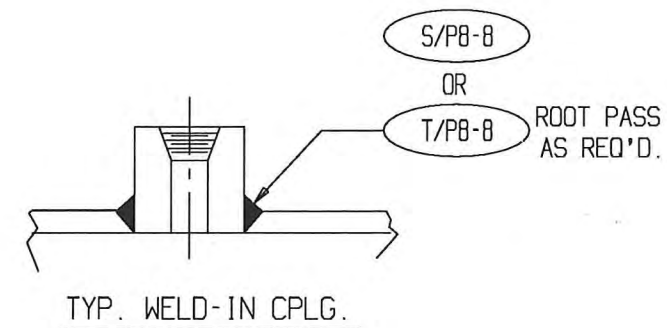
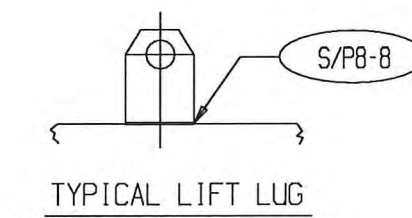
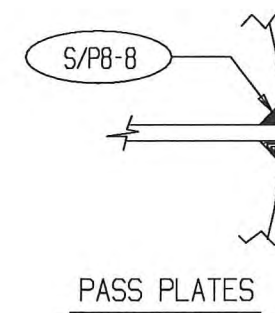
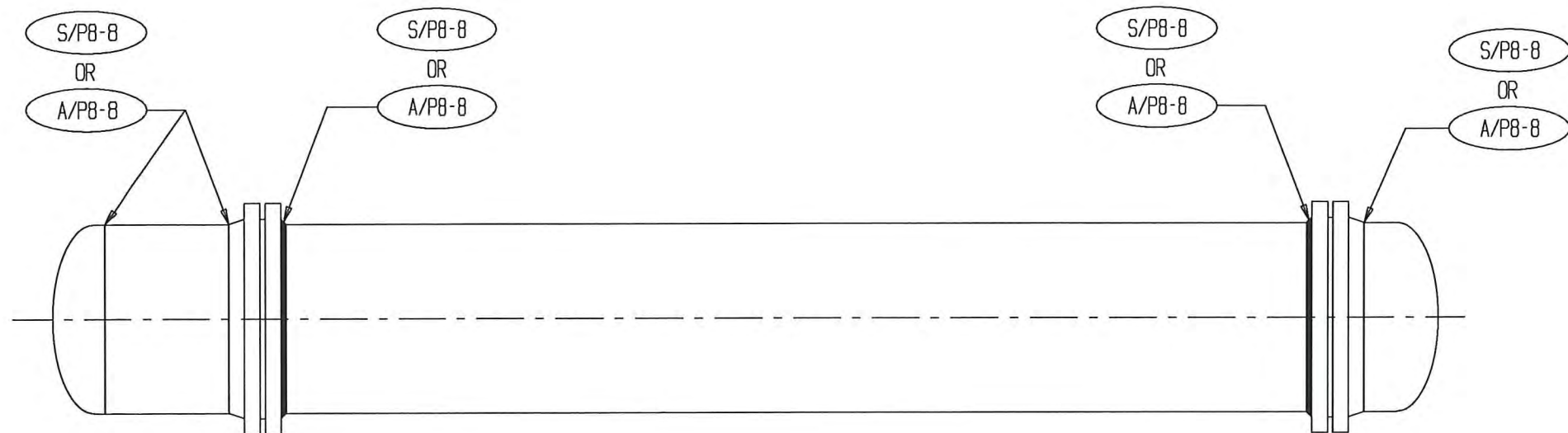
ASSEMBLY AND SPECIFICATIONS

OHMSTEDE

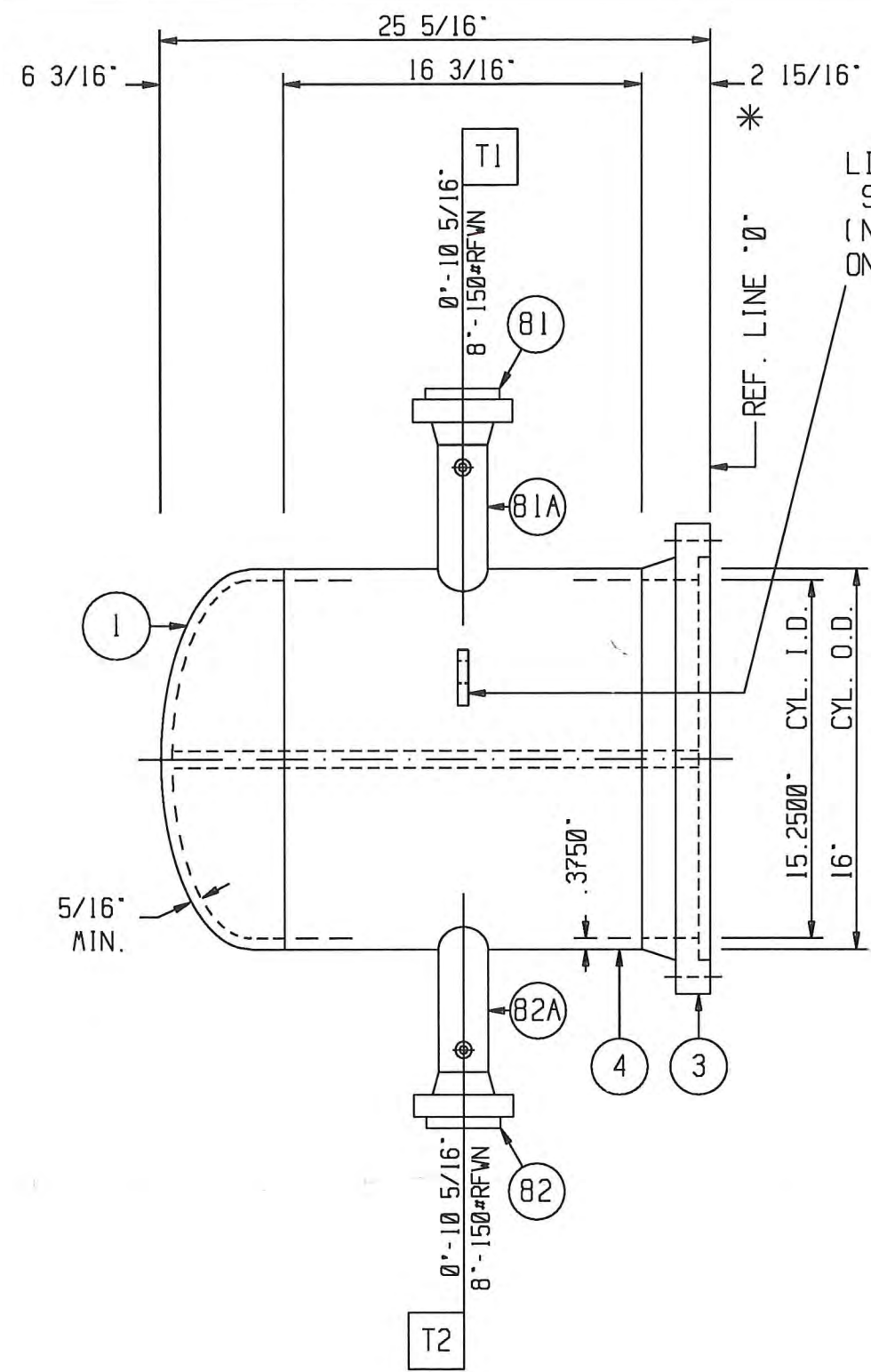
DRAWING NO.
648548

SHEET NO.
1

REV.
4

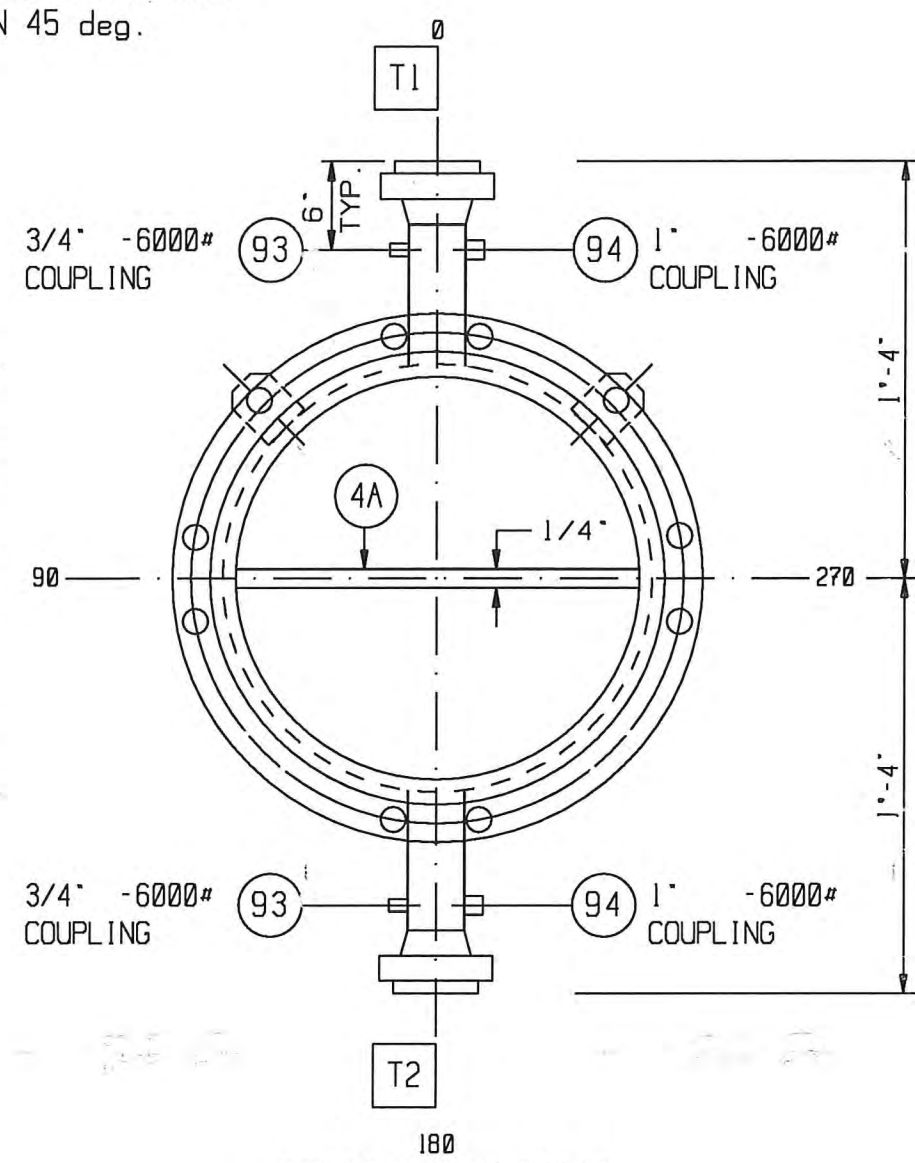


					CUSTOMER: OLIN CORP. OHMSTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
1	RELEASE FOR FABRICATION	J.R	V.S	7-24-96	WELD MAP			
Ø	FOR CUSTOMER APPROVAL	J.R	V.S	7-15-96				
NO.	REVISIONS	BY	CHK.	DATE CHK.	OHMSTEDE	DRAWING NO. 648548	SHEET NO. 2	REV. 1



* MACHINE GASKET FACING AFTER ALL WELDING.
FOR FLANGE DETAILS SEE DWG. SHEET. NO. 13

LIFT LUG PER DWG. SHEET. NO. 11 (N.S.) & (F.S.) ON 45 deg.



