

SHE NO. 79-25 B

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

ITEM NO. E-6100-4

1. Manufactured by SOUTHERN HEAT EXCHANGER CORPORATION TUSCALOOSA, ALABAMA

2. Manufactured for HERCOFINA WILMINGTON, NORTH CAROLINA E-6100-4

3. Location of installation HERCOFINA WILMINGTON, NORTH CAROLINA

4. Type HEAT EXCHANGER Vessel No. 79-25 B NONE SM-1245 2890 Year Built 1979

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 and Addenda to UHWR 178 and Code Case no. 177-7

#104286

Special service per UG-120(d) NONE Manufacturers' Partial Data Reports properly identified and signed by Commissioned inspectors have been furnished for the following items of the report: BELLOWS EXP. JOINT, AMETEK N.S. BELLOWS DIVISION, SER. NO. 3647-U2-2737

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

6. Shell: Material SA-516-70 Nom. Thickness 1/2 in. Corrosion Allowance 1/16 in. Diam. 3 ft. 6 in. Length 21 ft. 11 1/2 in

7. Seams: DBL. Longitudinal BUT R.T. NONE Efficiency 85 % H.T. Temp 0 F Time 0 Girth BUT R.T. SPOT No. of Courses 3

8. Heads: (a) Material SA-516 GR70 (b) Material

Table with 10 columns: 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). Row (a) HP. DOME, 3/8", 1/16", 2:1, CONCAVE.

If removable, bolts used (describe other fastenings) NONE (WELDED TO SHELL)

9. Type of Jacket NONE Proof Test

10. Jacket Closure NONE If bar, give dimensions If bolted, describe or sketch.

11. Constructed for max. allowable working pressure 175 psi at max. temp. 375 F Min. temp. (when less than -20 F) F. Hydrostatic, pneumatic, or combination test pressure 265 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: Stationary Material * SA-240 TP 304 Diam. 42 in. Nominal Thick. 2 1/8 in. Corrosion Allow. 1/16 in. Attachment WELDED

Floating Material NONE Diam. in. Nominal Thick. in. Corrosion Allow. in. Attachment

13. Tubes: Material SA-249 TP 304 O.D. 1 1/4 in. Nominal Thickness 16 gauge Number 583 Type STRAIGHT

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

14. Shell: Material SA-240 TP 304L Nominal Thickness 5/16 in. Corrosion Allowance 0 in. Diam. 3 ft. 6 in. Length 3 ft. 5 1/2 in.

15. Seams: DBL. Longitudinal BUT R.T. SPOT Efficiency 85 % H.T. Temp 0 F Time 0 Girth BUT R.T. NONE No. of courses 3

16. Heads: (a) Material SA-240 TP 304 L (b) Material SA-516 GR70 LINED WITH 1/4" THK. SA-240 TP 304 L

Table with 10 columns: 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). Row (a) END, 5/16", 0, 20 degrees, CONCAVE. Row (b) END, 2 5/8" (TOTAL), 0, 46", FLAT.

If removable, bolts used (describe other fastenings) SA-193-B7(72) EA. 9/8"-11.

17. Max. allowable working pressure 150 psi at max temp. 375 F. Min. temp. F. Hydro. test pressure 225 psi.

Items below to be completed for all vessels where applicable

18. Safety Valve Outlets: Number NONE Size Location

79-25 B

19. Nozzles:

N.B. NO. 289

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
TUBE IN	1	24"	FLANGED	SA-240-304L	.3125"	INHERENT	WELDED
TUBE OUT	1	24"	"	"	.3125"	SA-240-304L	"
SHELL IN-OUT	2	10"	"	SA-S385MS	.365"	INHERENT	WELDED

20. Inspection Openings:

Manholes No. NONE Size _____ Location _____
 Handholes No. NONE Size _____ Location _____
 Threaded No. NONE Size _____ Location _____

21. Supports: Skirt YES Lugs _____ Legs 4 Other _____ Attached TO SHELL WELDED.
(Yes or no) (No.) (No.) (Describe) (Where and how)

22. Remarks: _____

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 Aug. 24, 1979 Signed SO. HEAT EXCHANGER CORP. by James J. Nelson
(Manufacturer) (Representative)

"U" Certificate of Authorization No. 7037 expires FEB. 23, 1982

CERTIFICATE OF SHOP INSPECTION

Vessel made by SO. HEAT EXCHANGER CORP. at TUSCALOOSA, ALABAMA
 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 COMMERCIAL UNION INSURANCE GROUP
 of BOSTON, MASS. have inspected the pressure vessel described in this Manufacturers' Data

Report on 7/30/79, 1979, 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 7/31/79
 Signed Jim Kowalski Commissions 5446
(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

