

FORM 3-A MANUFACTURE OF DATA SHEET FOR UNDER PRESSURE VESSELS

As required by the Department of the ARMY Code 1-10

1. Manufactured by BUTTINGTON LARSEN WORKS DIVISION, Federal Steel Tank Company, Philadelphia, Pa. 19335

2. Manufactured for E. I. DUPONT & COMPANY, INC., WILMINGTON, DEL. (DIST. - GIBBSTOWN, NEW JERSEY)
Name and address of Purchaser

3. Type HORIZ Kind Heat Exchanger Vessel No. 58139 (Serial No.) (State & State No.) Natl. Bd. No. 58139 Yr. Built 1964

Items 4-8 incl. to be completed for single wall vessels (such as air tanks), jackets of jacketed vessels, or shells of heat exchangers.

4. SHELL: Material SA-240 GR. 430 (Kind and Spec. No.) (Sig. or F.E.L. & Spec. Min. T.S.) (Min. Temp.) (State & State No.) Tens. Thick. 1/4 In. Cor. Allow. 0 In. Diam. 3 Ft. 2 In. Length 20 Ft. 0 In.

5. SEAMS: Long WDS H.T. YES X.R. 430 MAT'L COMPLETE Sectioned NO Efficiency 100% (Welded, Brl. Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No) (If riveted, describe seams fully on reverse side of form.)
Girth WDS H.T. YES X.R. 430 MAT'L COMPLETE Sectioned NO No. of Courses 6

6. HEADS: (a) Material SEE LINE 10 T.S. (b) Material T.S.
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Pressure (Convex or Concave)
(a) Top, bottom, ends Convex & Concave
(b) Channel Convex & Concave
(c) Floating Convex & Concave
If removable, bolts used (Material Spec. No. T.S., Size, Number) Other fastening (Describe or attach sketch)

7. STAYBOLTS: (Material) If hollow (Size of Hole) Attachment (Bolted, Welded) Pitch 12 X Diam. (Nominal)

8. JACKET CLOSURE: (Describe as cover & weld, bar, etc. If bar, give dimension. If bolted, describe or sketch)

9. Constructed for max. Min. temp. (when Hydrostatic Test 150 psi.)
allowable working press. 100 psi. at max. temp. 100 °F. less than -20°
Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material SA-240 GR. 430 (Kind & Spec. No.) Diam. 40 1/2 In. Thickness 1/8 In. Attachment WELDED (Welded, Bolted)
* Floating. Material: (Kind & Spec. No.) Diam. In. Thickness In. Attachment

11. TUBES: Material SA-268 GR. 430 O.D. 1 in. Thickness 12 BWG Number 6 Type (Straight)

Items 12-15 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

12. SHELL: Material T.S. (Kind and Spec. No.) (Sig. or F.E.L. & Spec. Min. T.S.) (Min. Temp.) (State & State No.) Tens. Thick. In. Allowance In. Diam. Ft. In. Length Ft. In.

13. SEAMS: Long WDS H.T. YES X.R. 430 MAT'L COMPLETE Sectioned NO Efficiency 100% (Welded, Brl. Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No) (If riveted, describe seams fully on reverse side of form.)
Girth WDS H.T. YES X.R. 430 MAT'L COMPLETE Sectioned NO No. of courses

14. HEADS: (a) Material T.S. (b) Material T.S. (c) Material T.S.
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Pressure (Convex or Concave)
(a) Top, bottom, ends Convex & Concave
(b) Channel Convex & Concave
(c) Floating Convex & Concave
If removable, bolts used (a) (Material Spec. No. T.S., Size, Number) (b) (Material Spec. No. T.S., Size, Number) (c) (Material Spec. No. T.S., Size, Number) Other fastening (Describe or attach sketch)

15. Constructed for max. 125 psi. at max. temp. 700 °F. Min. temp. (when Hydrostatic Test 236 psi.)
allowable working press. 125 psi. at max. temp. 700 °F. less than -20°
Items below to be completed for all vessels where applicable

16. SAFETY VALVE OUTLETS: Number Size Location

17. NOZZLES: Number Diam. or Size Type FLANGED Material SA-181 GR. I Thickness PER CODE Reinforce. Matl. How Attached Welded
Shell in 12"
Shell out 12"
Tubes in
Tubes out