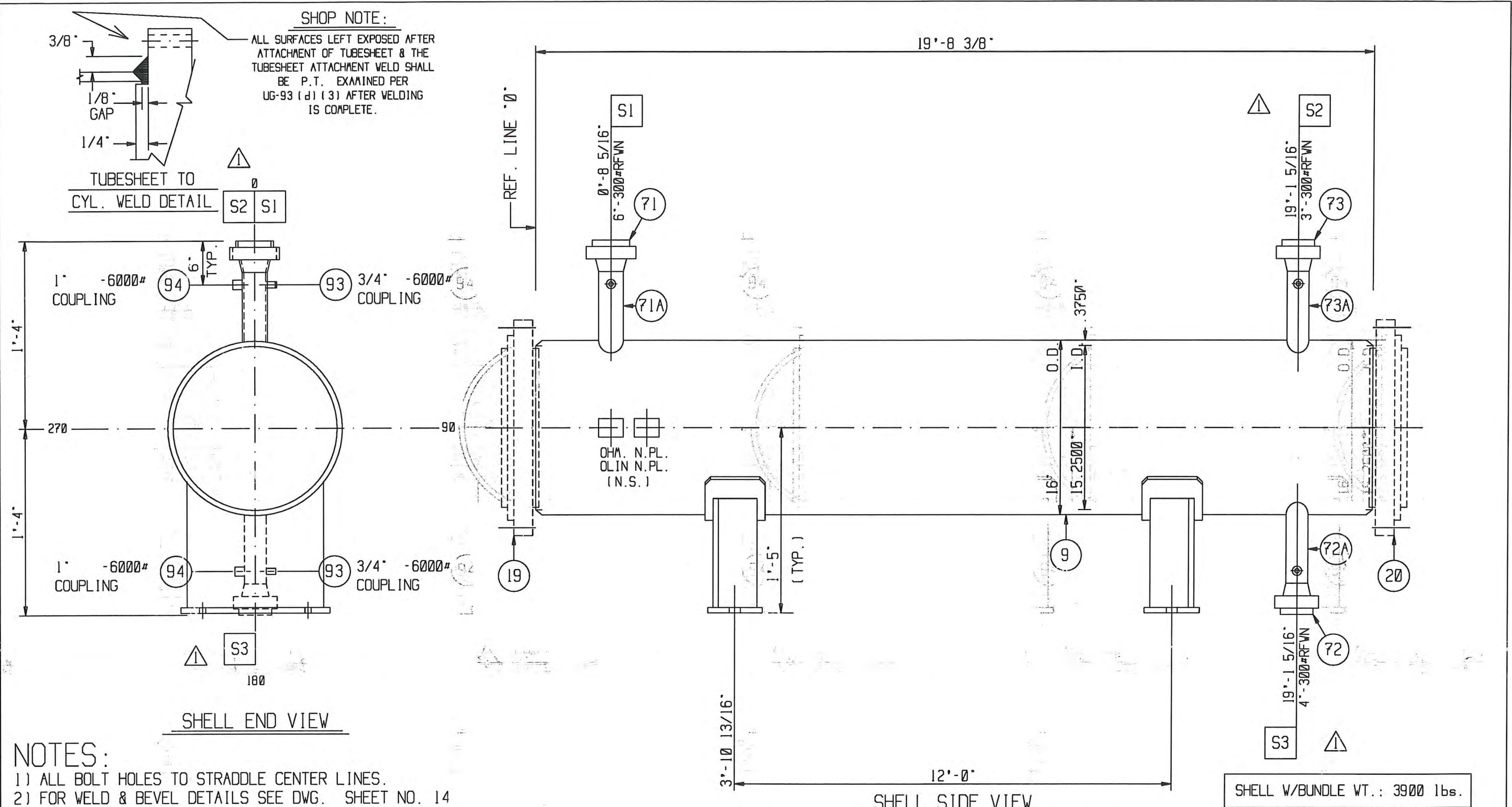
CHANNEL END VIEW
FRONT CHANNEL WT.: 325 lbs.

NOTES:

- 1) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 2) FOR WELD & BEVEL DETAILS SEE DWG. SHEET. NO. 14 EACH
- 3) SPOT RADIOGRAPHY. (AT LEAST ONE X-RAY REQ'D ON GIRTH SEAM.)

CHANNEL SIDE VIEW

					CUSTOMER: OLIN CORP. OHMSTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					FRONT CHANNEL DETAILS			
0	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96	OHMSTEDE	DRAWING NO. 648548	SHEET NO. 3	REV. 0
NO.	REVISIONS	BY	CHK.	DATE CHK.				

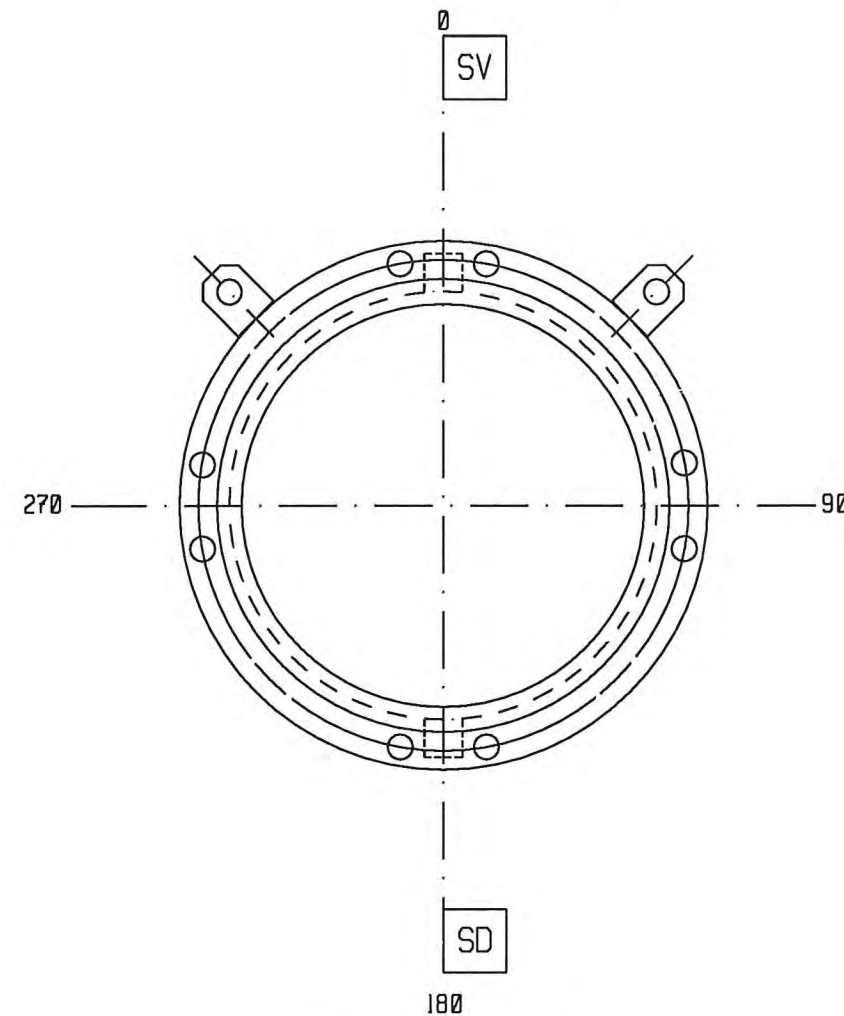


- NOTES:
- 1) ALL BOLT HOLES TO STRADDLE CENTER LINES.
 - 2) FOR WELD & BEVEL DETAILS SEE DWG. SHEET NO. 14
 - 3) GRIND ALL INSIDE WELDS FLUSH.
 - 4) SPOT RADIOGRAPHY.

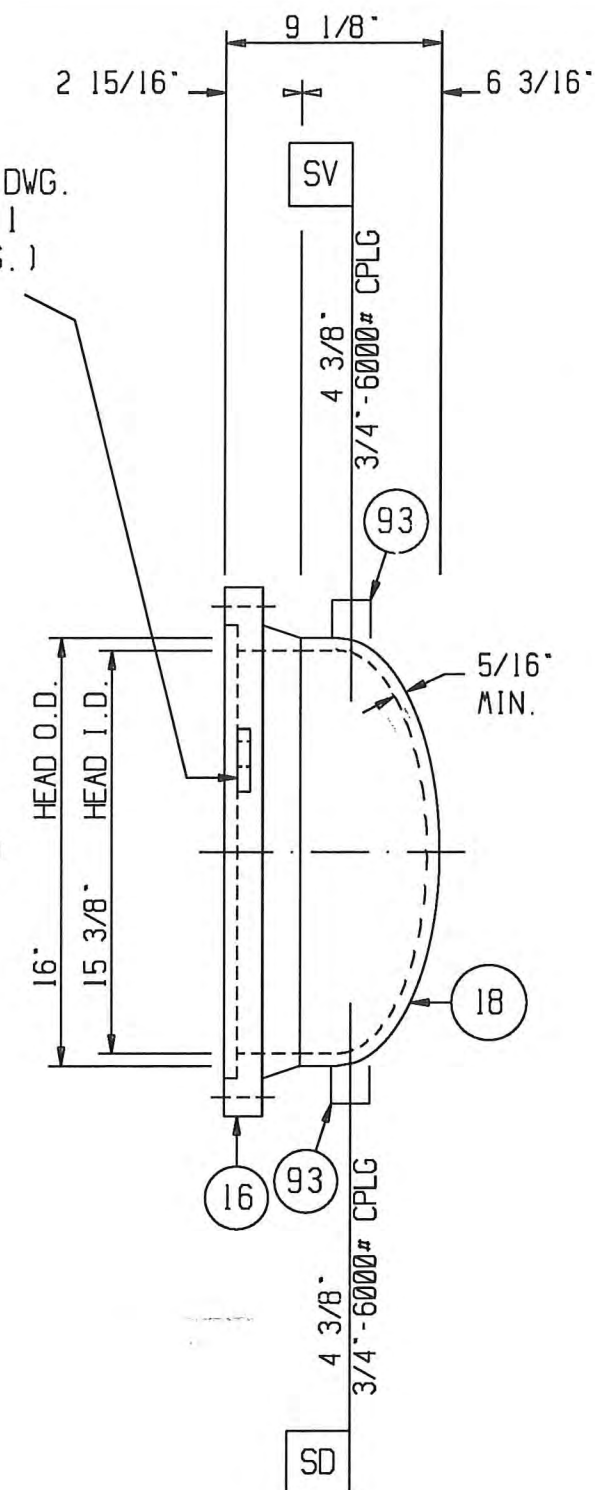
					CUSTOMER: OLIN CORP. OHMSTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
1	FIELD REVISED/AS BUILT	MEM	V.S.	9-04-96	SHELL DETAILS			
0	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96				
NO.	REVISIONS	BY	CHK.	DATE CHK.	OHMSTEDE	DRAWING NO. 648548	SHEET NO. 4	REV. 1