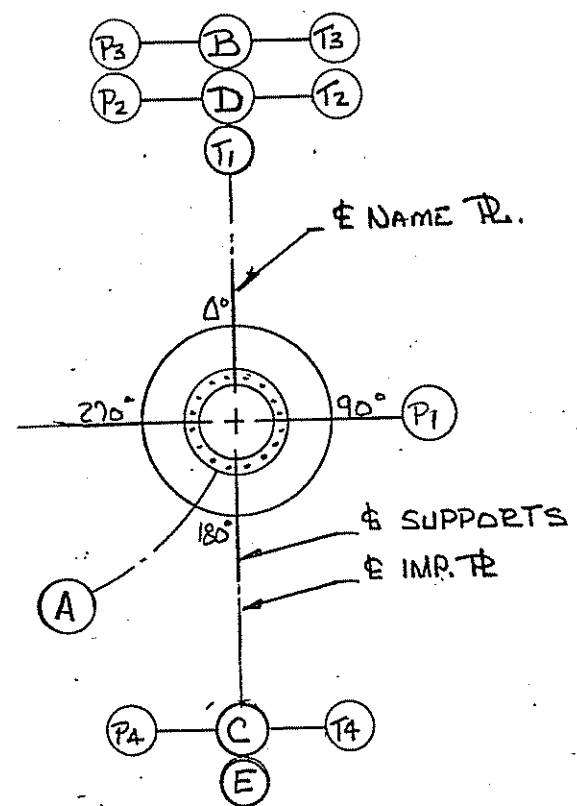
I, the undersigned, holding a valid commission issued by the National Board and Pressure Vessel Inspectors and the State or Province of _____ and employed by _____

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.

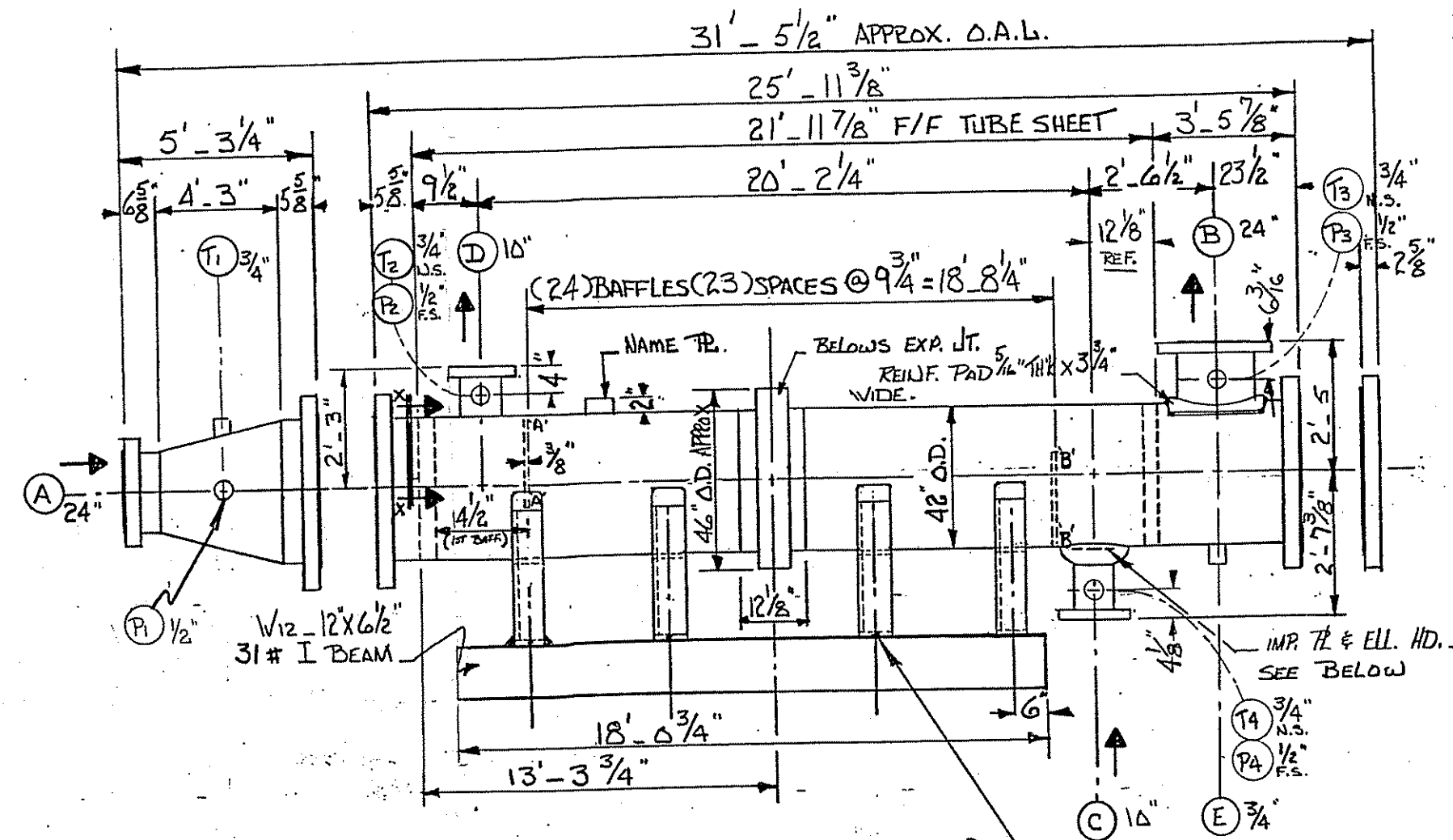
The described vessel was inspected and subjected to a hydrostatic test of _____ psi.
 By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturers' Data Report. Furthermore, neither the inspector 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.)

