## FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS As Required by the Provisions of the ASME Code Rules, Section VIII, Div. 1

Item no. E-4207-4

<ol> <li>Manufactured and certified by</li> </ol>	Southern Heat E	xchanger C	Corpora	ation 6	100 OI	d Mon	tgome	ry Hig	hway	Tuscal	oosa,	AL	
(Name and address of Manufacturer)													
2. Manufactured for KOSA, Wilmington, NC (Name and address of Purchaser)													
3. Location of installation K	OSA, Wilmington	, NC					,	١.					
4. Type Horizontal	Heat Exc		(Name &		ss) 124A	No	ne S	SR. Z	1179-2		10469		2000
(Horiz,vert,sphere)	(Tank,separator,jkt. v		n,etc.)			(CF			g. No.)		. Bd. N		2000 . built)
5. ASME Code, Section VIII, Div.		8, A98	·			Vone				N	lone		
Items 6 - 11 incl. to be completed		Addenda(date	•	elesses		le Case heat exc		or ch	•			G-120(d	)
6. Shell (a) No. of course(s):	3	, <u>jaanolo 6. j</u> a		,	(b) Ove				20'-			•000000	
(OD) Course(s)	Material		kness		ong Join				um.Joint			Heat	
No. Diameter, in, Length (ft & 1 34" 10'-0"	In) Spec/Grade or T SA-516 GR.		Corr. 1/16"	Type 1	Full,Spo	ot,None oot	Eff. 85%	Type 1		ot,None pot	Eff.	Temp.	Time
1 34" 7'-0 1/4'			1/16"	1	<del></del>	oot	85%	1		pot	-		
1 44" 1'-9 1/2"	<del></del>		1/16"	1	· · · · · · · · · · · · · · · · · · ·	ot	85%	1		pot -	-		
7. Heads: (a) SA-516					(b)	***************************************							
	Spec. No., Grade or								rade or T	ype) H.T			
Location Thickner Top,Bottom,Ends Min. (	ess Radius  Corr. Crown Knuck	Elliptical le Ratio	Conic Apex A	- 1	emisph. Radius	Flat			ressure Concave	Туре		gory A ot,None	Eff.
	/16" (2) 44" O.D.								X	N/A		one	- Lind (1-2
(b)													
•													
If removable, bolts used (describe	other fastening)	Welde	ed		(Mat	i. Spec.	No Gr	ade si:	ze no)				
8. Type of jacket None		• .		Jack	et closur		. 10., 01.	, O.	, 110.,			-	
								(Desc	ribe as o	_		•	
if bar, give dimensions None 9. MAWP 175 N/A	1	350	N/A	o r=	Min. de		tal tanan		20		d, descr 175	ibe or sk psi	etch.
(internal) (external)	psi at max. temp.		14/74										
		(internal)	(externa		Will i. GC	aign me	car comp	` —	20	- F. al		- poi	
	6-20(f) and UHA-	(Internal) 51	(externa		WIII A. CC	aign me	cor comp	•		- F. ai		_ poi	
10. Impact test No per UC		51 (Indicate	yes or n	al)						_ F. GL		_ poi	
10. Impact test No per UC	ress. <u>265</u>	51	yes or n	al)	ne comp							_ poi	
10. Impact test No per UC  11. Hydro., pneu., or comb. test pltems 12 and 13 to be completed	ress. 265 for tube sections	51 (Indicate psig hydro	yes or n	al) o and th	ne compe est	onent(s)		tested)		r. at		_	
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed  12. Tubesheet: SA-240	ress. 265 for tube sections 0.316L	(Indicate psig hydro	yes or n	o and the	ne complest		Impact	tested)			Wel	ded	bolted)
10. Impact test No per UC  11. Hydro., pneu., or comb. test pltems 12 and 13 to be completed	ress. 265 for tube sections ) 316L c. No.) D	51 (Indicate psig hydro	yes or n	o and the	ne complest	onent(s)	Impact	tested)	ow., In.		Wel	ded elded or	bolted)
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-240 Left (Mat'l. Spe SA-240 Right (Mat'l. S	ress. 265 for tube sections ) 316L c. No.) D ) 316L pec. No.)	(Indicate psig hydro 34 ia., in. (subjection) Dia.,	yes or n  "  t to pres	o and the Proof te sure)	ne complest Nom	2 3/8" . thk., in 2 5/8" . thk., in	impact	0" orr. Allo	ow., in.		Wel- ment (w Wel- Attach	ded elded or ded ment	bolted)