* MACHINE GASKET FACING AFTER ALL WELDING.
FOR FLANGE DETAILS SEE DWG. SHEET NO. 13

LIFT LUG PER DWG.
SHEET NO. 11
(N.S.) & (F.S.)
ON 45 deg.



CHANNEL END VIEW



CHANNEL SIDE VIEW

REAR CHANNEL WT.: 105 lbs.

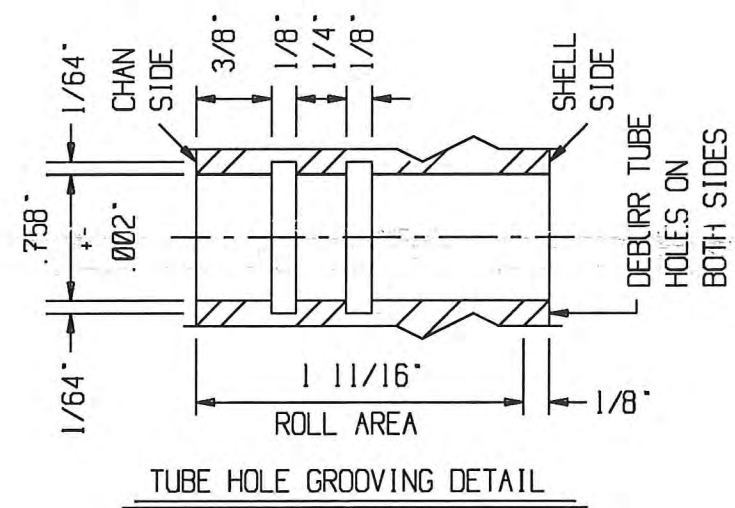
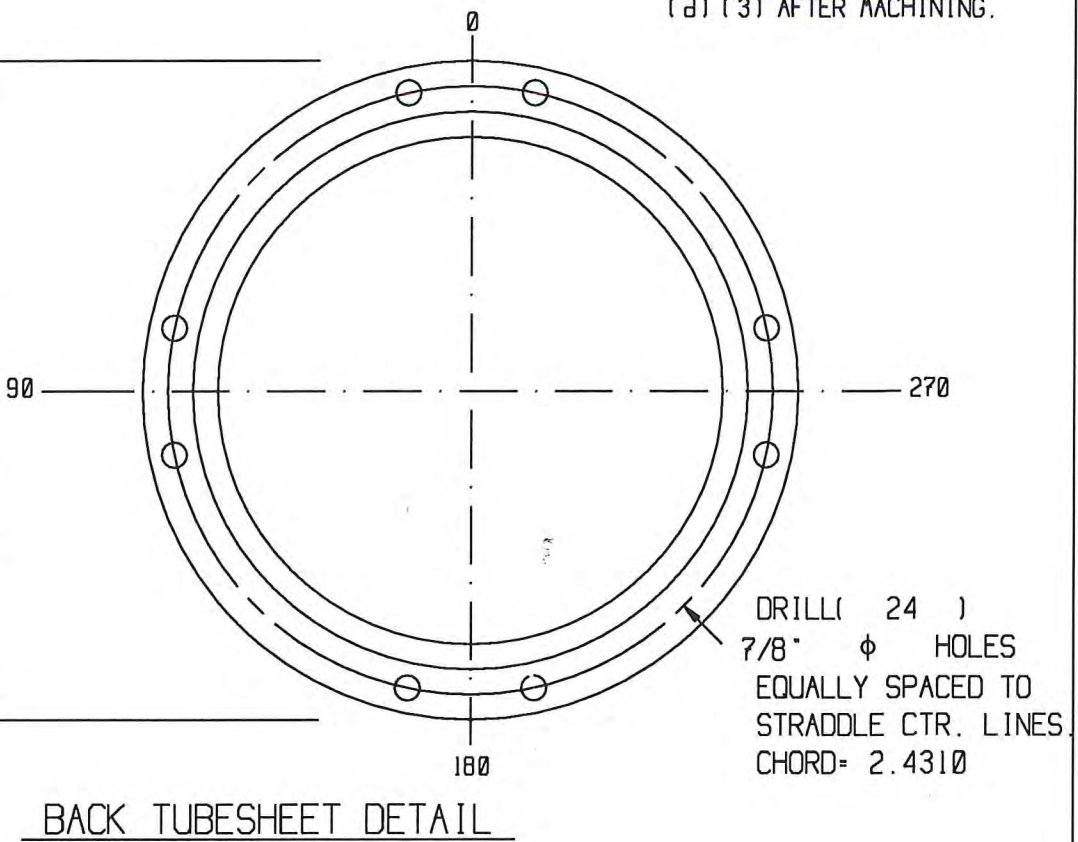
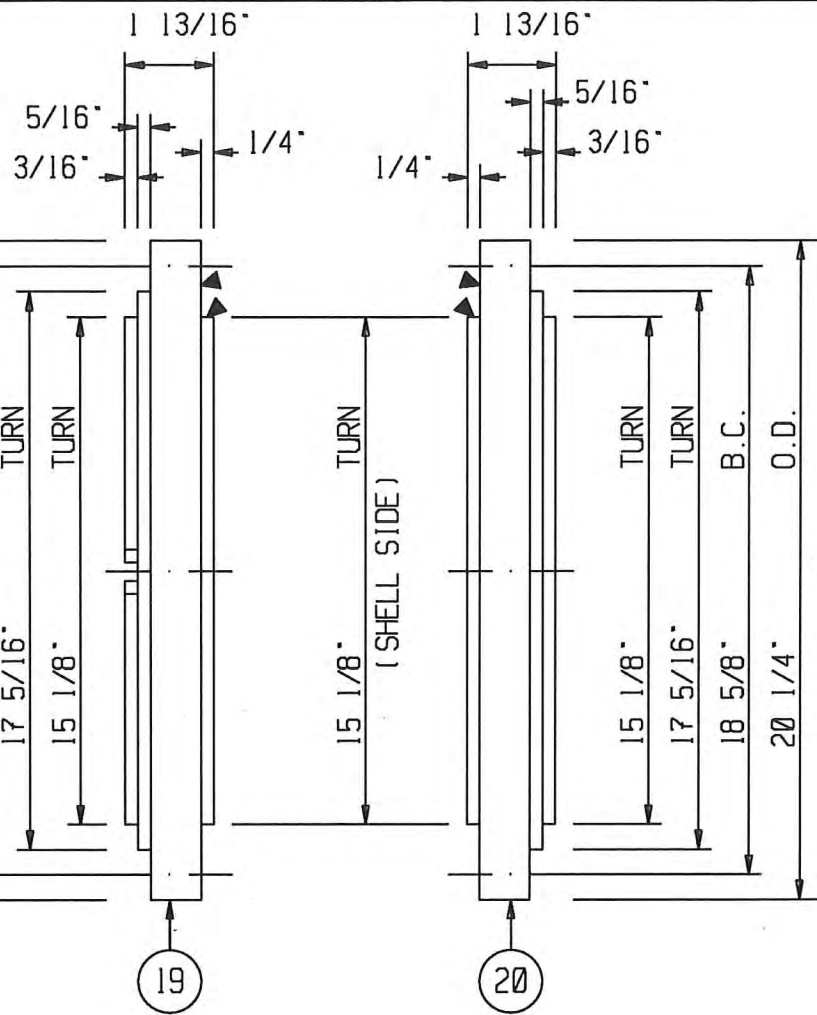
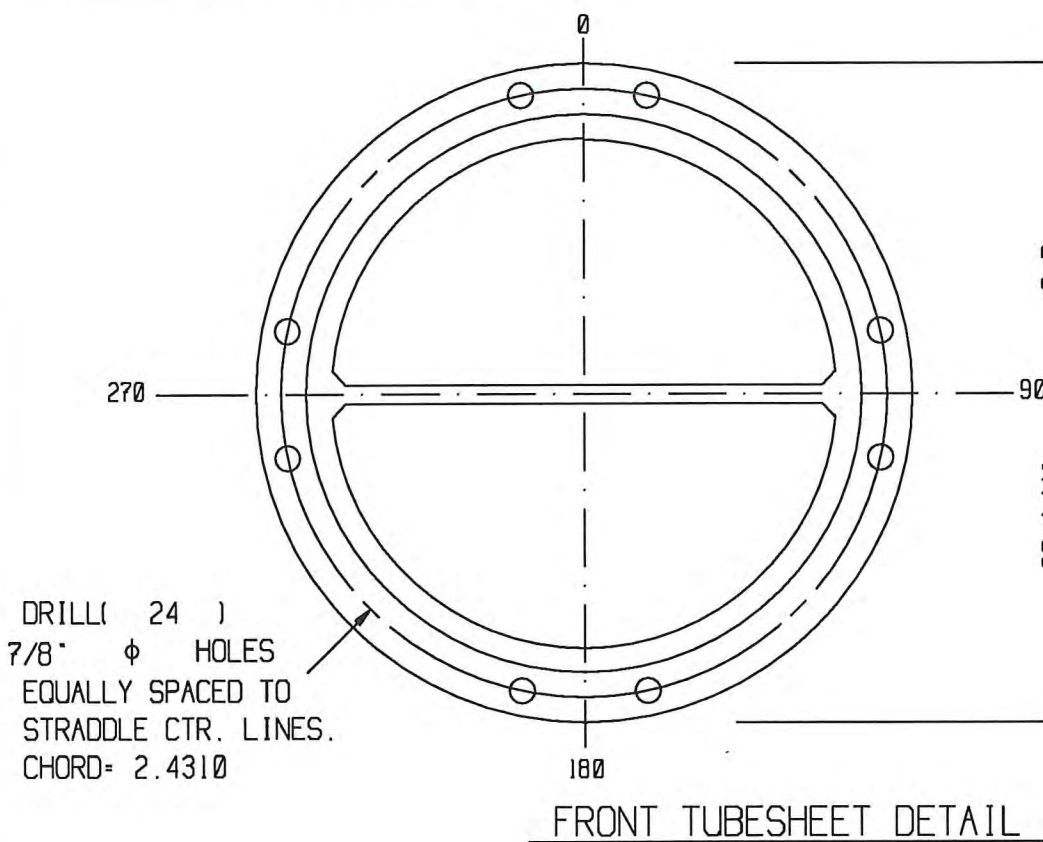
NOTES:

- 1) ALL BOLT HOLES TO STRADDLE CENTER LINES.
- 2) FOR WELD & BEVEL DETAILS SEE DWG. SHEET NO. 14
- 3) SPOT RADIOGRAPHY. (AT LEAST ONE SPOT X-RAY REQ'D ON GIRTH SEAM.)