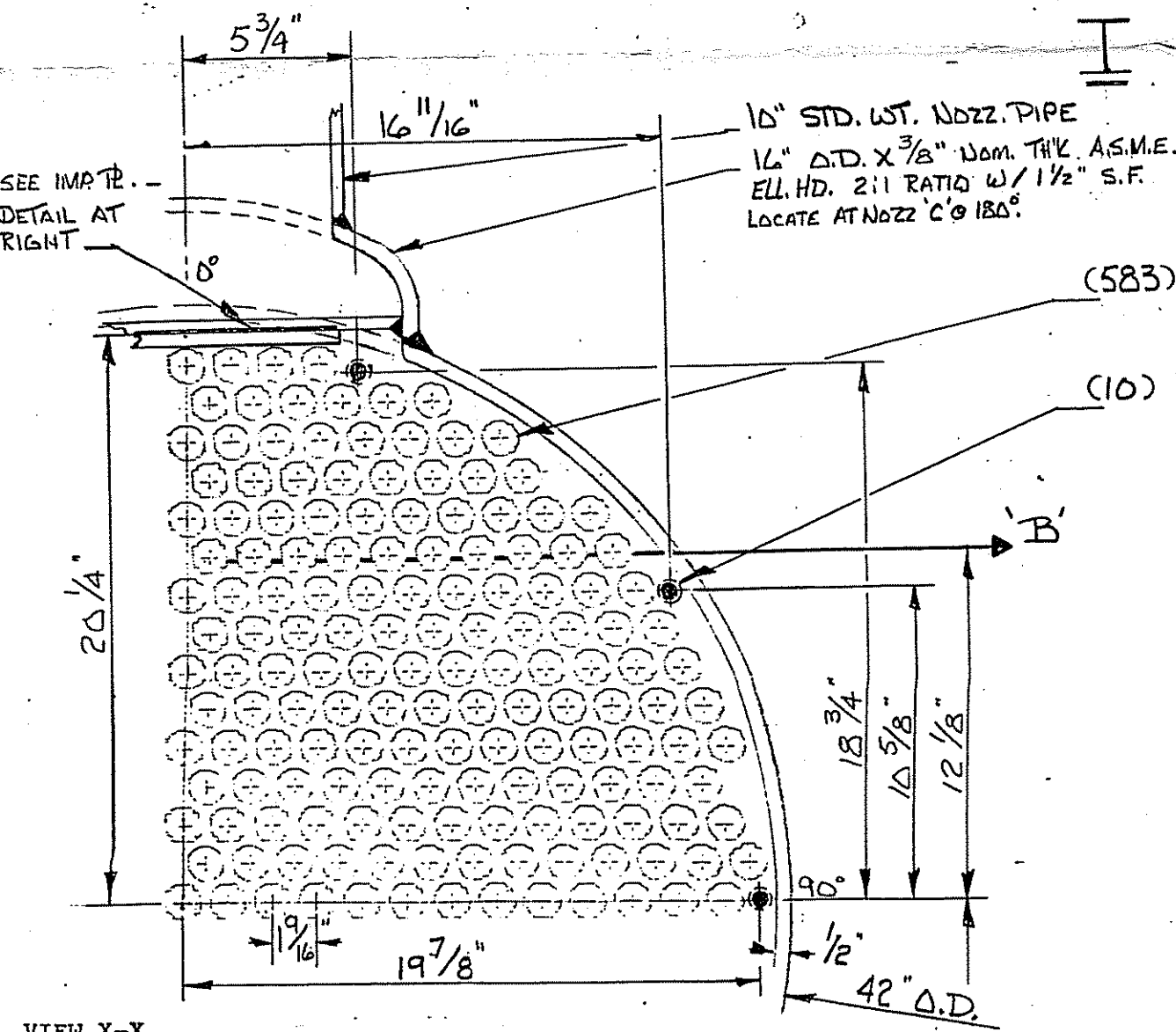
IV I



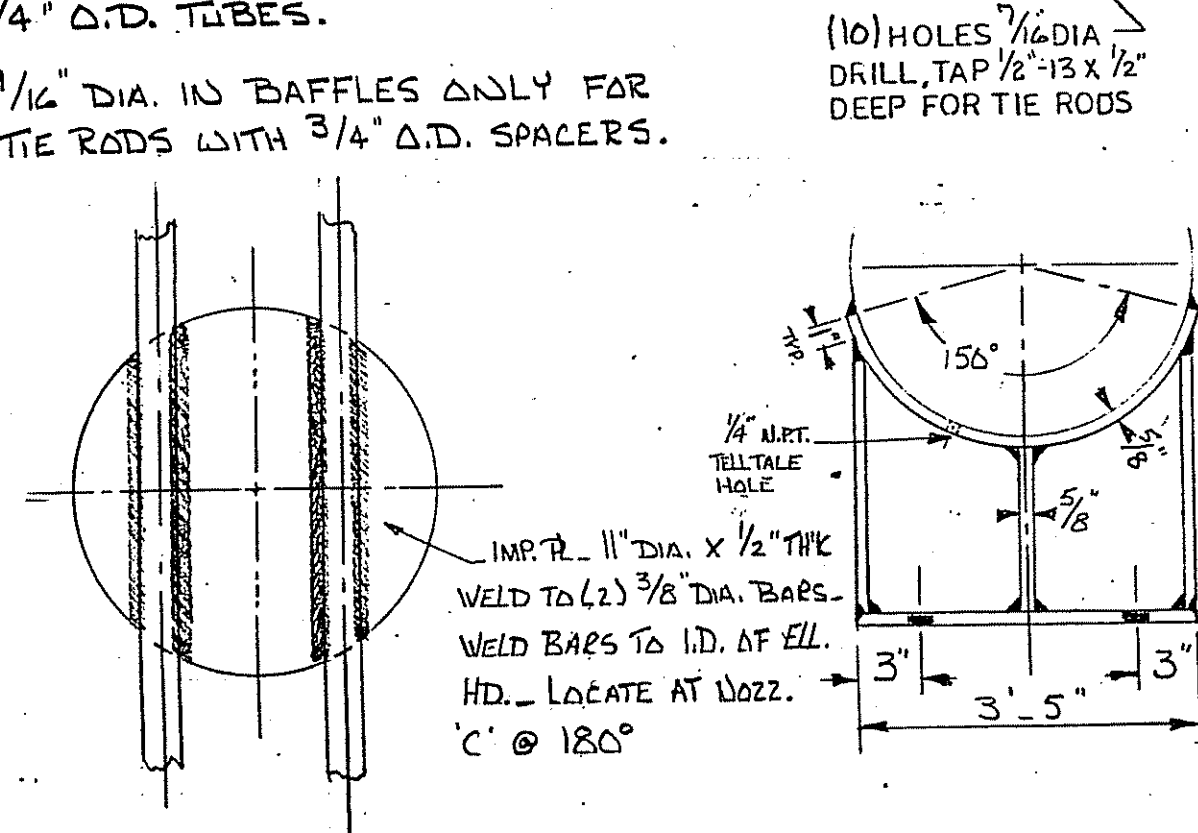
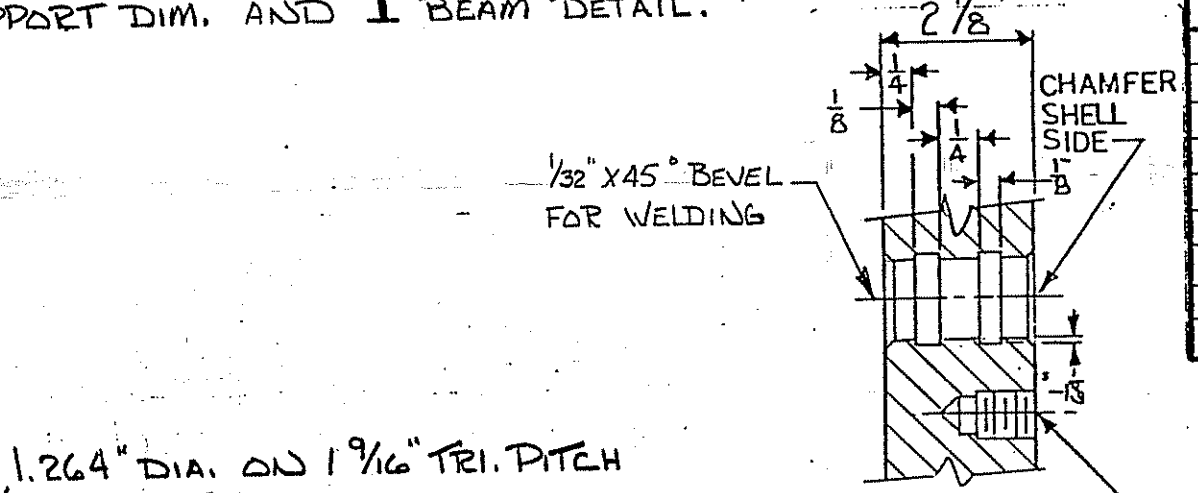
III ORIENTATION II



SEE SHEET 2 AND BELOW FOR SUPPORT DIM. AND I BEAM DETAIL.