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-24C Left (Mat'l. Spe SA-24C Right (Mat'l. S) 13. Tubes See remarks	ress. 265 for tube sections 0.316L c. No.) D 0.316L pec. No.)	(Indicate psig hydro 34 la., in. (subjec 39 Dia.,	yes or n  "  t to pres  in.  16	o and the Proof to sure)	ne complest Nom Nom //G.	2 3/8" . thk., in . thk., in	impact  . Co	0" orr. Alic orr. Alic orr. Alic	ow., in.	Attachr	Wel- ment (w Wel- Attach Stra	ded elded or ded ment ight	
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-24C Left (Mat'l. Spe SA-24C Right (Mat'l. Spec. No., Griden Spec	ress. 265 for tube sections 0.316L cc. No.) D 0.316L pec. No.) 3/ pede or Type O.D.	(Indicate psig hydro 34 la., in. (subjection 39 Dia., in. (subjection 39 Dia., in. (subjection 39 Dia.)	yes or n  " " tt to press " in.  16 Norn. tr	o and the Proof to sure)	Nom Nom YG.	2 3/8" . thk., in 2 5/8" . thk., in	impact  Co See re	0" orr. Allo	ow., in.	Attachr	Wel- ment (w Wel- Attach Stra	ded elded or ded ment	
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-24C Left (Mat'l. Spe SA-24C Right (Mat'l. S) 13. Tubes See remarks	ress. 265 for tube sections 0.316L c. No.) D 0.316L pec. No.) 3/pede or Type O.D. od for inner chambers	(Indicate psig hydro 34 la., in. (subjection 39 Dia., in. (subjection 39 Dia., in. (subjection 39 Dia.)	yes or n  " " tt to press " in.  16 Norn. tr	o and the Proof to sure)	Nom Nom YG.	onent(s) 2 3/8" . thk., in 2 5/8" . thk., in	Impact  . Co See re Nun	0" orr. Alto orr. Alto emark	ow., in.	Attachr	Wel- ment (w Wel- Attach Stra	ded elded or ded ment ight	
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed  12. Tubesheet: SA-24C  Left (Mat'l. Specare SA-24C)  Right (Ma	ress. 265 for tube sections ) 316L c. No.) D 316L ec. No.) 3ded or Type O.D. d for inner chambers	(Indicate psig hydro 34 ia., in. (subjec 39 Dia., /4" ., in. of jacketed ve	yes or n ) " tt to pres " in. 16 Norn. tr	o and the Proof te sure)	Nom Nom Nom Rights Significant Nom	onent(s) 2 3/8" . thk., in 2 5/8" . thk., in t exchar	impact  Co See re Nun ngers. th (ft & I	0" orr. Allo orr	ow., in. s 2'-10	Attachr Ty	VVeloment (w Welow Attach Stra pe (Stra	ded elded or ded ment ight ight or U	)
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Sheli (a) No. of course(s):	ress. 265 for tube sections 0 316L c. No.) D 0 316L dec. No.) ade or Type O.D. d for inner chambers 2	(Indicate psig hydro 34 la., in. (subjection 59 Dia., in. of jacketed ve	yes or n  " tt to pres " in. 16 Nom. tr	o and the Proof te sure)  6 BW nk., in. c	Nom Nom Nom G No gauge els of hea (b) Ove	2 3/8" . thk., in . thk., in t exchar	impact  Color Colo	O" orr. Allo orr. Allo mark nber	ow., in. s 2'-10 um.Joint	Attachi Ty 5/8"	VVeloment (w Welow Attach Stra pe (Stra	ded elded or ded ment ight ight or U	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test pitems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Sheli (a) No. of course(s):  (OD) Course(s)  No. Diameter, in. Length (ft &	ress. 265 for tube sections ) 316L c. No.) D ) 316L ecc. No.) ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T	(Indicate psig hydro 34 la., in. (subjection 39) Dia., (4" ., in. of jacketed vector year Nom.	yes or n  " tt to pres " in. 16 Norn. tr essels or kness Corr.	o and the Proof to sure)  S BW nk., in. c channe L Type	Nom Nom Nom Or gauge ls of hea (b) Ove	onent(s) 2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng	impact  Co See re Nun igers. th (ft & I	O" Orr. Allo orr. Allo orr. Allo orr. Allo orr. Allo orr. Allo orr. Circ Type	ow., In. s 2'-10 sum.Joint	Attachi Ty 5/8"	Wel- ment (w Wel- Attach Stra pe (Stra B,&C)	ded elded or ded ment ight or U	)