					CUSTOMER: OLIN CORP. OHMSTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					REAR CHANNEL DETAILS			
Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96	OHMSTEDE	DRAWING NO. 648548	SHEET NO. 5	REV. Ø
NO.	REVISIONS	BY	CHK.	DATE CHK.				

DRILL & TAP 1/2" DEEP FOR 6 - 3/8" DIA.
TIE RODS ON SHELL SIDE OF
19 TUBESHEET. DO NOT DRILL THRU
(SEE TUBE LAYOUT FOR LOCATIONS.)

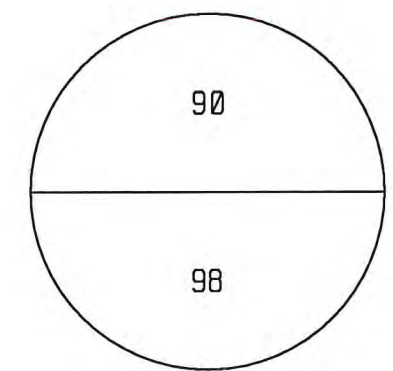
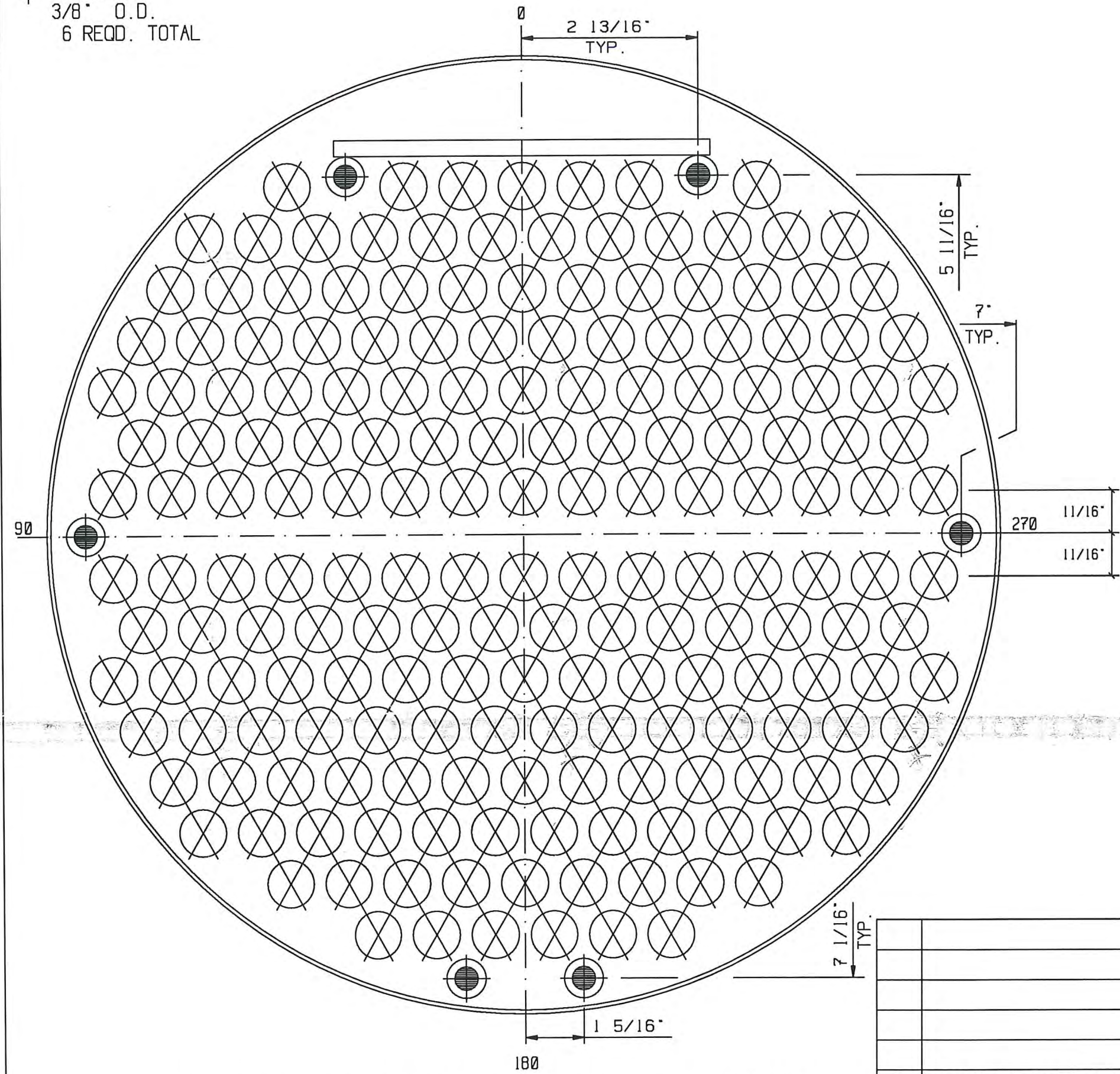
SHOP NOTE:
ALL SURFACES MARKED THUS
SHALL BE P.T. EXAMINED
IN ACCORDANCE WITH UG-93
(d) (3) AFTER MACHINING.



- NOTES:
- 1) MACHINE ALL GASKET SURFACES TO 125 AARH.
 - 2) ALL PASS PLATE GROOVE WIDTHS TO BE 3/8" WIDE.
 - 3) ALL PASS PLATE GROOVE JUNCTIONS TO BE NOTCHED 3/8" AT 45 Deg.
 - 3) ALL PASS PLATE GROOVE JUNCTIONS ON
 - 4) STAMP O.D. OF TUBESHEET 15/16" REQ'D MIN. THICKNESS a B.C.
 - 5) TUBESHEET THICKNESS INCLUDES 1/8" FUTURE MACHINE ALLOWANCE.

					CUSTOMER: OLIN CORP. OHMSTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					TUBESHEET DETAILS			
0	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96	OHMSTEDE	DRAWING NO. 648548	SHEET NO. 6	REV. 0
NO.	REVISIONS	BY	CHK.	DATE CHK.				