18. INSPECTION per UG-46(X5) Manholes, No. Size Location

OPENINGS: Handholes, No. Size Location

Threaded, No. 12, 4, 2 Size 2 1/4" Location SHELL & EXPANSION JOINT HEADS

19. SUPPORTS: Shift NO Lugs Legs Other Attached SHELL WELDED
(Yes or No) (Rigidity) (Number) (Describe) (Where & How)

20. REMARKS: HEAT EXCHANGER (LESS BONNETS) "CONTENTS UNKNOWN"
NOT DESIGNED NOR CONSTRUCTED FOR LETHAL SERVICE
Dwg. No. A-2005 Cont. P.O. HR-66-125 D.L.W. Order No. 64H60
(Brief description of the vessel, as Air Tank, After Cooler, Jacketed Cooler, etc. State contents of each part.) (Over)

If postweld heat treated. List other internal or external pressures with coincident temperature when applicable.

VESSSEL SHELL EQUIPPED WITH (1) ONE EXHAUSTION PUMP FABRICATED FROM
(2) TWO FLANGED & FLARED HEADS, EACH ONE WITH ONE ALATE, 70,000-P.S.I.
48" O.D. x 3/16" THK.
DUPONT ORD #HR-66-125, DUPONT ITEM #FA-EM115, MFR'S ORDER #64H60

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 Unfired Pressure Vessels.
Date JUNE 29 19 64 Signed Robert F. Jones
Downingtown Iron Works Division
Pressed Steel Tank Company
(Manufacturer)

#174
Certificate of Authorization Expires 12/31/64

* MATL. - GRADE 2 TITANIUM, O.D. - 1", THK. #16BWG, No. 5, STRAIGHT
PER CASE 1258-3

CERTIFICATE OF SHOP INSPECTION

VESSSEL MADE BY DOWNINGTOWN IRON WORKS DIVISION, Pressed Steel Tank Co., at Downingtown, Pa.

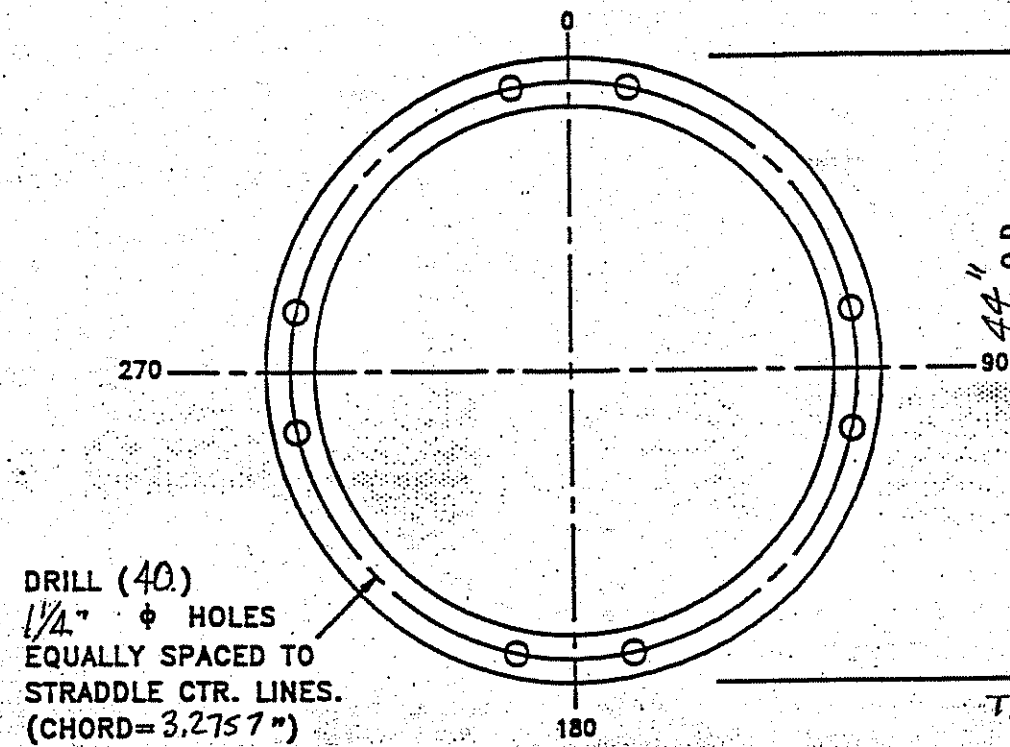
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of PENNSYLVANIA and employed by THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY of HARTFORD, CONN. have inspected the pressure vessel described in this manufacturer's data report on AUG 4 1964 19 64, and state that to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code.