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Items 14 - 18 incl. to be completed 14. Sheli (a) No. of course(s):	ress. 265 for tube sections 0.316L c. No.) D 0.316L pec. No.) 3/ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T ' SA-240 316	(Indicate psig hydro 34 la., in. (subjection 39 Dia., in. of jacketed very Nom. St. 375"	yes or n  " tt to pres " in. 16 Norn. tr essels or kness Corr. 0"	o and the Proof te sure)  6 BW nk., in. c	Nom /G. or gauge ls of hea (b) Ove	2 3/8" . thk., in . thk., in t exchar rall leng	impact  Color Colo	O" orr. Allo orr. Allo mark nber	ow., In. s 2'-10 sum.Joint	Attachi Ty 5/8"	VVeloment (w Welow Attach Stra pe (Stra	ded elded or ded ment ight ight or U	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test pitems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Sheli (a) No. of course(s):  (OD) Course(s)  No. Diameter, in. Length (ft & 1 34" 1'-5 1/2')	ress. 265 for tube sections 0.316L c. No.) D 0.316L dec. No.) add or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T ' SA-240 316	(Indicate psig hydro 34 la., in. (subjection 39 Dia., in. of jacketed very Nom. St. 375"	yes or n  " tt to pres " in. 16 Norn. tr essels or kness Corr. 0"	o and the Proof to Sure)  S BW ak., in. c channe  L Type  1	Nom /G. or gauge ls of hea (b) Ove	onent(s) 2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng	impact  Co See re Nun ngers. th (ft & I	O" Orr. Allo orr. Allo orr. Allo orr. Allo orr. Allo orr. Allo orr. Circ Type	ow., In. s 2'-10 sum.Joint	Attachi Ty 5/8"	Wel- ment (w     Wel- Attach Stra pe (Stra  B,&C) Eff.	ded elded or ded ment ight or U	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-24C  Left (Mat'l. Specare SA-24C)  Right (Mat'l. Specare Right (Mat'l. Specare SA-24C)  Right (Mat'l. Specare Right (Mat'l. Specare SA-24C)  Right (Mat'l. Specare SA-24C	ress. 265 for tube sections 0 316L c. No.) D 316L pec. No.) 34 ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 "SA-240 316 GR. 70	(Indicate psig hydro 34 ia., in. (subjection 39 Dia., in. of jacketed very Norn. SL 375"	yes or n  " tt to pres " in.  16 Nom. tr sssels or kness Corr.  0" 0"	o and the Proof te sure)  Barbara Barb	Nom Z Nom Z Nom Z Nom G Or gauge ds of hea (b) Ove Cong Joir Full, Sp Sr	2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng nt (Cat. / ot,None oot oot	impact  Co See re Nun igers. th (ft & I  A) Eff. 85% 85% A-240	O" orr. Allo orr. Allo orr. Allo orr. Allo orr. Type 1 316L	ow., in. s 2'-10 tum.Joint Full,Sp	Attachr Ty: 5/8"	Welment (w Wel-Attach Stra pe (Stra B,&C) Eff.	ded elded or ded ment ight ight or U	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test pltems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Specare SA-240  Right (Mat'	ress. 265 for tube sections 0 316L c. No.) D 316L pec. No.) 36de or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 GR. 70 Spec. No., Grade or	(Indicate psig hydro 34 ia., in. (subject 39 Dia., in. of jacketed very Nom. 3L 375"	yes or n  " tt to pres " in. 16 Nom. tr essels or Corr. 0" 0"	o and the Proof te sure)  6 BW