TIE RODS.
 3/8" O.D.
 6 REQD. TOTAL

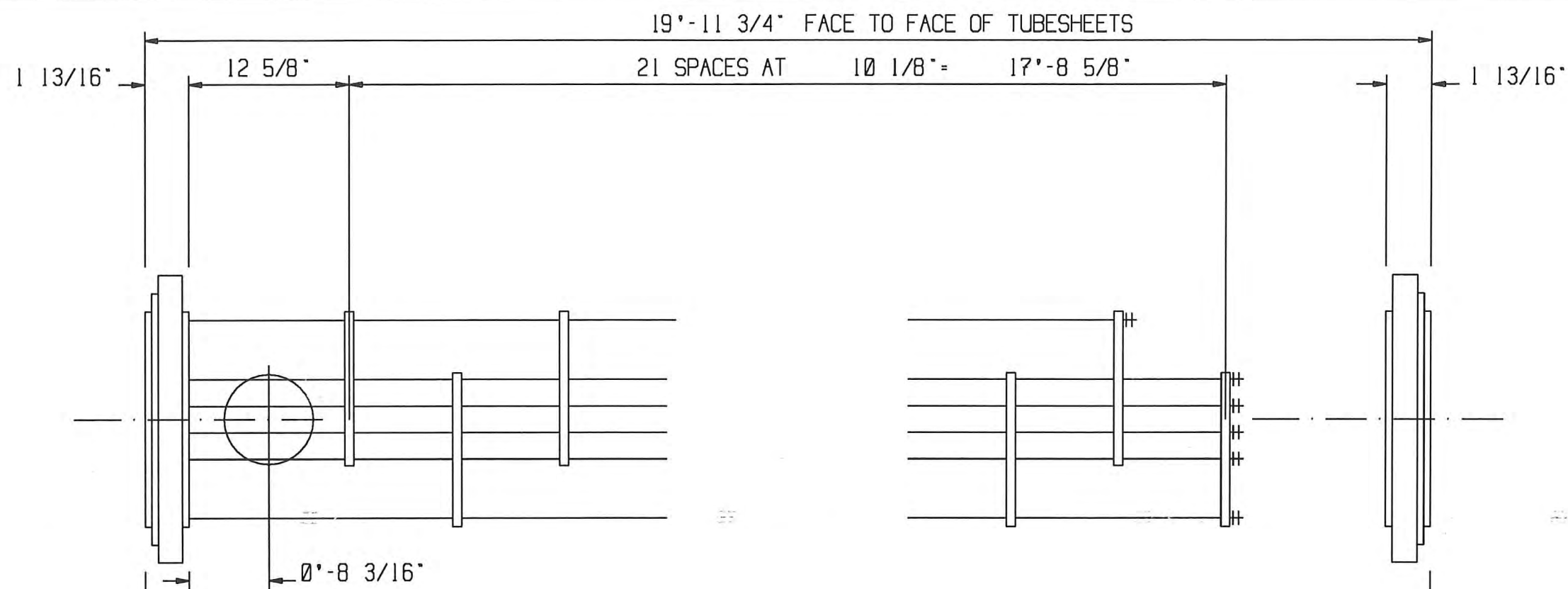


TUBE DISTRIBUTION

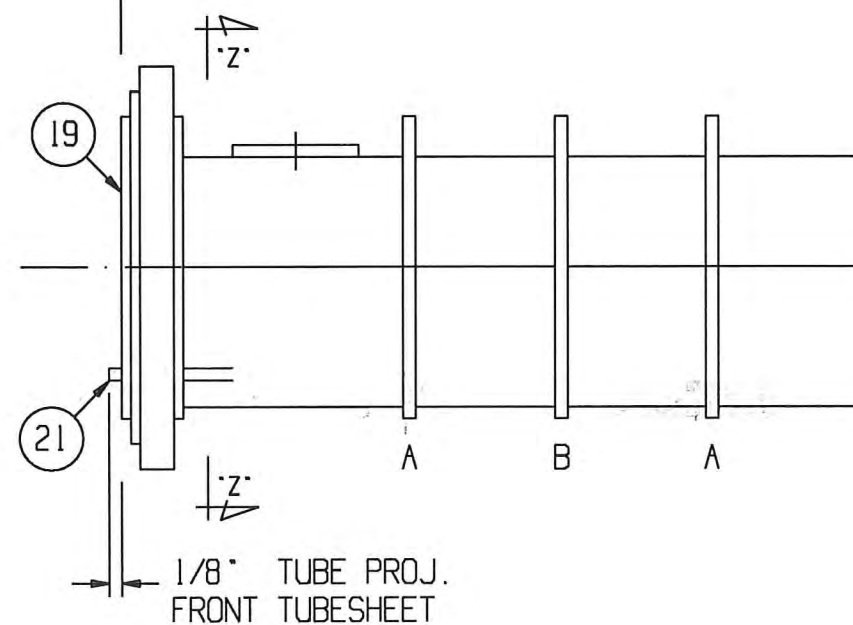
- NOTES:
- 1) DRILL AND REAM TUBE HOLES IN TUBESHEETS TO .7580" $\pm$.002" DIA. FOR 188 - 3/4" O.D. TUBES.
 - 2) TUBE PITCH = 15/16" TRIANGLE.
 - 3) NUMBER OF PASSES = 2
 - 4) SEE DRAWING SHEET NO. 6 FOR TUBE HOLE GROOVING DETAILS.
 - 5) BAFFLE O.D. = 15 1/8"
 - 6) O.T.L. = 14 13/16"

VIEW LOOKING AT SHELL SIDE OF NO. 19 TUBESHEET

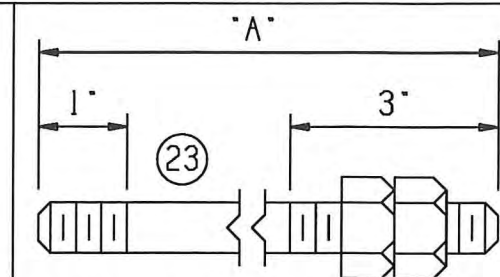
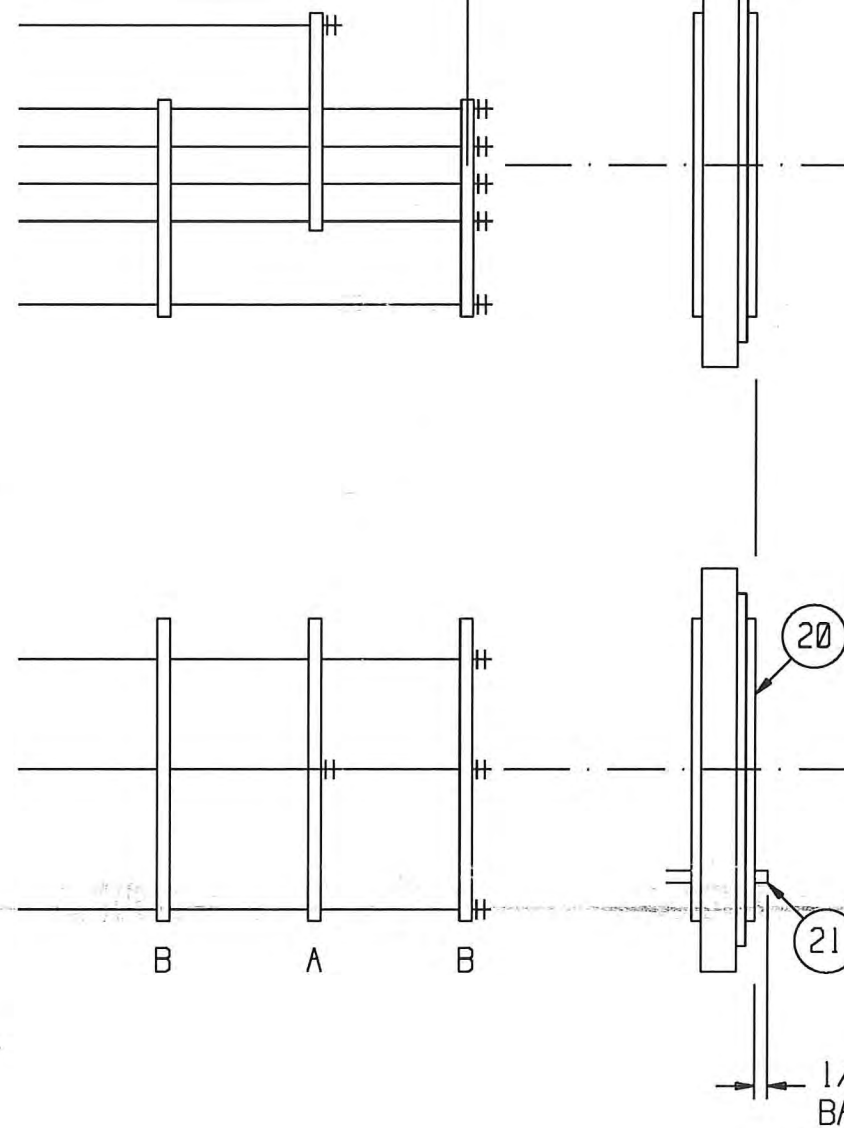
					CUSTOMER: OLIN CORP. OHASTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					TUBE LAYOUT			
0	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96	OHASTEDE	DRAWING NO. 648548	SHEET NO. 7	REV. 0
NO.	REVISIONS	BY	CHK.	DATE CHK.				



PLAN VIEW

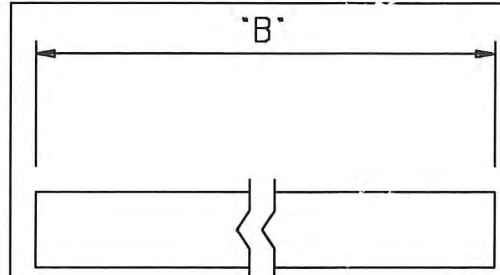


ELEVATION VIEW



MAT'L: S.S. 304L
3/8" O.D. TIE RODS

REQ'D.	"A"
5	18'-11 3/4"
1	18'-1 5/8"

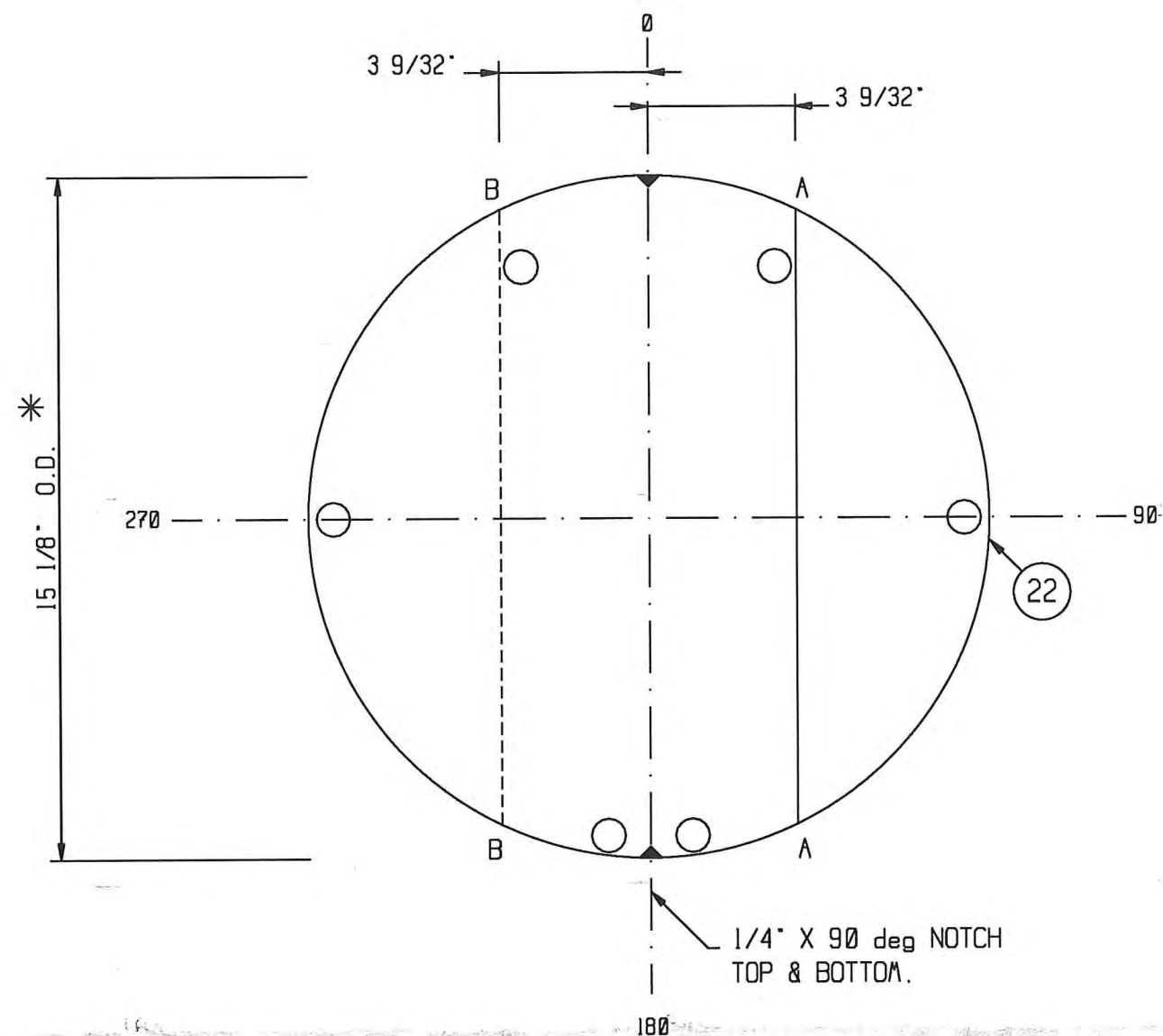


MAT'L: S.S. 304L
5/8" O.D. SPACER TUBING

REQ'D.	"B"
5	12 9/16"
1	22 11/16"
84	9 15/16"
20	20 1/16"

NOTES:
1) SEE DWG. SHEET NO. 9 FOR SECTION AND VIEW DETAILS.