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.

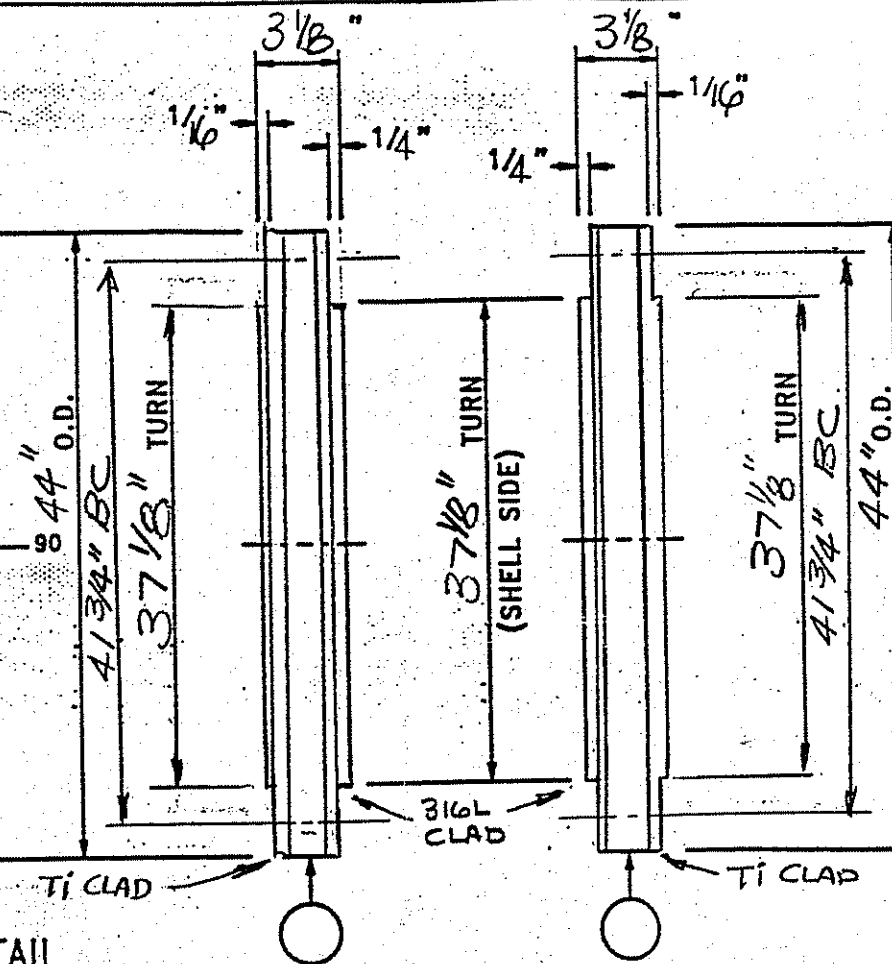
Date AUG 4 1964
H. J. Rontin
Inspector's Signature
Communications National Board No. 4236
ASME Board or State and No.