nk., in. ochanne  L Type 1 1	Nom Z Nom Z Nom G Or gauge els of hea (b) Ove Long Joir Full,Spr Sr (b)	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng at (Cat. / ot,None bot bot  (Mat'	impact  Concept Concep	O" Orr. Allo Orr. Allo Orr. Allo Orr. Allo Orr. Type 1 316L No., G	ow., In. S 2'-10 cum.Joint Full,Sp S	Attachr Ty: 5/8"	VVeloment (w VVelo	ded elded or ded ment ight ight or U	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Specare SA-240  Right (Mat'l	ress. 265 for tube sections 0 316L c. No.) D 316L ec. No.) 3ded or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 GR. 70 Spec. No., Grade or ess Radius	(Indicate psig hydro 34 ia., in. (subject 39) Dia., (4" ., in. of jacketed very Thick Type Nom. Sl. 375"  Type) H.T Ti	yes or n  " tt to pres " in. 16 Nom. tr sssels or  kness Corr. 0" 0"  me & Te	o and the Proof te sure)  Sure)  BW Nk., in. c channe  L Type  1  1	Nom Z Nom Z Nom Z Nom G Or gauge ds of hea (b) Ove Sg Sg Sg (b) emisph.	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng at (Cat. / ot,None oot oot oot (Mat'	impact  Concept Concep	O" Orr. Allo orr. Allo orr. Allo orr. Allo orr. Type 1 316L No., Gile to P	2'-10 sum.Joint Full,Sp S rade or T	Attachr Ty 5/8" (Cat. A, bot, None pot	VVeloment (w VVelo	ded elded or ded ment ight ight or U Heat Temp	Treat.
10. Impact test	ress. 265 for tube sections 0 316L c. No.) D 316L pec. No.) 36de or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 GR. 70 Spec. No., Grade or	(Indicate psig hydro 34 ia., in. (subject 39) Dia., (4" ., in. of jacketed very Thick Type Nom. Sl. 375"  Type) H.T Till Elliptical le Ratio	yes or n  " tt to pres " in. 16 Nom. th essels or  Corr. 0" 0"  The conic coni	o and the Proof te sure)  3 BW nk., in. ochanne  L Type 1 1 emp cal H	Nom Z Nom Z Nom Z Nom G Or gauge ds of hea (b) Ove Sg Sg Sg (b) emisph.	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng at (Cat. / ot,None bot bot  (Mat'	impact  Concept Concep	O" Orr. Allo orr. Allo orr. Allo orr. Allo orr. Type 1 316L No., Gile to P	2'-10 sum.Joint Full,Sp S rade or T	Attachr Ty 5/8" (Cat. A, bot, None pot	Wel- ment (w Wel- Attach Stra pe (Stra  B,&C) Eff.	ded elded or ded ment ight ight or U	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test plems 12 and 13 to be completed 12. Tubesheet: SA-24C  Left (Mat'l. Spe. SA-24C  Right (Mat'l. Spe. No., Gn. Mat'l. Spec. No., Gn. Mat'l. Spec. No., Gn. Mat'l. Spec. No., Gn. Mat'l. Spec. No. Gn. Gn. Gn. Gn. Gn. Gn. Gn. Gn. Gn. Gn	ress. 265 for tube sections 0 316L c. No.) D 0 316L aec. No.) 3/ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 GR. 70 Spec. No., Grade or Spec. No., Grade or Spec. Radius Corr. Crown Knuck	(Indicate psig hydro 34 ia., in. (subject 39) Dia., (4" ., in. of jacketed very Thick Type Nom. Sl. 375"  Type) H.T Till Elliptical le Ratio	yes or n  " tt to pres " in. 16 Nom. th essels or  Corr. 0" 0"  The conic coni	o and the Proof te sure)  3 BW nk., in. ochanne  L Type 1 1 emp cal H	Nom Z Nom Z Nom Z Nom G Or gauge ds of hea (b) Ove Sg Sg Sg (b) emisph.	