VIEW X-X
 BAFFLE CUT ALTERNATES A-A, B-B (12) A-A (12) B-B
 BAFFLE DIA.: 40.775"
 O. T. L.: 40.4061"
 TUBEHOLE DIA. IN BAFFLES: 1 9/32"



304 S.S.
 C. ST'L.

ANSI NOZZLE SCHEDULE						ASME CODE REQUIREMENTS		
MK.	SIZE	RATE	FACE	NOZZ. NECK	SERVICE	DESIGN PRESSURE	SHELL SIDE	TUBE SIDE
A	24"	150#	L.J.	5/16" THK 304 ELC.	GAS INLET	175	175	150
B	24"				GAS OUTLET		375	375
E	3/4"	3000#	TH'D	304 ELC. FULL COUPLING PLUGGED	DRAIN		265	225
T1 & T3	3/4"				TEMP.		CORROSION ALLOWANCE (EXCEPT TUBES) 1/16"	
P1 & P3	1/2"				PRESSURE			POSTWELD HEAT TREATMENT NONE
								RADIOGRAPHIC EXAMINATION SPOT
								METAL TEMP (TEMP. 6TH ED) °F 100° 150°
C	10"	150#	R.F.S.D.	STD. WT.	WATER INLET		ASME CODE STAMP / NAT'L. BD. REG. IS REQ'D.	
D	10"				WATER OUTLET		CUSTOMER INSPECTION YES REQ'D	
T2 & T4	3/4"	6000#	TH'D	VOID FULL COUPLING PLUGGED	TEMP.		SPECIFICATIONS: 1977 ASME CODE SECTION VIII DIV. I & TEMP. 'B'	
P2 & P4	1/2"				PRESSURE		& SPEC. # 5CS-3E1, 11CS-6G1, S-2026.0008 & SPEC. SHT.	

NON-PRESSURE PARTS		
SUPPORTS & PADS	C. ST'L	
BAFFLES	C. ST'L	
TIE RODS/SPACERS	C. ST'L	
PASS PARTITIONS	NONE	
IMP. TRATE & ELL. HD.	C. ST'L	
REINF. PAD	304 ELC.	
NAME PL	STD. ST'L	