					CUSTOMER: OLIN CORP. OHASTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					BUNDLE DETAILS			
Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96	OHASTEDE	DRAWING NO. 648548	SHEET NO. 8	REV. Ø
NO.	REVISIONS	BY	CHK.	DATE CHK.				



VIEW ZZ OF BAFFLES

3/16" THK.

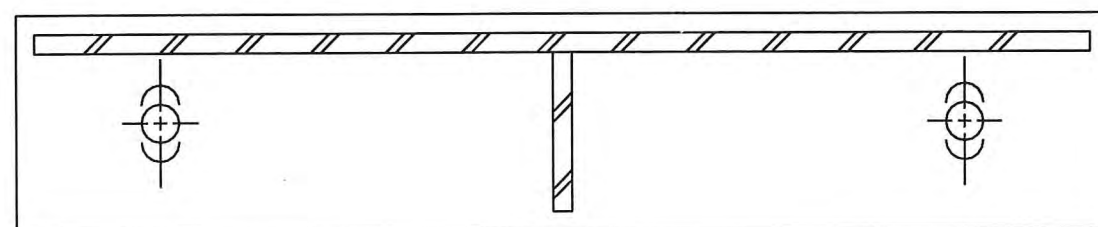
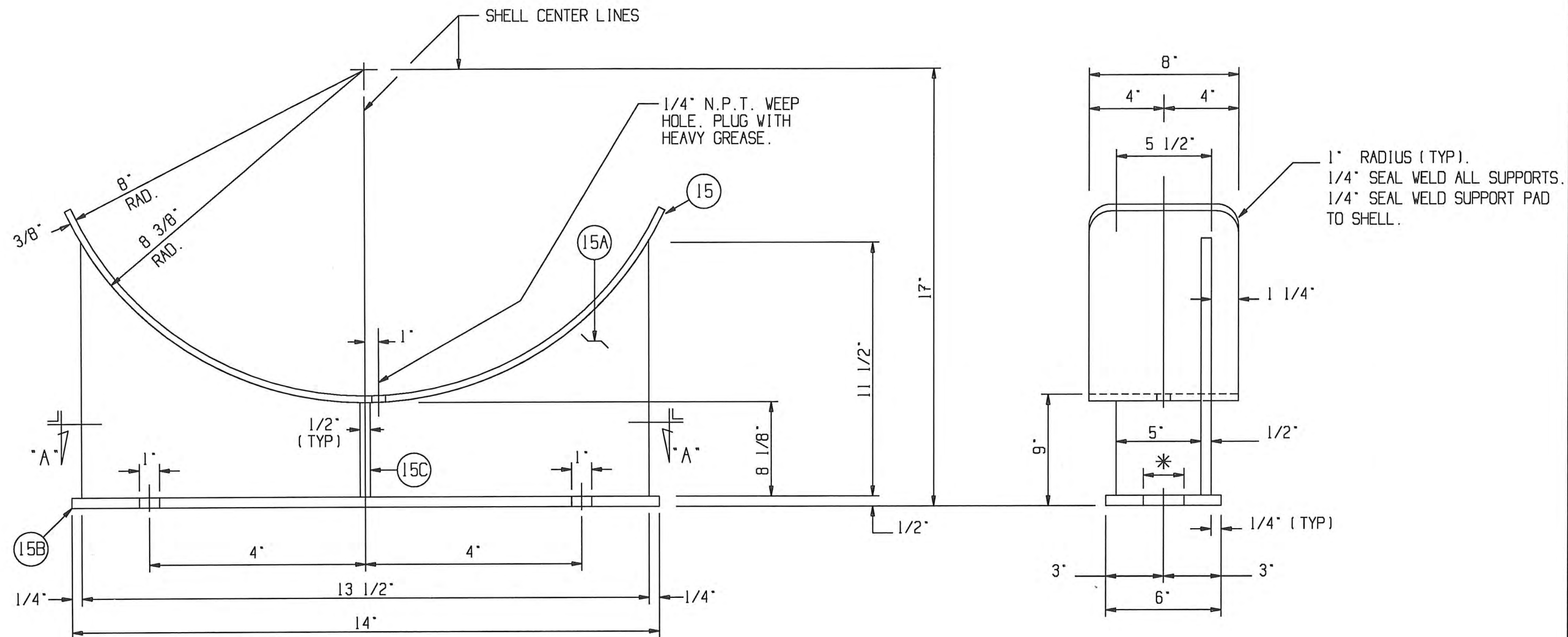
11 -REQ'D. CUT AA

11 -REQ'D. CUT BB

NOTES:

- 1) DRILL TUBE HOLES IN BAFFLES 25/32" DIA. & DEBURR.
- 2) DRILL TIE ROD HOLES 7/16" 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 AARH.

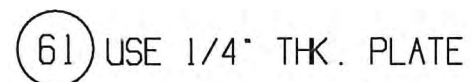
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Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96				
NO.	REVISIONS	BY	CHK.	DATE CHK.				
					BAFFLE DETAILS			
					OHMSTEDE	DRAWING NO. 648548	SHEET NO. 9	REV. Ø



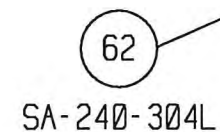
SECTION "A-A"

* ONE REQUIRED MARKED 'X' W/ (2) 1" ROUND HOLES.
ONE REQUIRED MARKED 'Y' W/ (2) 1" X 2" LG. SLOTS.

					CUSTOMER: OLIN CORP. OHASTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					SUPPORT DETAILS			
Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96	OHASTEDE			
NO.	REVISIONS	BY	CHK.	DATE CHK.				
					DRAWING NO.	SHEET NO.	REV.	
					648548	10	Ø	



NAME PLATE BRACKET DETAIL



USE 3/8" F.W. (FULL PENETRATION)

1 1/2" ROUND HOLE

NO. REQUIRED: (4)

LIFTING LUG DETAIL

60



Ohmstede Inc.

NATL. BD. NO. *

CERTIFIED BY
OHMSTEDE INC.

LAKE CHARLES PLANT

SHELL

MAWP 225 PSI AT 300 °FMDMT -20 °F AT 225 PSI

TUBE

MAWP 150 PSI AT 150 °F

MDMT

-20

 °F AT

150

 PSI

S/N	648548
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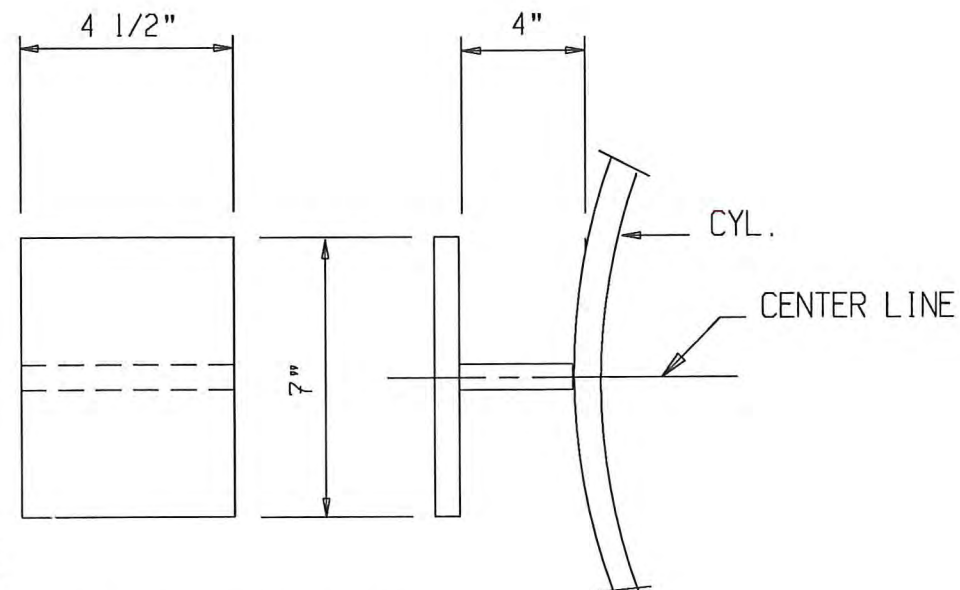
YEAR	1996
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ITEM NO.	171-039	SIZE	16-240	TYPE	B E M
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P.O. NO. LC98765, R-9552

* TO BE ASSIGNED AT TIME OF SHIPMENT

					CUSTOMER: OLIN CORP.			
					OHMSTEDE JOB NO.: 648548			
					P.O. NO.: LC98765, R-9552			
					ITEM NO.: 171-039			
					NAME PL., BRKT. & LIFT LUGS			
Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96				
NO.	REVISIONS	BY	CHK.	DATE CHK.	OHMSTEDE	DRAWING NO. 648548	SHEET NO. 11	REV Ø



USE 1/4" THK. PLATE
MAT'L: SA-36

USE 1/8" F.W. (TYP)

(ONE) REQ'D.

NAME PLATE BRACKET DETAIL

MATERIAL: 18-8 STN. STL.(16 GA)

60B

olin CHEMICALS

INFORMATION PLATE

648548

EQUIPMENT TAG NO. 171-039

LAST INSPECTED DATE 1996

BY C.F.