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng ot, None oot oot  (Mat' Flat Diamete	impact  Concept Concep	O" Orr. Allo orr. Allo orr. Allo orr. Allo orr. Type 1 316L No., Gile to P	2'-10 sum.Joint Full,Sp S rade or T	Attachr Ty 5/8" (Cat. A, loot, None pot ype) H.1	Wel- ment (w Wel- Attach Stra pe (Stra  B,&C) Eff	ded elded or ded ment ight ight or U  Heat Temp & Temp gory A out,None	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test pitems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No. of course(s):  (OD) Course(s)  No. Diameter, in. Length (ft & 1 34" 1'-5 1/2" 1 34" 0'-5 5/16  15. Heads: (a) SA-516  (Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Ma	ress. 265 for tube sections 0.316L cc. No.) D 0.316L dec. No.) 3/ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 "SA-240 316 "SA-	(Indicate psig hydro 34 la., in. (subject 39 Dla., /4" , in. of jacketed very Nom. SL 375"  Type Nom. SL 375"  Type H.T Till Elliptical Ratio cluded in the 2:1	yes or n  " tt to pres " in. 16 Nom. tr sssels or Corr. 0" 0"  The conic Apex A	o and the Proof to Sure)  Sure)  Sure)  Sure)  Channe  L  Type  1  1  emp  cal H  ngle	Nom Nom Nom G. Nor gauge ls of hea (b) Ove Ong Joir Full,Sp Sp (b) emisph. Radius	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng ot, None oot oot  (Mat' Flat Diamete	impact  Concept Concep	O" Orr. Allo orr. Allo orr. Allo orr. Allo orr. Type 1 316L No., Gile to P	2'-10 sum.Joint Full,Sp Frade or Tressure Concave	Attachi Ty 5/8" ((Cat. A, loot, None pot Type) H.1 Type N/A	Wel- ment (w Wel- Attach Stra pe (Stra  B,&C) Eff	ded elded or ded ment ight or U  Heat Temp.	Treat.
10. Impact test	ress. 265 for tube sections 0.316L cc. No.) D 0.316L dec. No.) 3/ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 "SA-240 316 "SA-	(Indicate psig hydro 34 la., in. (subject 39 Dia., in. of jacketed very Nom. 3L .375"  Type Nom. Elliptical lie Ratio cluded in the street size in	yes or n  " tt to pres " in. 16 Nom. tr sssels or Corr. 0" 0"  The conic Apex A	o and the Proof to Sure)  Sure)  Sure)  Sure)  Channe  L  Type  1  1  emp  cal H  ngle	Nom Z	onent(s) 2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng nt (Cat. / oot, None oot oot ) S (Mat' Flat Diamete 39	impact  Co See re Nun igers. th (ft & I 85% 85% A-240 I Spec. Siter Cor	O" Orr. Allo orr	ow., in.  S  2'-10  Full,Sp  rade or Tressure Concave	Attachi Ty 5/8" ((Cat. A, loot, None pot Type) H.1 Type N/A	Wel- ment (w Wel- Attach Stra pe (Stra  B,&C) Eff	ded elded or ded ment ight or U  Heat Temp.	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test pitems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No. of course(s):  (OD) Course(s)  No. Diameter, in. Length (ft & 1 34" 1'-5 1/2" 1 34" 0'-5 5/16  15. Heads: (a) SA-516  (Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Ma	ress. 265 for tube sections 0.316L cc. No.) D 0.316L dec. No.) 3/ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 "SA-240 316 "SA-	(Indicate psig hydro 34 la., in. (subject 39 Dla., /4" , in. of jacketed very Nom. SL 375"  Type Nom. SL 375"  Type H.T Till Elliptical Ratio cluded in the 2:1	yes or n  " tt to pres " in. 16 Nom. tr sssels or Corr. 0" 0"  The conic Apex A	o and the Proof to Sure)  Sure)  Sure)  Sure)  Channe  L  Type  1  1  emp  cal H  ngle	Nom Z	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng ot, None oot oot  (Mat' Flat Diamete	impact  Co See re Nun igers. th (ft & I 85% 85% A-240 I Spec. Siter Cor	O" Orr. Allo orr	ow., in.  S  2'-10  Full,Sp  rade or Tressure Concave	Attachr Ty 5/8"  ((Cat. A, yot,None pot  Type) H.1  Type N/A N/A	Wel- ment (w Wel- Attach Stra pe (Stra  B,&C) Eff	ded elded or ded ment ight ight or U  Heat Temp. & Temp gory A od, None one	Treat.