ES-5531

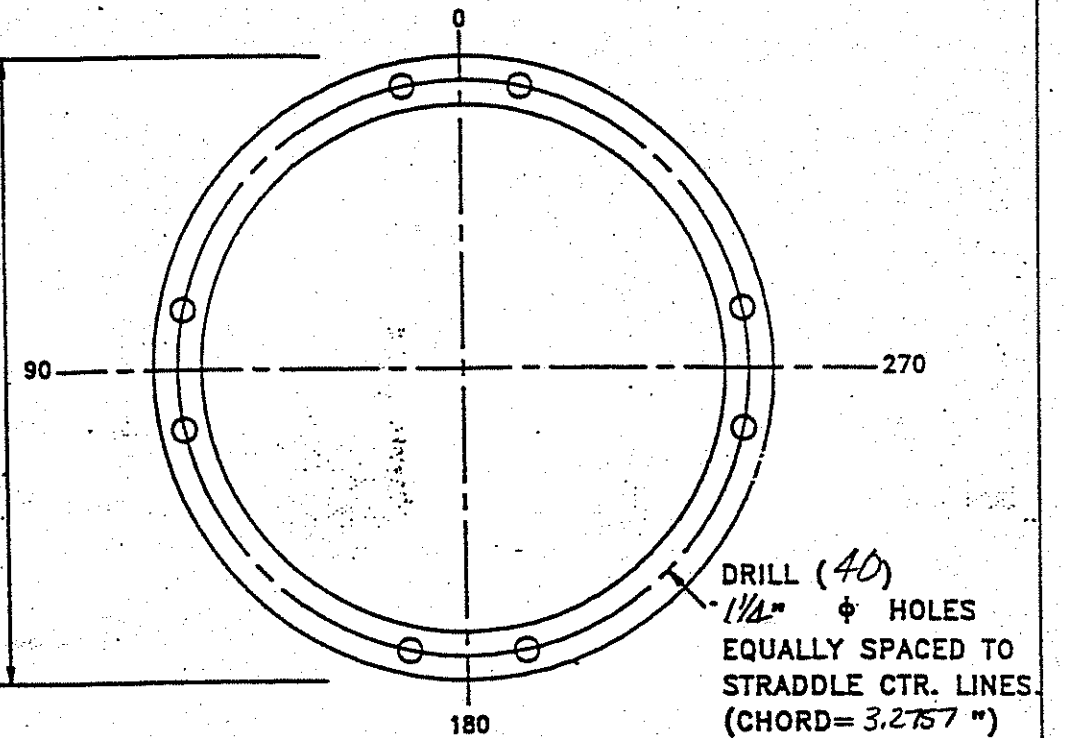
DRILL & TAP $\frac{3}{4}$ " DEEP FOR (8) - $\frac{1}{2}$ " DIA.
TIE RODS ON SHELL SIDE OF TUBESHEET.
DO NOT DRILL THRU!! SEE DETAIL "A"
(SEE TUBE LAYOUT FOR LOCATIONS.)