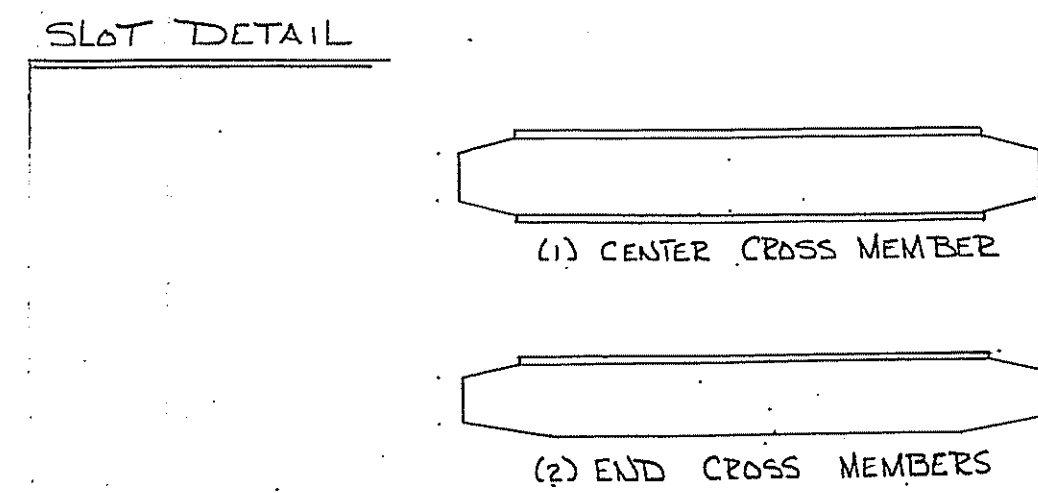
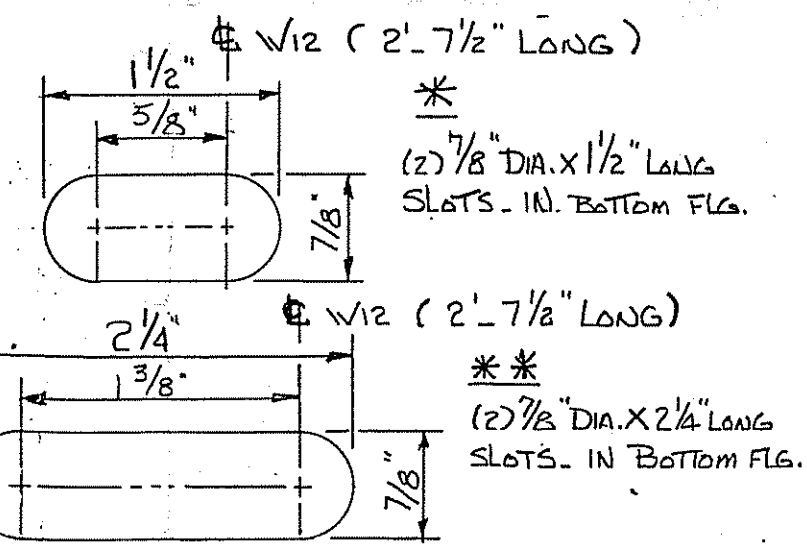
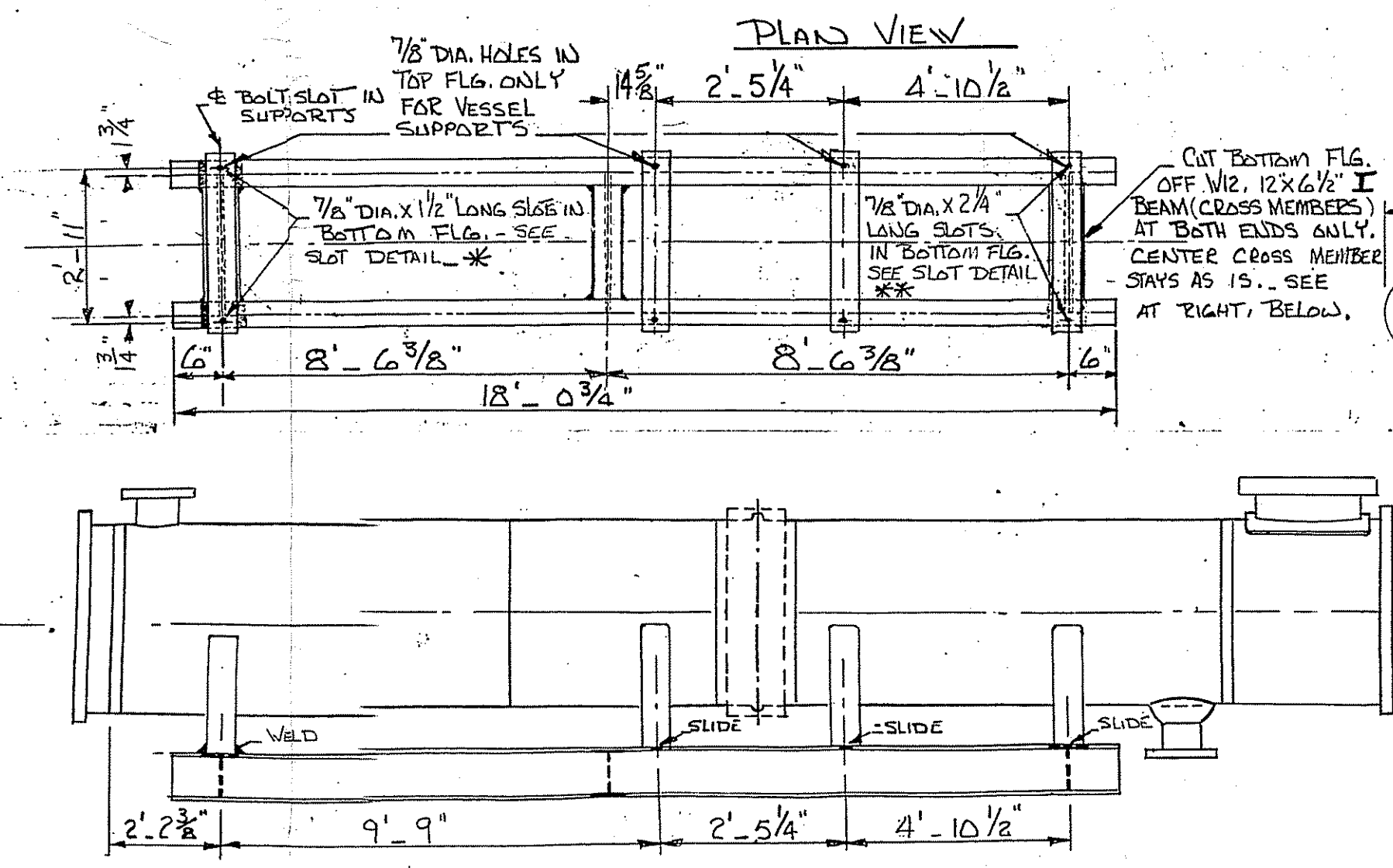
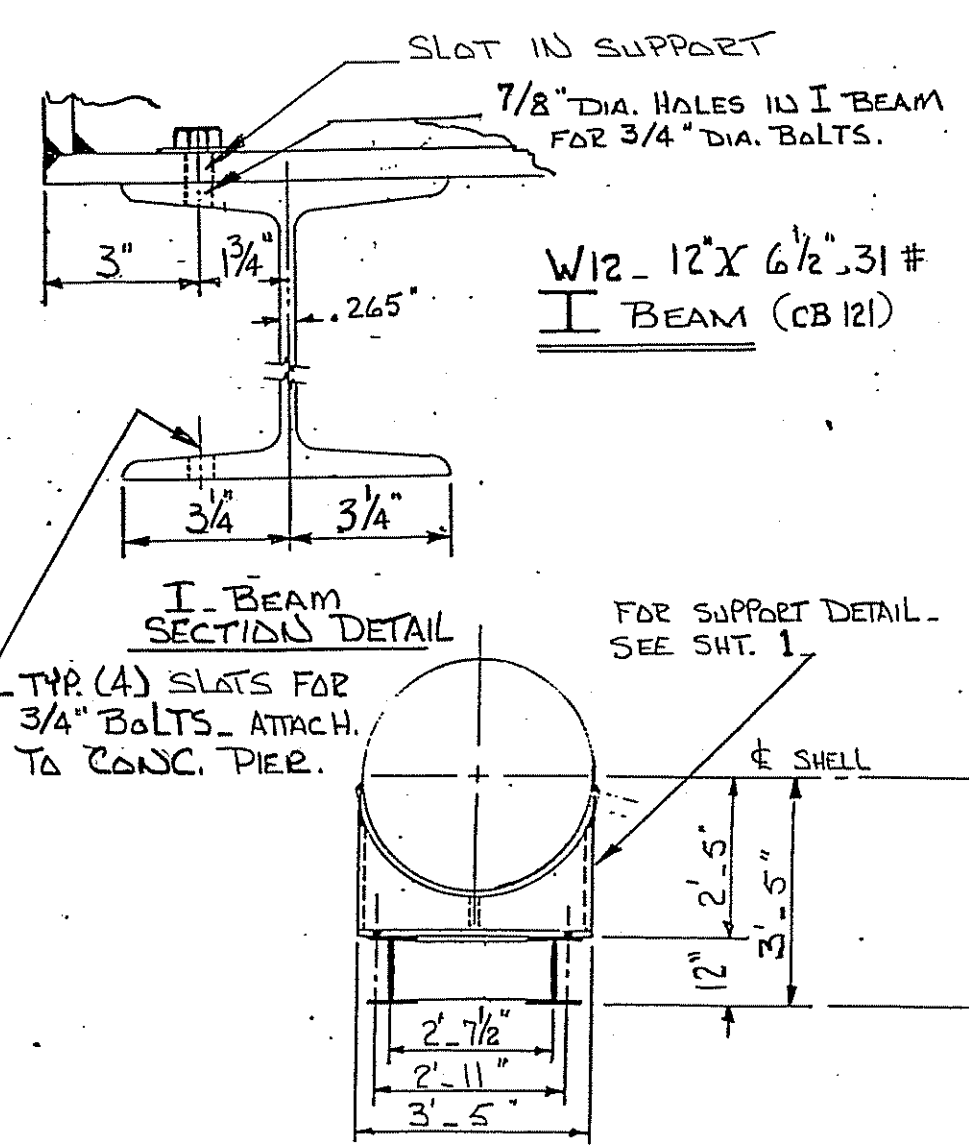
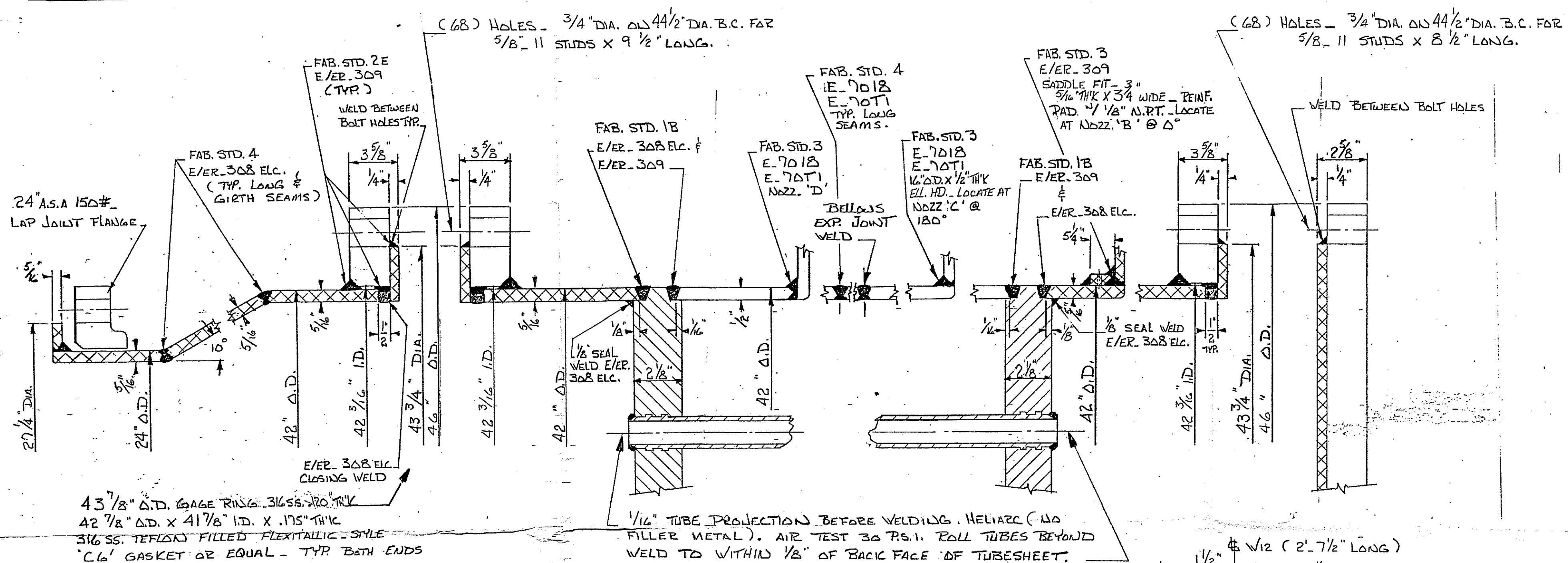
NOTES		
1. EST. WT. EMPTY: 16008# FULL: 27686# BDL: —	TUBES: SA-249 TP 304 STN. ST'L	
2. ALL BOLT HOLES STRADDLE NORMAL &	NO: 583 O.D. 1 1/4" BWG 16 LG. 22'-0"	
3. PLYWOOD COVERS ON ALL OPEN NOZZLES.	TUBESHEETS SA-240 TP 304 STN. ST'L	
4. BODY FLG. & TUBESIDE NOZZLES MAIN GASKET SURFACES / SHELL SIDE ONLY) T.F.#1 STK FINISH		
5. PAINT: SAND BLAST O.S. PAINT C. ST'L (1) COAT CARBOZINC # 11 (GREEN) 3.0 MILS D.F.T. / ALSO I BEAMS		
6. STUDS & NUTS TO HAVE ELECTROPLATED ZINC COATING, TYPE PS (0005)		