10. Impact test No per UC  11. Hydro., pneu., or comb. test pitems 12 and 13 to be completed 12. Tubesheet: SA-240  Left (Mat'l. Spe. SA-240  Right (Mat'l. Spe. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Mat'l. Spec. No. of course(s):  (OD) Course(s)  No. Diameter, in. Length (ft & 1 34" 1'-5 1/2" 1 34" 0'-5 5/16  15. Heads: (a) SA-516  (Mat'l. Spec. No., Gr. Mat'l. Spec. No., Gr. Ma	ress. 265 for tube sections 0.316L cc. No.) D 0.316L dec. No.) 3/ade or Type O.D. d for inner chambers 2  Material in) Spec/Grade or T SA-240 316 "SA-240 316 "SA-	(Indicate psig hydro 34 la., in. (subject 39 Dla., /4" , in. of jacketed very Nom. SL 375"  Type Nom. SL 375"  Type H.T Till Elliptical Ratio cluded in the 2:1	yes or n  " tt to pres " in. 16 Nom. tr sssels or Corr. 0" 0"  The conic Apex A	o and the Proof te sure)  6 BW ok., in. och channe  L Type 1 1 1 emp cal H ingle iss)	Nom Z	onent(s)  2 3/8" . thk., in 2 5/8" . thk., in t exchar rall leng nt (Cat. / ot,None oot oot ) S (Mat' Flat Diamet 39	impact  Concert Correct Corret Correct Correct Correct Correct Correct Correct Correct Correct	O" Orr. Allo Orr	ow., in.  S  2'-10  Full,Sp  rade or Tressure Concave	Attachr Ty 5/8"  (Cat. A, ot,None pot Type) H.1 Type N/A N/A	Welment (w Wel- Attach Stra pe (Stra  B,&C) Eff.	ded elded or ded ment ight ight or U  Heat Temp.  & Temp gory A oot,None one	Treat.

99-424A

No per UG-20(f) and UHA-51 (Indicate yes or no and the component(s) impact tested) 265 psig hydro Proof test 18. Hydro., pneu., or comb. test press. (UW-16.1) 19. Nozzles, inspection, and safety valve openings: Material Nozzie Thk. Reinforcement How Attached Location Diameter Flange Purpose (inlet, Nozzle Nom. Corr. Material Nozzie Flange (Insp. Opn.) or size Flange Outlet, Drain, etc. No. Type SA-182 F 316L .280" 0" Inherent **RFSO** 150# SA-312 316L 2 6" е Inlet/Outlet .500" 1/16" Inherent **RFSO** 8" 150# SA-106 GR. B SA-105 е inlet 300" Inherent RFSO-3" 150# SA-106 GR. B SA-105 1/16" е Outlet 1 .113" 0" Inherent **RFSO** 3/4" 150# SA-312 316L SA-182 F 316L 1 e Press. Indicator G۳ .113" Inherent **RFSO** Vent/Drain 2 3/4" 150# SA-312 316L SA-182 F 316L e SA-105 N/A 1/16" Inherent Thd Cplt 1 3/4" 6000 N/A Vent NΑ Shell, Welded N/A (2) Saddles Others 20. Supports: Skirt No Attached (Describe) (Yes or No) (No.) (No.) 21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned inspectors have been furnished for the following items of the report: (List the name of part, item number, mfg's, name and identifying number) 22. Remarks: UG-46(a) Line 13: (923) tubes, SA-213-316L (71) tubes, SB-677 904L (UNS N08904). 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, 11/29 U Certificate of Authorization No. Southern Heat Exchanger Corporation Signed Date Name (Manufacturer) CERTIFICATE OF SHOP 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 GA Commercial Union Insurance Company Boston, Ma of 04/25 , 20 00 ,and state that, to the best of my knowledge and belief. the pressure vessel described in this Manufacturer's Data Report on 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 this Manufacturer's Data Report. Futhermore, 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. Commissions NB11599A **GA419** 04/25/00 Signed Date (Nat'l Board Incl. endorsement, State, Province and No.) (Authorized Inspector) CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, division 1, U Certificate of Authorization No. Expires Name (Assembler) 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 have compared the statements in this Manufacturer's 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 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 psl. 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. Commissions

(Authorized Inspector) ·

(Nat'l Board incl. endorsement, State, Province and No.)

