

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

REFERENCE ONLY
FOR FRONT
CHANNEL !

1. Manufactured by Metalforms, Inc., Cheek, Texas
(Name and address of manufacturer)
2. Manufactured for Scientific Design Co., Two Park Avenue, New York, N. Y. 10016
(Name and address of purchaser)
3. Location of Installation Houston Chemical Co., Gulf States Rd., Beaumont, Texas
(Name and address)
4. Type Horizontal Vessel No. 1848 --- 1848
(Horiz., or vert. tank) (Mfg'r's Serial No.) (CRN) (Drawing)
70 Year Built 1976
(Nat'l Brd No.)
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 Rules, Section VIII, Division 1 1974 and Addenda to Winter 74 and Code Case no. _____
(Year) (Date)
Special service per UG-120(d) _____
Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: _____

(Name of part, item number, mfg'r's name and identifying stamp)

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

6. Shell: Material SA-285-C Nominal Thickness 1/2 in. Corrosion Allowance 1/16 in.
(Spec. No., Grade)
Diam. 2 ft 6 in. Length 19 ft 8 5/8 in.

CERTIFICATE OF 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.

Date 9/10/76 Signed METALFORMS, INC. by L. E. Jolley
(Manufacturer) (Representative)

"U" Certificate of Authorization No. 8870 expires February 28, 19 77

CERTIFICATE OF SHOP INSPECTION

Vessel made by METALFORMS, INC. at Cheek, Texas

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Texas and employed by Hartford Steam Boiler of Insp. & Ins. Co. have inspected the pressure vessel described in this Manufacturers' Data Report on 9-10 19 76, 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 9-14-76
Signed A. C. Barnes Commissions National Board 7715
(Inspector) (Nat'l Board, State, Province and No.)

CERTIFICATE OF COMPLIANCE FOR FIELD WORK

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.

Date _____ Signed _____ by _____
(Manufacturer) (Representative)

"U" Certificate of Authorization No. _____ expires _____, 19 _____

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or 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 this 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 Board, State, Province and No.)

FORM U-1 (BACK)

REFERENCE
ONLY FOR
FRONT
CHANNEL

7. Seams: Longitudinal Welded D.B. R.T. Spot Efficiency 85 %
(Welded, Dbl., Sngl., Lap, Butt) (Spot or Full)

H.T. Temp -- F Time -- Girth Welded D.B.
(Welded, Dbl., Sngl., Lap, Butt)

R.T. Spot No. of Courses 3
(Spot, Partial, or Full)

8. Heads: (a) Material _____ (Spec. No., Grade) _____ (b) Material _____ (Spec. No., Grade) _____

Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a) _____	_____	_____	_____	_____	_____
(b) _____	_____	_____	_____	_____	_____

Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) _____	_____	_____	_____
(b) _____	_____	_____	_____

If removable, bolts used (describe other fastenings) _____
(Material, Spec. No., Gr., Size, No.)

9. Type of Jacket _____ Proof Test _____

10. Jacket Closure _____ If bar, give dimensions _____
(Describe as ogee & weld, bar, etc.)

If bolted, describe or sketch. _____

11. Constructed for max. allowable working pressure 320 psi at max. temp. 470 F. Min. temp. (when less than -20 F) -- F. Hydrostatic, ~~mechanical~~ test pressure 480 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: Stationary—Material SA-516-70 (2) Diam. 29 3/4 in.
(Spec. No., Gr.) (Subject to pressure)

Nominal Thickness 1 3/4 in. Corrosion Allowance 1/8 in. Attachment Welded
(Welded, Bolted)

Floating—Material _____ Diam. _____ in.
(Spec. No., Gr.)

Nominal Thickness _____ in. Corrosion Allowance _____ in.

Attachment _____

13. Tubes: Material A-214 O.D. 3/4 in. Nominal Thickness 14 MW ~~xx~~ gauge
(Spec. No., Gr.)

Number 705 Type Straight
(Straight or "U")

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

14. Shell: Material SA-285-C Nominal Thickness 1/2 in. Corrosion Allowance 1/8 in.
(Spec. No., Gr.)

Diam. 2 ft 6 in. Length 2 ft 5 1/8 in.