FRONT TUBESHEET DETAIL



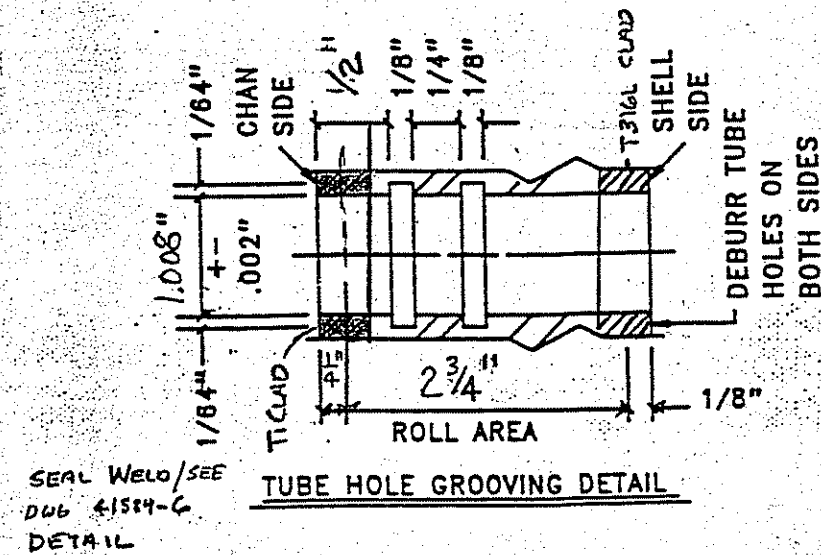
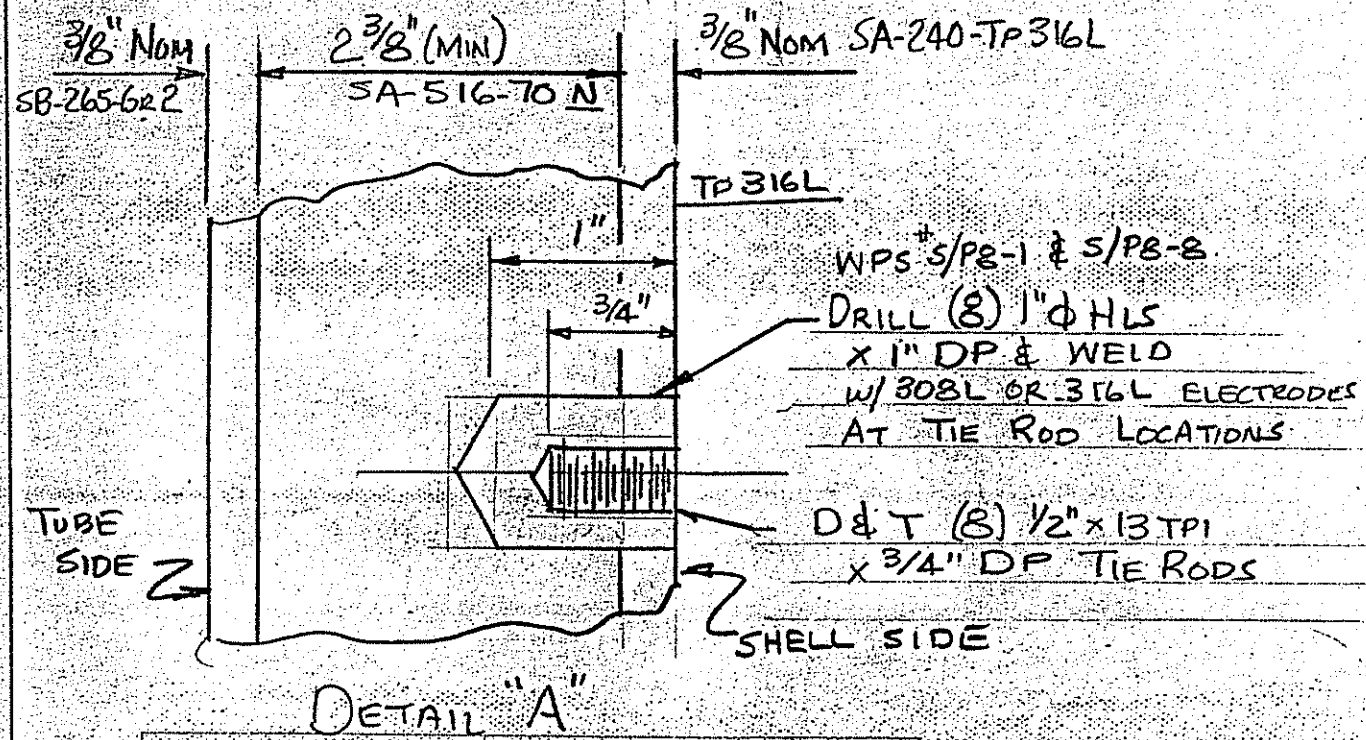
BACK TUBESHEET DETAIL