NAME PLATE			
	SHELL	YEAR	1979
	MADP	175	PSI
	MADT	375	F
TUBE	MADP	150	PSI
	MADT	375	F
		150	PSI
SHE ORDER NO.	79-2598		
CUST. ORDER	X-1300012		
CUST. ITEM	E.4100.4 / E.6100.4		

PART	SHELL SIDE	TUBE SIDE
SHELL/CHANNEL	SA-516 GR 70	SA-240 TP 304 ELC.
SHELL COVER		
FORMED HEADS	SA-516 GR 70	
BODY FLANGES		SA-105
NOZZLE FLANGES	SA-105	SA-105
NOZZLE PIPE	SA-53 GR B SMLS	SA-240 TP 304 ELC.
STUDS (6)	SA-193-B7	SA-193-B7
NUTS (6)	SA-194-2H	SA-194-2H
GASKETS (1) SPARE		175" THK 3/16 SS. TEFLON
SET HEAD		FILLED FLEXITALL STYLE CG" OR EQUAL
PACKING		
FLTG. BARREL		
FLTG. HEAD COVER		
CHANNEL COVER	SA-516 GR 70 / LINED WITH 304 ELC.	
BELLOWS EXP. JT.	INCONEL 600 BELLOWS TYPE WITH PROTECTIVE COVER FOR .794" FLOWGATION, PER CODE CASE 1177.7 (5000 CYCLES)	

REVISIONS	
5/11/79	CORRECTED NOZZLE P1 & CORRECTED I BEAM DETAIL
4/26/79	GEN. REVISION
CERTIFIED ENG. SHT 31479 O.C.; SHT 31479 PROD. 3/14/79	
CUSTOMER: HERCO FINA	
CUST. P.O. NO.: X-1300012	
ITEM NO.: E.4100.4 / E.6100.4 PROJ. NO.:	
PLANT: HANOVER / WILMINGTON, N.C.	
TEMA SIZE AND TYPE	
(2) 41-264 CEN EXPANDED AFTER COOLERS	
SOUTHERN HEAT EXCHANGER CORP.	
P.O. BOX 2400 TUSCALOOSA, ALA. 35401	
DATE: 3-7-79	ORDER NO. DWG. NO. SM-1245-2
BY: W.L.A.	79-2598 SHEET 1 OF 2

104280



304 ELC.
304 S.S.
C. ST'L.

VENDOR PRINT FILE	37476-101	DATE	5-30-79
SHEET	2	EQUIPMENT NOS.	B-4100-4
PROJECT	8	ACCOUNT NOS.	026130
PURCHASE ORDER NO.	726-026-1300012		
PLANT	HANOVER		
REVIEWED - DRAFTING DESIGN			
APPROVED - ENGINEER	J. McLaughlin		

SOUTHERN HEAT EXCHANGER CORP.			
P. O. BOX 2400 TUSCALOOSA, ALABAMA 35401			
DATE	3-6-79	ORD. NO.	DWG. NO. SM-1245-2
BY	D.L.A.	79-257/8	SHEET 2 OF 2