15. Seams: Longitudinal Welded D.B. R.T. Spot Efficiency 85 %
(Welded, Dbl., Sngl., Lap, Butt) (Spot or Full)

H.T. Temp -- F Time -- Girth Welded D.B.
(Welded, Dbl., Sngl., Lap, Butt)

R.T. Spot No. of courses 1
(Spot, Partial or Full)

16. Heads: (a) Material SA-516-70 (b) Material SA-285-C
(Spec. No., Grade) (Spec. No., Grade)

Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a) <u>End</u>	<u>1 7/8"</u>	<u>1/8"</u>	_____	_____	_____
(b) <u>End</u>	<u>3/8" Nom.</u>	<u>1/8"</u>	_____	_____	<u>2:1</u>

Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) _____	_____	<u>29 3/4"</u>	<u>Concave</u>
(b) _____	_____	_____	_____

If removable, bolts used (describe other fastenings) SA-193-B7; 3/4"; 32
(Material, Spec. No., Gr., Size, No.)

17. Constructed for max. allowable working pressure 133 psi at max temp. 400 F. Min. temp. (when less than -20 F) -- F. Hydrostatic, ~~mechanical~~ test pressure 200 psi.

Items below to be completed for all vessels where applicable

18. Safety Valve Outlets: Number _____ Size _____ Location In Line

19. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
<u>CH Inlet</u>	<u>1</u>	<u>8"150#</u>	<u>RFWN</u>	<u>SA-106-B</u>	<u>.500"</u>	<u>Integral</u>	<u>Welded</u>
<u>Ch.Outlet</u>	<u>1</u>	<u>16"150#</u>	<u>RFWN</u>	<u>SA-53-B</u>	<u>.500"</u>	<u>SA-285-C</u>	<u>Welded</u>
<u>Sh.Inlet</u>	<u>1</u>	<u>8"300#</u>	<u>RFWN</u>	<u>SA-106-B</u>	<u>.500"</u>	<u>SA-285-C</u>	<u>Welded</u>
<u>Sh.Outlet</u>	<u>1</u>	<u>6"300#</u>	<u>RFWN</u>	<u>SA-106-B</u>	<u>.432"</u>	<u>SA-285-C</u>	<u>Welded</u>

20. Inspection Openings:

Manholes No. _____ Size _____ Location _____

Handholes No. _____ Size _____ Location _____

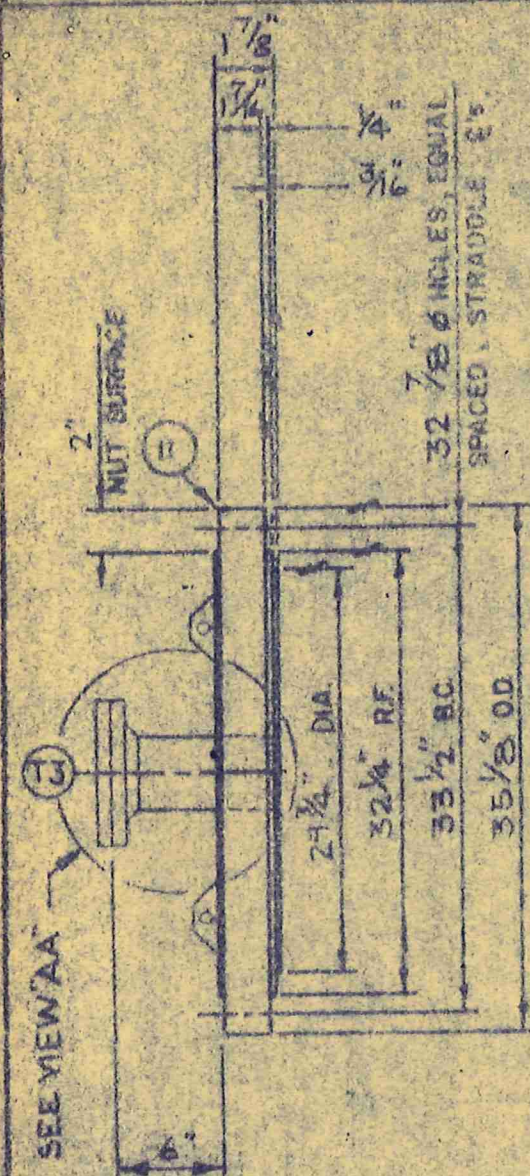
Threaded No. _____ Size _____ Location _____