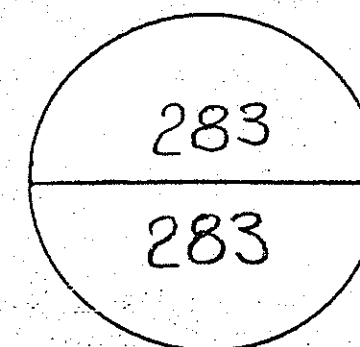
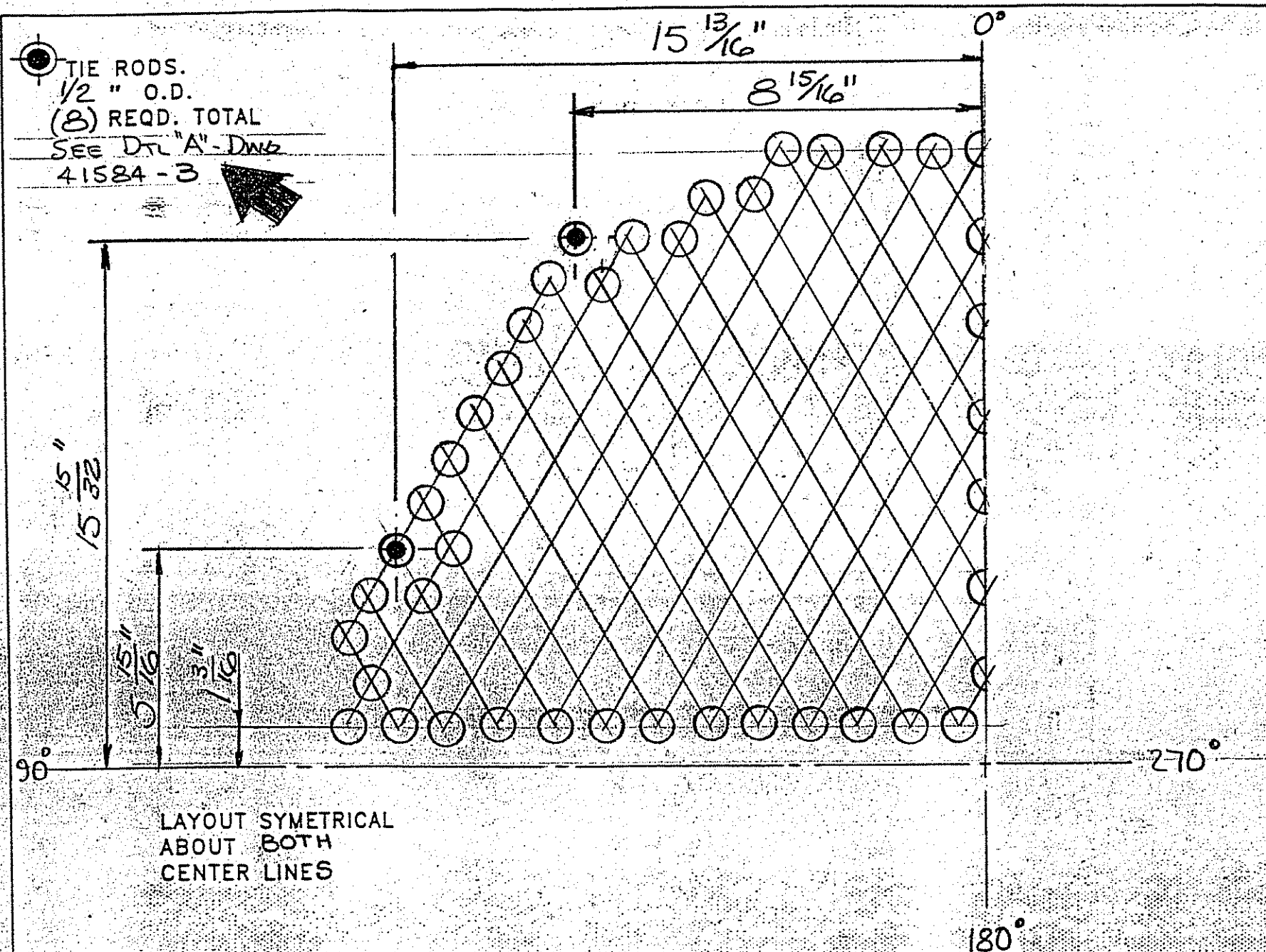
DRILL (40)
- 1 1/4" ϕ HOLES
EQUALLY SPACED TO
STRADDLE CTR. LINES.
(CHORD = 3.257")

NOTES:

- 1) MACHINE ALL GASKET SURFACES TO
125 RMS.