REPAIR OR NEW (R OR N) NEW

REQUIRED GASKET MATERIAL 304L S.S. DOUBLE JACKETED W/ FLEXIBLE GRAPHITE FILLER

TUBE MATERIAL SA-213TP304L

NDE

1. DYE CHECK YES

2. AIR TEST NO

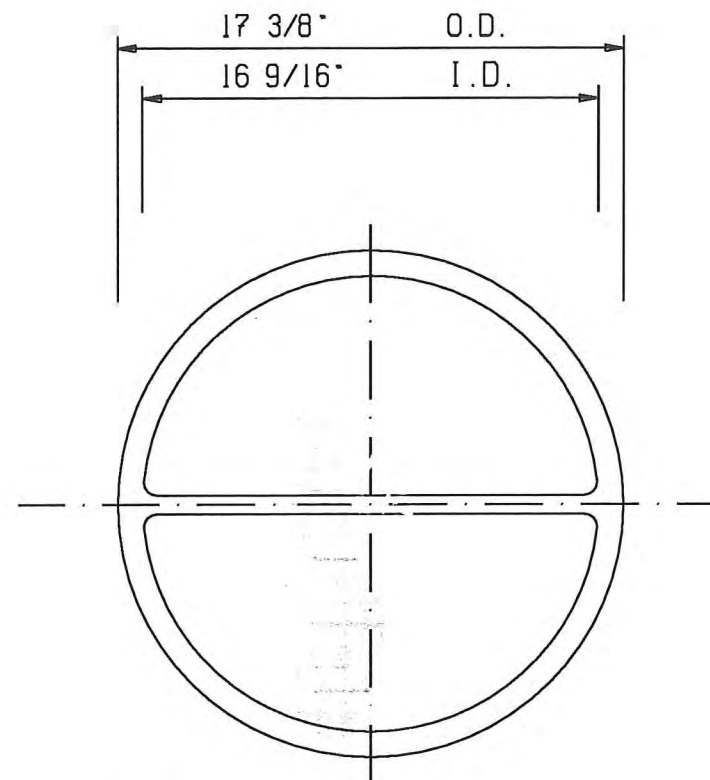
3. HYDRO TEST YES SHELL SIDE @ 369 PSIG, TUBESIDE @ 429 PSIG

4. EDDY CURRENT NO

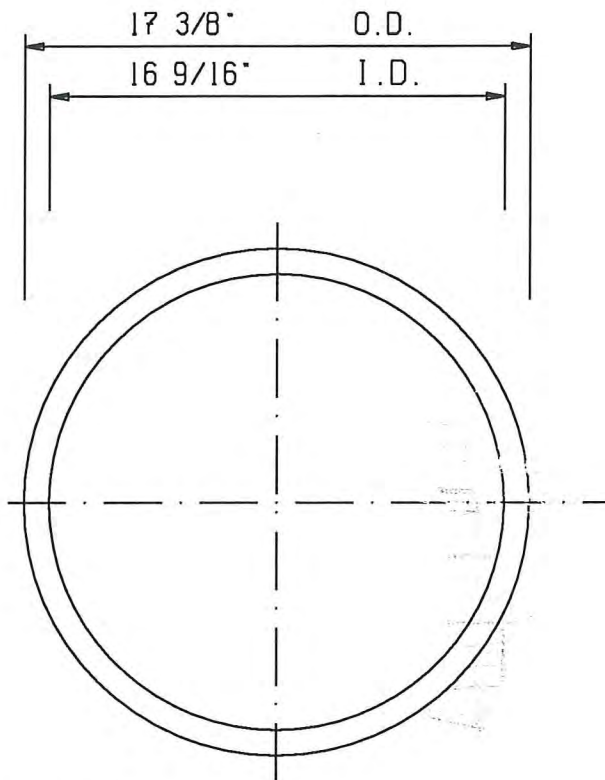
5. OTHERS NO

REMARKS/COMMENT HYDROLYSIS COLUMN VENT CONDENSER

					CUSTOMER: OLIN CORP. OHMSTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
					OLIN NAME PL., BRKT.			
					OHMSTEDE			
					DRAWING NO. 648548			
					SHEET NO. 11A			
					REV. 0			
Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96				
NO.	REVISIONS	BY	CHK.	DATE CHK.				



- ⚠ (40) (1)-REQUIRED.
FRONT CHANNEL GASKET
304L S.S. DOUBLE JACKETED W/
FLEXIBLE GRAPHITE FILLER.
RIB WIDTH TO BE 5/16" WIDE



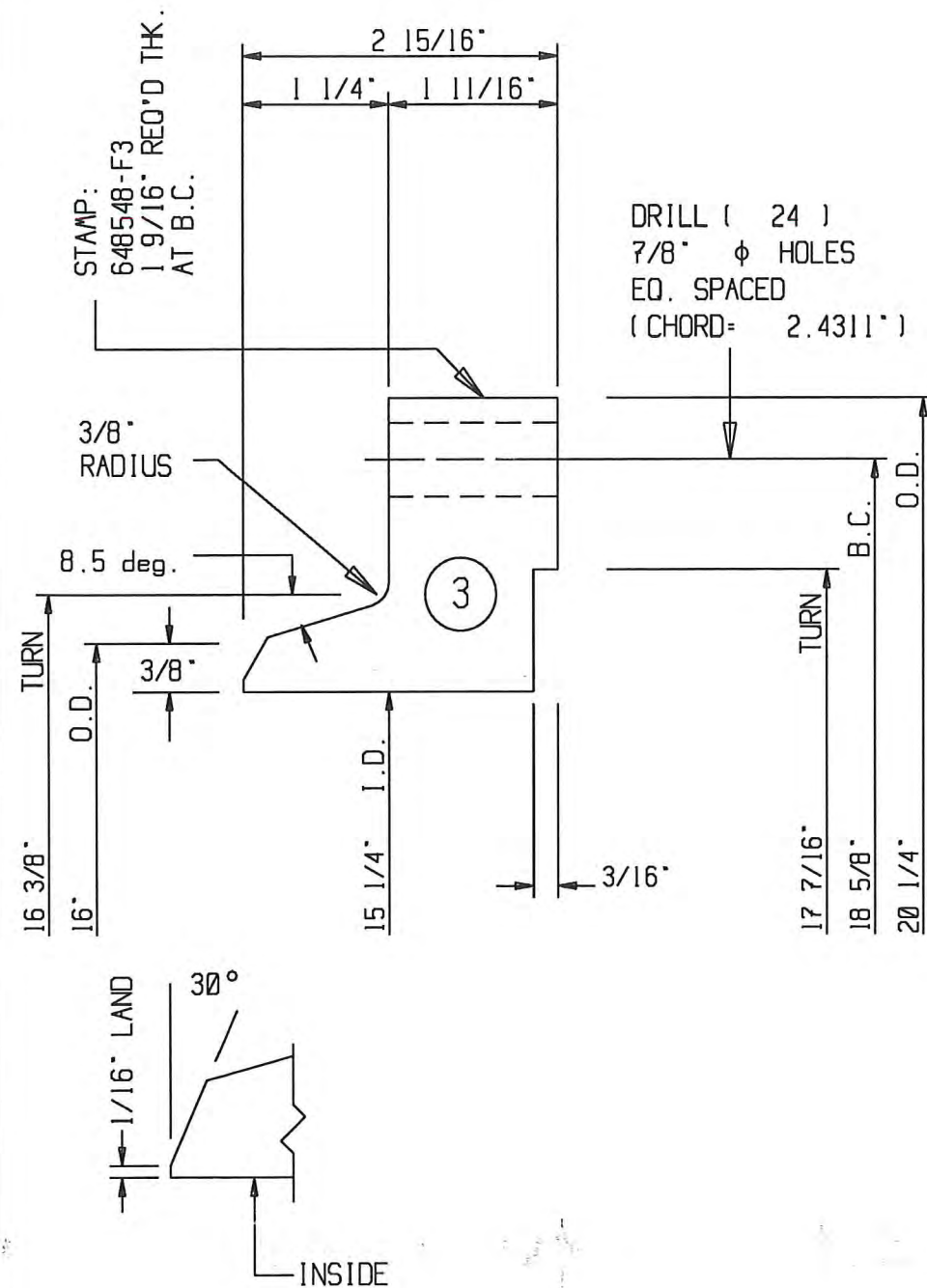
- ⚠ (40) (1)-REQUIRED.
REAR CHANNEL GASKET.
304L S.S. DOUBLE JACKETED W/
FLEXIBLE GRAPHITE FILLER.

NOTES:

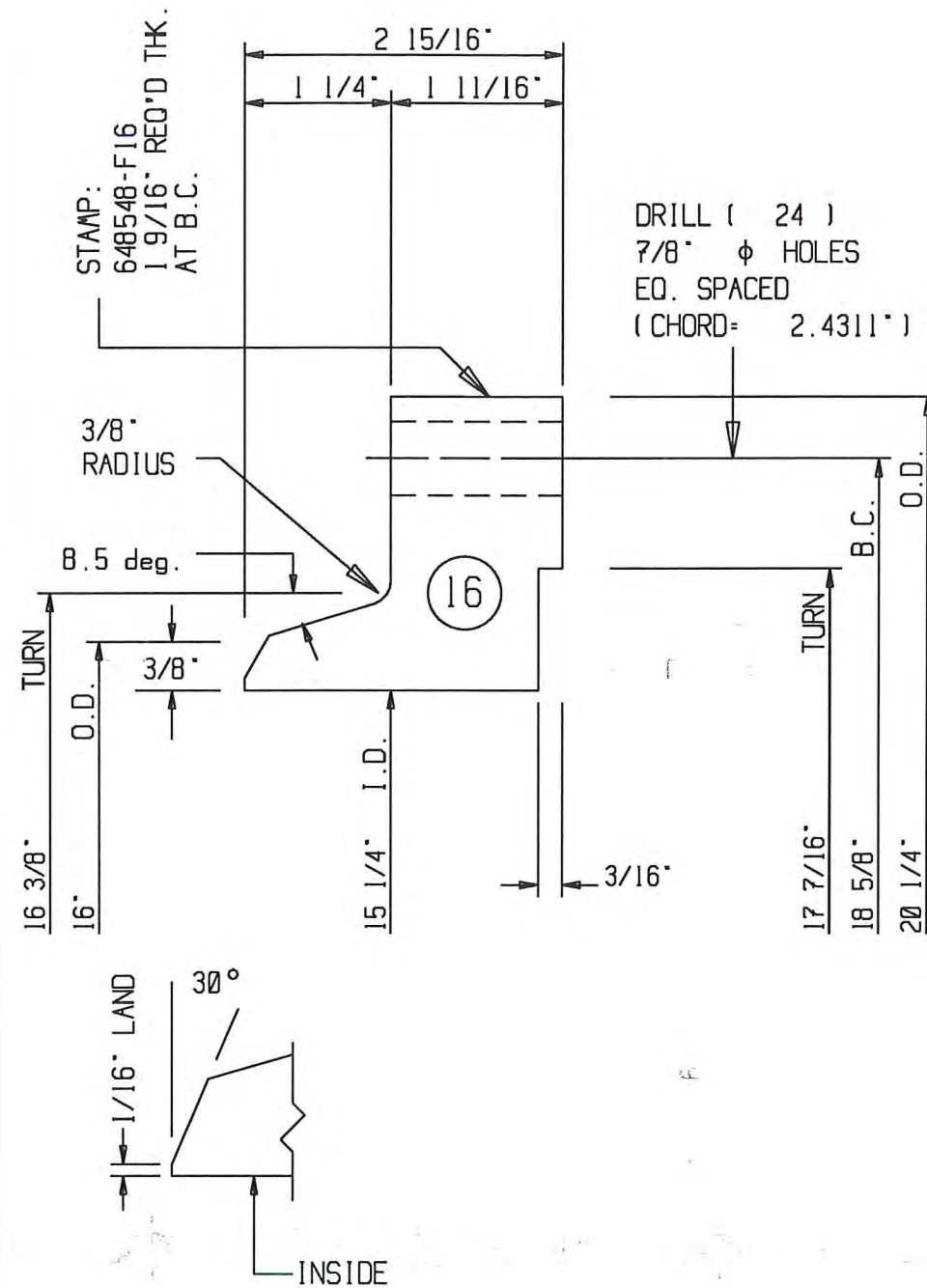
- 1) QUANTITIES SHOWN FOR ONE SET
(2)-SET(S) REQUIRED TOTAL.
ONE SET OF GASKETS TO BE USED IN EXCH. AND
(1) SET TO BE BOXED, MARKED WITH
P.O. & ITEM NO. & SHIPPED WITH EXCHANGER.
- 2 ALL JACKETED GASKETS TO HAVE
LAP OF GASKET NEAR SIDE.
- 3) ALL RADII TO BE 3/8"

NOTE: ALL TP 304L MATERIALS SHALL
CONTAIN LESS THAN 0.5% WT.
MOLYBDENUM.