21. Supports: Skirt No Lugs None Legs None Other Saddles
(Yes or no) (No.) (No.) (Describe)

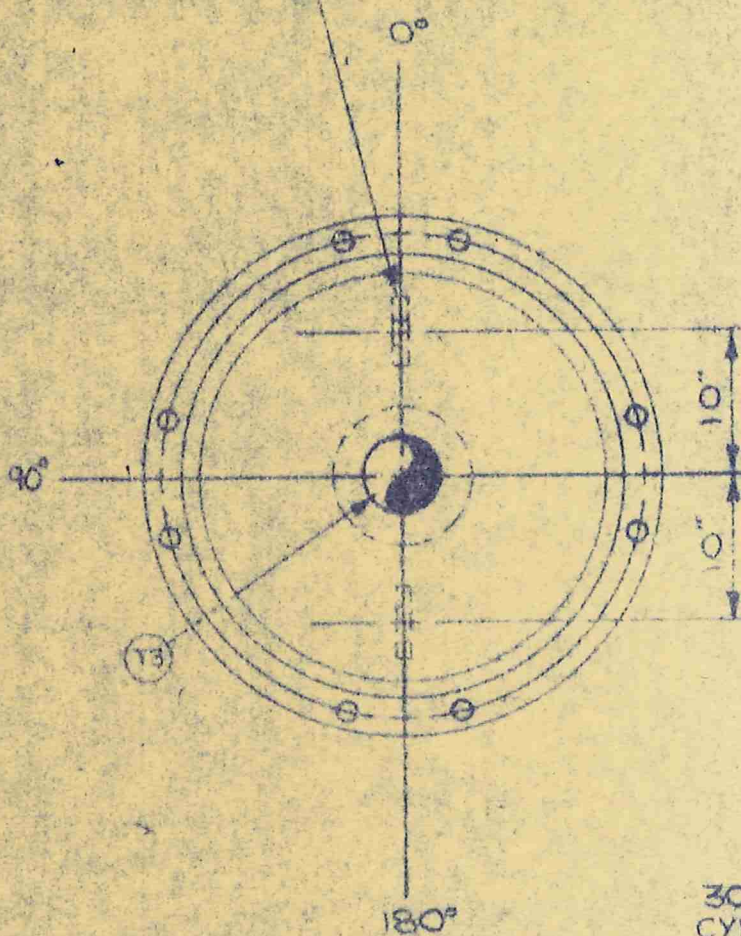
Attached Shell Welded
(Where and how)

22. Remarks: One (1) First Effect Reboiler (Item: E 1530) Built in accordance with ASME Code Section VIII, Div. I, 1974 Edition & all addenda thereto.

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CHANNEL ONLY!