			TUBESHEET DETAILS		
			DWN. BY EJ	OHMSTEDE	
1	4-30	PER CUST / FOR FAR	DATE 4-3-91		
0	4-3	FOR CUST APVL	CKD. BY J		
NO.	DATE	REVISIONS	DWG. NO.	41584-3	REV. 1



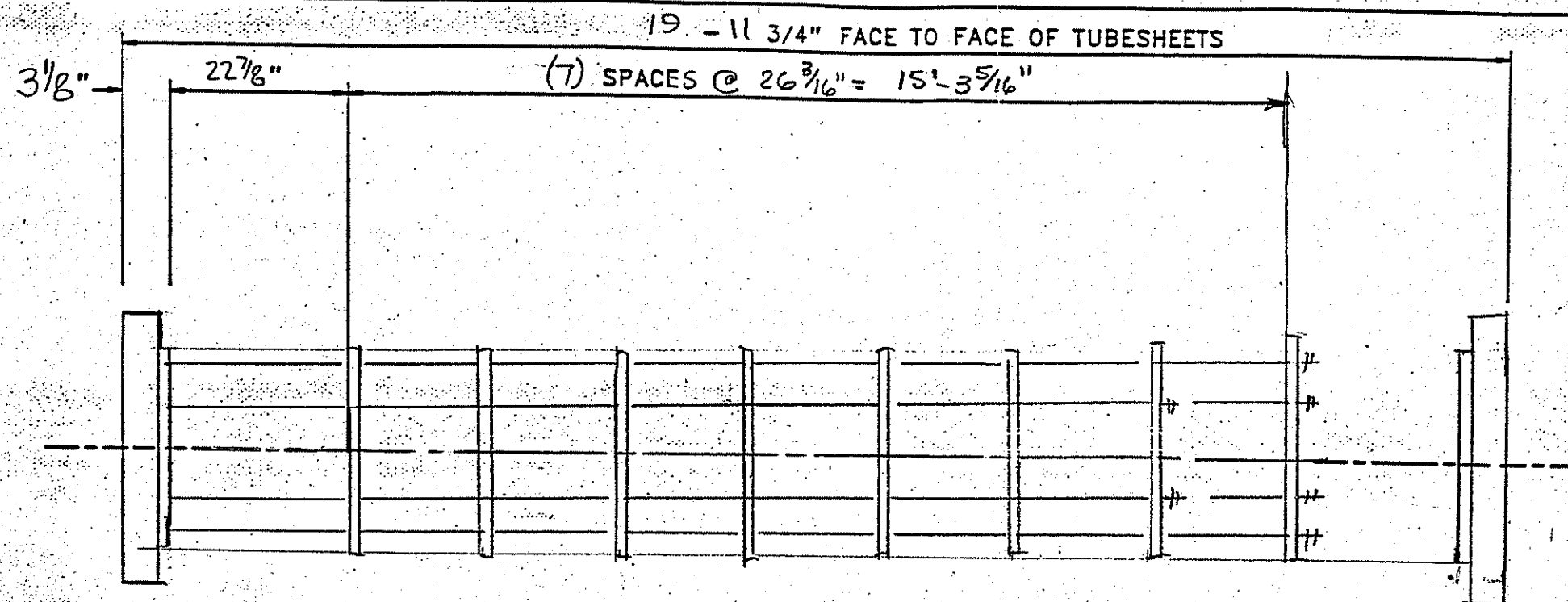
TUBE DISTRIBUTION

NOTES:

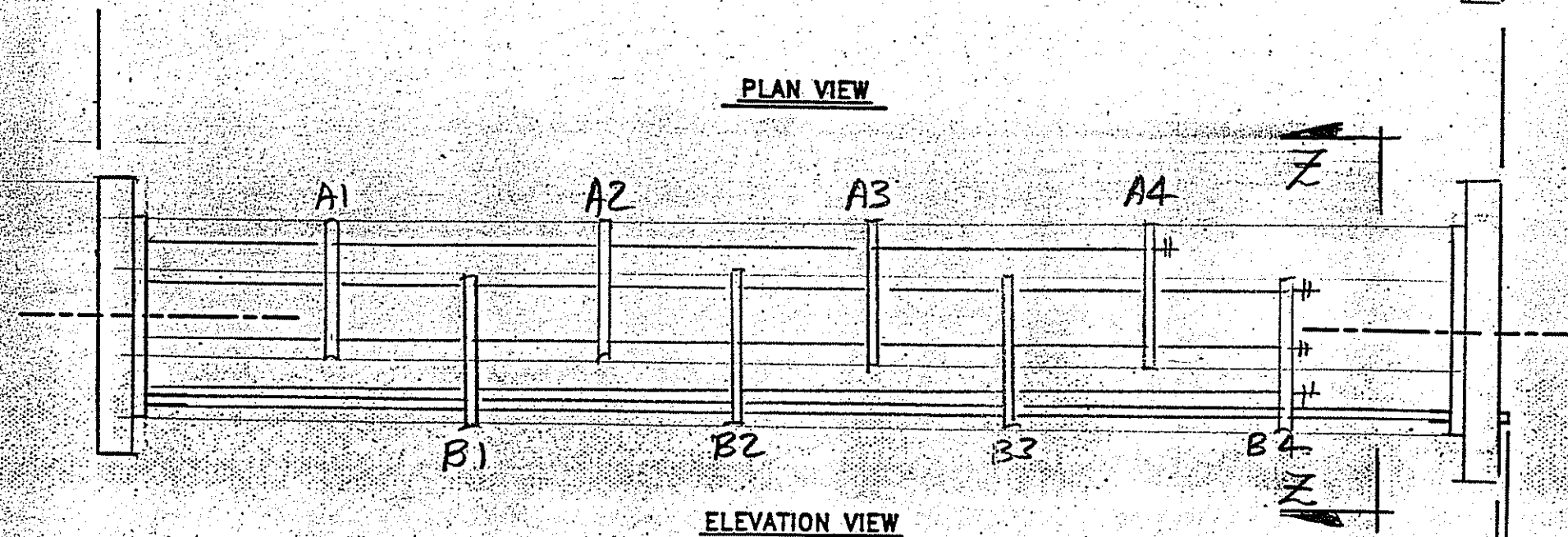
- 1) DRILL AND REAM TUBE HOLES IN TUBESHEETS TO 1.008" $\pm$.002" DIA. FOR 566 - 1" O.D. TUBES.
- 2) TUBE PITCH = 1 ³/₈" Δ
- 3) NUMBER OF PASSES = 2
- 4) SEE DRAWING 41584-3 FOR TUBE GROOVING DETAILS.
- 5) BAFFLE O.D. = 37 ¹/₁₆"
- 6) O.T.L. 36.11"

VIEW LOOKING AT SHELL SIDE OF FRONT TUBESHEET

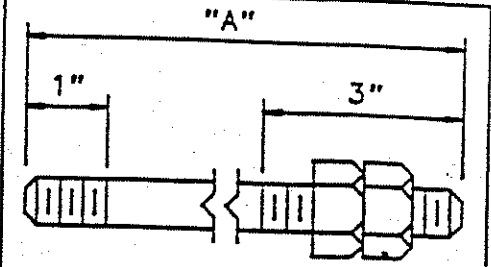
			TUBE LAYOUT	
			DWN. BY EJ	OHMSTEDE
1	4/30	PER CUST / FOR FAB	DATE 4-3-91	
0	4-3	FOR CUST APV'L	CKD. BY	
NO.	DATE	REVISIONS	DWG. NO.	REV.
			41584-4	1



PLAN VIEW

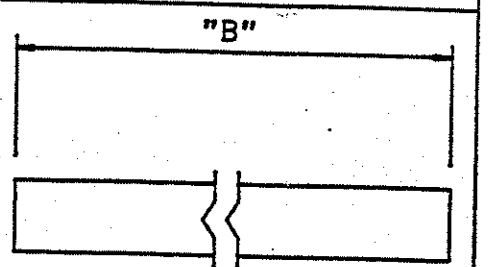


ELEVATION VIEW



MAT'L: TP 316 5/5
1/2" O.D. TIE RODS

REQ'D.	"A"
A 6	17'-5"
B 2	15'-4"
C	
D	



MAT'L: TP 316 5/5
3/4" O.D. SPACER TUBING

REQ'D.	"B"
1 6	22 7/8"
2 2	49 1/16"
3 28	25 1/16"
4 12	51 7/8"
5	
6	
7	

NOTES:

1) SEE DWG. NO. 41584-6 FOR SECTION AND VIEW DETAILS.

BUNDLE DETAILS			
DWN. BY		OHMSTEDE	
DATE		4-3-91	
CKD. BY		DWG. NO. 41584-5	
NO.	DATE	REVISIONS	REV.
1	4-30	PER CUST. / FOR FAR	
0	4-3	FOR CUST. APVL	