					CUSTOMER: OLIN CORP. OHASTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
1	ADDED GASKET DETAIL	B.G	B.G	8-26-96	GASKET DETAILS			
0	FOR CUSTOMER APPROVAL/FAB.	JGR	V.S.	7-23-96				
NO.	REVISIONS	BY	CHK.	DATE CHK.	OHASTEDE	DRAWING NO. 648548	SHEET NO. 12	REV. 1



MAT'L: SA-182-F304L
3 GIRTH FLANGE (ONE) REQ'D.



MAT'L: SA-182-F304L
16 GIRTH FLANGE (ONE) REQ'D.

NOTES:

- 1) MACHINE ALL GASKET SURFACES TO 125 AARH.
- 2) ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.
- 3) FLANGE THICKNESS INCLUDES 1/8" FUTURE MACHINING ALLOWANCE.

Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96
NO.	REVISIONS	BY	CHK.	DATE CHK.

CUSTOMER: OLIN CORP.
OHMSTEDE JOB NO.: 648548
P.O. NO.: LC98765, R-9552
ITEM NO.: 171-039

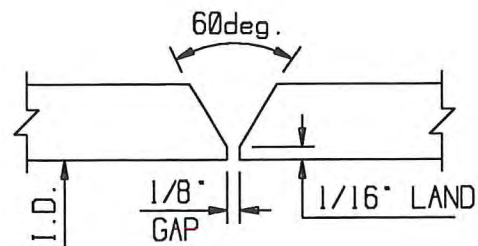
GIRTH FLANGES

OHMSTEDE

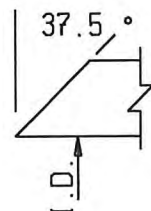
DRAWING NO.
648548

SHEET NO.
13

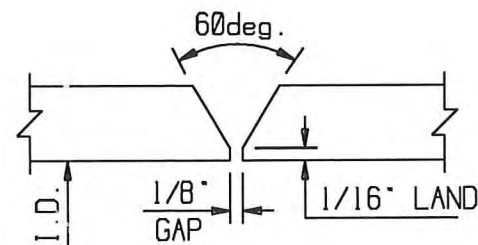
REV.
Ø



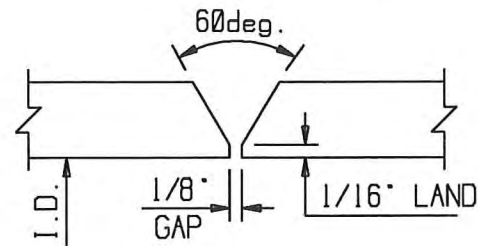
SHELL GIRTH SEAMS



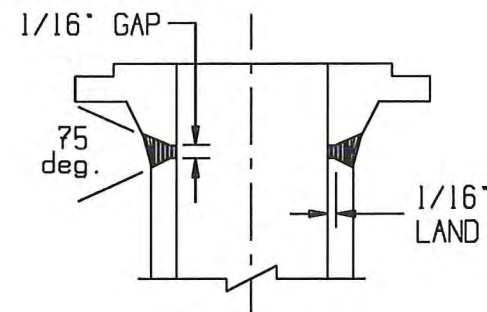
SHELL BOTH ENDS TO TUBESHEETS



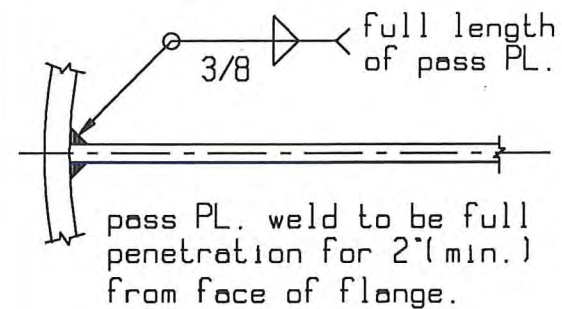
FRONT CHAN GIRTH SEAMS



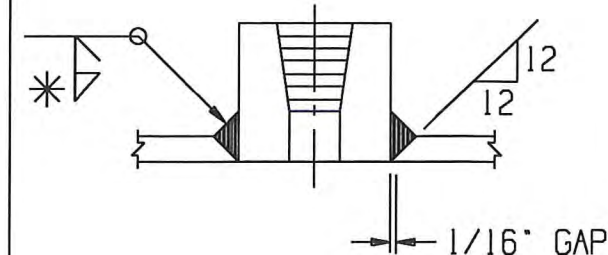
REAR CHAN GIRTH SEAMS



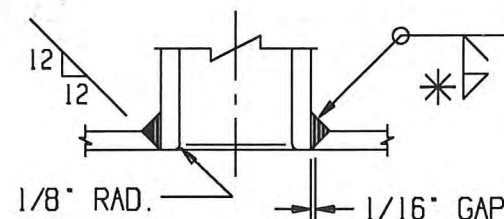
WELD-NECK FLANGE



PASS PLATE WELD



PIPE CPLG.



NOZZLE W/OUT PAD

GENERAL NOTES

- 1) ALL WELDING TO BE IN ACCORDANCE W/ASME CODE(SECTION IX)
- * 2) ALL FILLET WELDS TO BE 3/8" UNLESS NOTED OTHERWISE.

CUSTOMER: OLIN CORP.
OHMSTEDE JOB NO.: 648548
P.O. NO.: LC98765, R-9552
ITEM NO.: 171-039

WELD & BEVEL DETAILS

Ø	FOR CUSTOMER APPROVAL/FAB.	J.R	V.S	7-23-96
NO.	REVISIONS	BY	CHK.	DATE CHK.

OHMSTEDE

DRAWING NO. 648548	SHEET NO. 14	REV. Ø
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GENERAL NOTES:

- 1) ALL BOLT HOLES SHALL STRADDLE NATURAL CENTERLINES EXCEPT AS NOTED.
- 2) ALL EXTERNAL BOLTING SHALL BE XYLAN COATED
- 3) ALL MACHINED SURFACES AND THREADED CONNECTIONS SHALL BE COATED WITH A READILY REMOVABLE RUST PREVENTATIVE.
- 4) THE INSIDE AND OUTSIDE OF THE EXCHANGER SHALL BE CLEAN AND FREE OF ALL SLAG, LOOSE SCALE, DIRT, GRIT, WELD SPLATTER, PIECES OF METAL, PAINT, OIL, AND OTHER FOREIGN MATTER BEFORE HYDROTESTING AND PAINTING. THE EXCHANGER SHALL BE THOROUGHLY DRIED INSIDE AND OUTSIDE AFTER HYDROTEST. SURFACE PREPARATION AND PAINTING MATERIALS SHALL BE KEPT OUT OF THE EXCHANGER.
- 5) ALL THREADED CONNECTIONS SHALL BE PLUGGED TO PREVENT DAMAGE.
- 6) THE EXCHANGER ITEM NO. AND THE OHASTEDE SERIAL NO. SHALL BE DIE-STAMPED ON THE PERIPHERAL EDGE OF EACH BODY FLANGE AND TUBESHEET. THE EXCHANGER ITEM NO., THE PURCHASE ORDER., AND THE EXCHANGER SHIPPING WEIGHT SHALL BE STENCILED ON THE SIDE OF THE SHELL IN A CONSPICUOUS LOCATION, IN LETTERS AT LEAST 3" HIGH.
- 7) ALL MATING BODY FLANGES AND TUBESHEETS SHALL BE MATCH MARKED FOR PERMANENT ASSEMBLY REFERENCE.
- 8) PRIOR TO SHIPMENT AND AFTER HYDROTESTING, SHELL & TUBESIDE SHALL BE CLEANED USING A SOLUTION COMPOSED OF 1% TRISODIUM PHOSPHATE, 3% SODIUM CARBONATE, 1% SODIUM METASILICATE, AND 0.1% SURFACTANT. CIRCULATE SOLUTION AT 180 DEG. F FOR FOUR (4) HOURS. RINSE THOROUGHLY & DRAIN.
- 9) DURING HYDROTEST, TEST MUST BE CONDUCTED USING THE DESIGN GASKETS. HYDROTEST PRESSURE SHALL BE HELD FOR A PERIOD OF ONE HOUR. HYDROTEST SHALL BE CONDUCTED USING CLEAN POTABLE WATER. MINIMUM WATER TEMPERATURE FOR HYDROTEST SHALL BE 70 DEG. F. WATER TO HAVE LESS THAN 25ppm CHLORIDES IF IN CONTACT WITH NICKEL BEARING STAINLESS STEEL.
- 10) ALL GASKET SURFACES ON WELDED COMPONENTS SHALL BE FLAT TO WITHIN .002" MAXIMUM DEVIATION PER FOOT OF RAISED FACE CIRCUMFERENCE. MAXIMUM RADIAL DEVIATION SHALL BE .001".
- 11) PROVIDE HYDROTEST CERTIFICATION AND FLATNESS CERTIFICATION WITH DATA BOOK. FOR WELDED COMPONENT GASKET SURFACES.

					CUSTOMER: OLIN CORP. OHASTEDE JOB NO.: 648548 P.O. NO.: LC98765, R-9552 ITEM NO.: 171-039			
Ø	FOR CUSTOMER APPROVAL/FAB.	JGR	V.S.	7-23-96	GENERAL NOTES			
NO.	REVISIONS	BY	CHK.	DATE CHK.	OHASTEDE	DRAWING NO. 648548	SHEET NO. 15	REV. Ø