(2) LIFTING LUG
REQ'D SEE DETAIL
SHEET NO 12



CHANNEL COVER DETAIL

MAT'L - SA-515-70

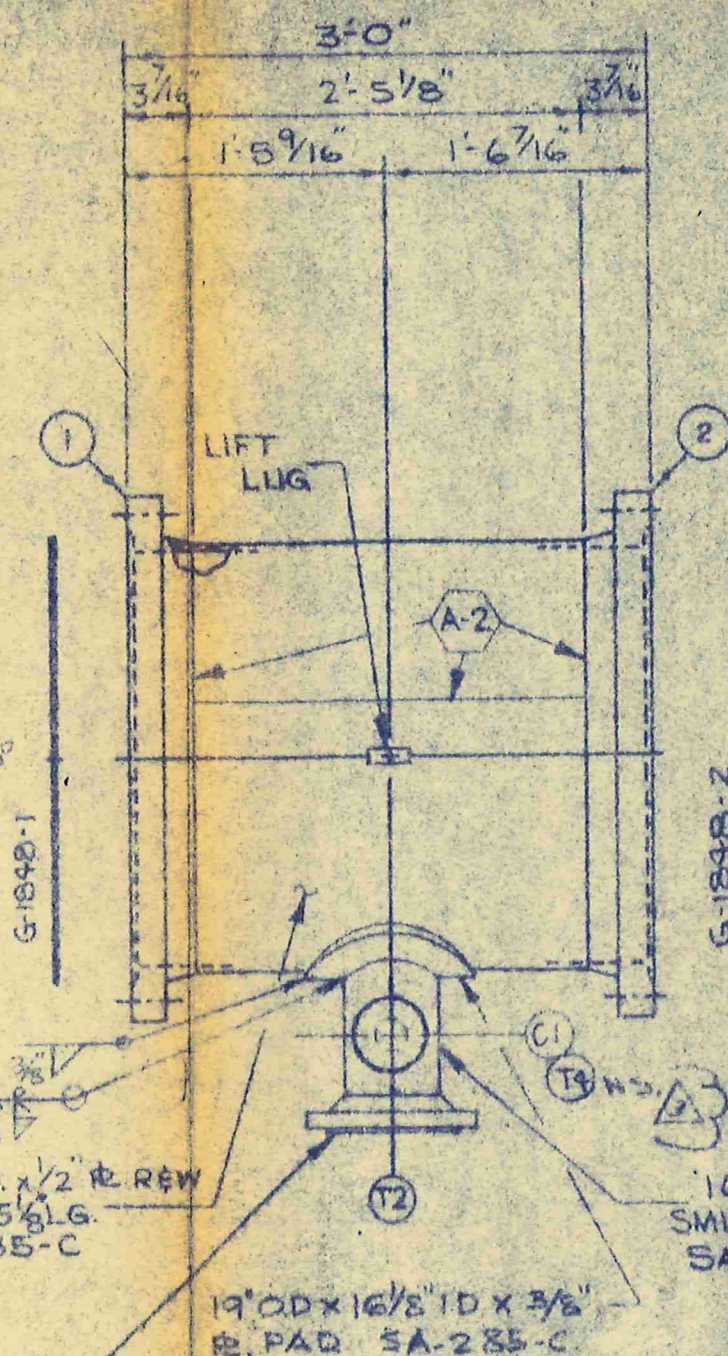
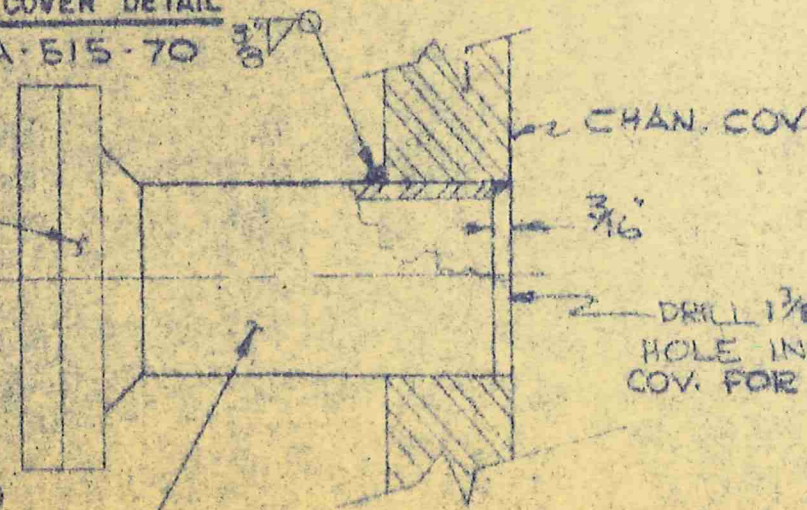
Shop Note:
ALL 125 RMS GASKET
SURFACE FINISH

1" 150° RF WN
FLG. 7 BLIND
SA-181-1
XX STR BORE

T3

1" XX-STD. (358)
SMLS PIPE
5 3/8 LG. SA-53-B

VIEW "AA"



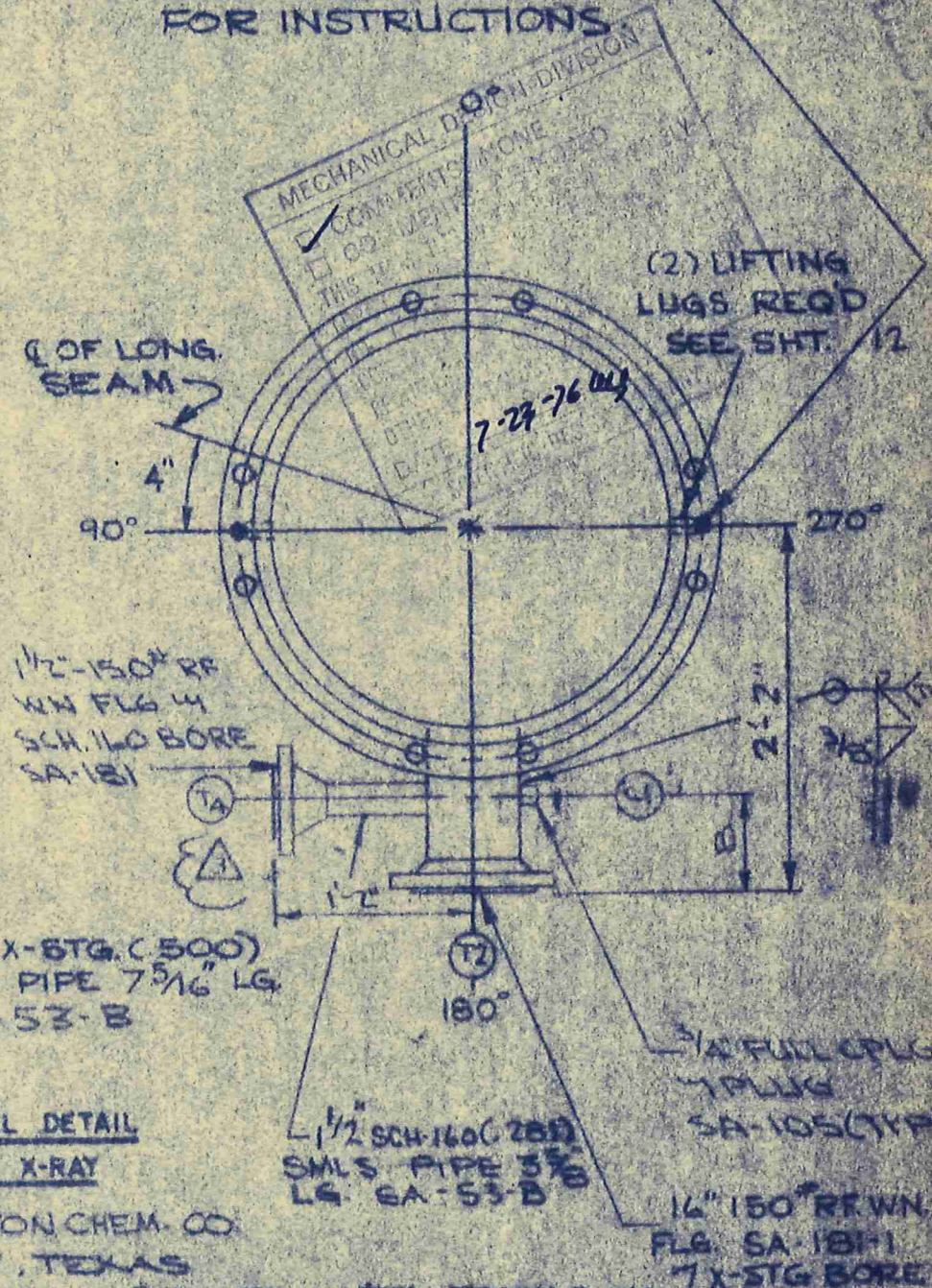
CHANNEL DETAIL

SPOT X-RAY

FOR HOUSTON CHEM. CO.
BEAUMONT, TEXAS

SCIENTIFIC DESIGN CO. INC.
P.O. NO. 1607-012
ITEM NO E-1530
CHANNEL "A" DTLS

(2) 3/4" Ø JACKSCREWS IN EACH
BODY FLG. SEE SHT. 10
FOR INSTRUCTIONS.



REVISION Δ PER CUST.
APPROV. 1-27-76
REV. PER ENGR'S MRP
5-24-76
REV. PER CUST 6-5-76

METALFORMS, INC.
P.O. BOX 3588
BEAUMONT, TEXAS 77704

CHANNEL "A" DETAILS
CLIENT EQUIP. NO: 23-08-021

DRWN	KRJ	12-7-75
CHK'D	FPE	12-12-75
APV'D	LEF	12-12-75

NO EXCHANGERS REQ'D. ONE
ITEM NO. E-1530 TYPE BELL
DWG. NO. 1848 SHEET 3 OF 12