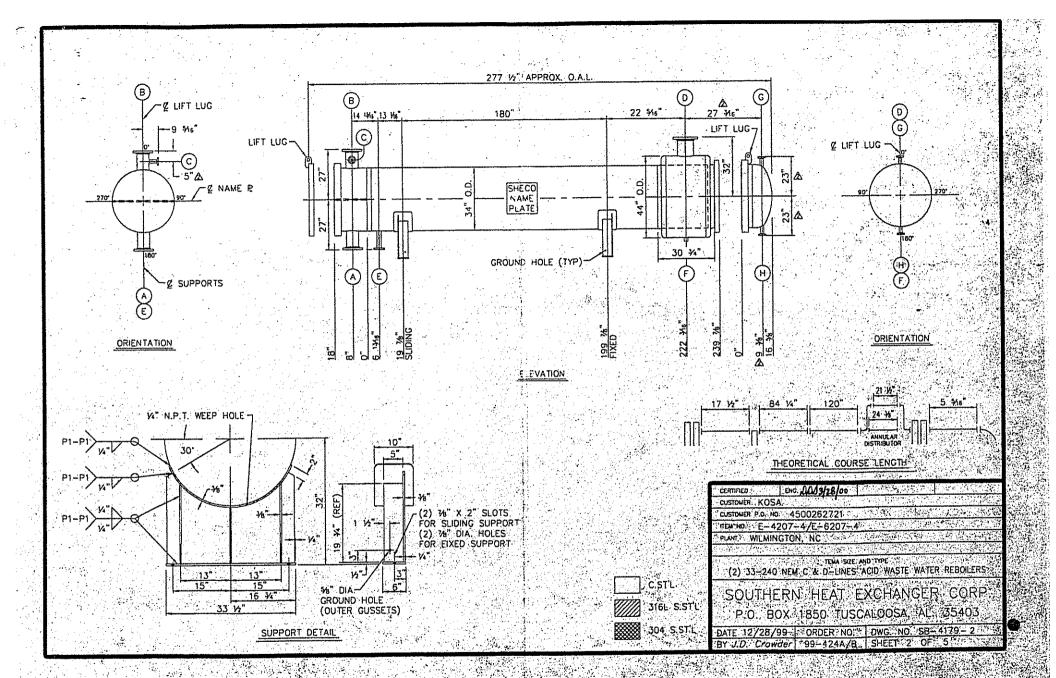
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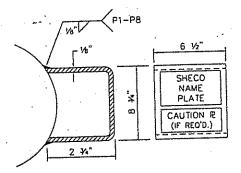
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		١ . ١	' }] [;	(		CERTIFIE		DESIGN PRESSUR		175	175
	and the second s	۱		7	0	·		DESIGN TEMPERA		350/20	
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	20	1   1	ţ		F.X	TUNAH'J	IN LUKY. I	CORROSION ALLC		1/16"	NONE
3.4			<u> </u>		, Lu. 7	TUSCALOOSA,	AI ARAMA	POSTWELD HEAT		NONE	NONE
		1 1 .			mine.	1000NLOUSA	g a guar turn Hiller t	RADIOGRAPHIC E		SPOT	SPOT 221/250
4.55					SIDE ,		750	WETAL TEMP, (TI	EMA 7IN EO.) 'F	40/270	0 221/250
		1 1	* -	MAWP			350 °F.		:-	1	tt
7.				MOMT	. 20	'F AT [	175 PSI		MP / HAT'L BD. REC -		····
	<b>1</b>	<b>!</b>		TUBE					ECTION MAY BE REQUIRE		
ł		<b> </b>		MAWP		5 PSI AT	350 °F.		1995 ASME CODE SECT,		NUME AND
· ·	<b>.</b>	1 1		TMOM	20	F AT	175 PSI	SPECIAL SERVICE			AL DATA REPORTS: NONE
<b>l</b> .		<b> </b>					YEAR 2000		UPT FROM IMPACT TESTIN	IG PER: UG-20(1).	WALL: AVG
•		1	SHECO S				I EAN [ 2000 ]	TUBES: SA-2		* C	watt: AVG лн: 20'−0"
		¶ .	CUST. OF	rder	4500.	262721		но. 994	0.D. 1/4" BwG.	10 LENC	cu = u
1,5	CAUTION		CUST. IT	FM	F - 47	07-4/E-620	7-4	TUBESHEETS: S	A-240 316L		
THE RECEIPE AND TOTAL	TRATURES SHOWN ON THE S.H.E. NAMEPLATE RELATE DNLY TO THE PRESSURE	Δ								\ <u>\</u>	TUBE SIDE
RETENTION CAPABILITY OF	ERATURES SHOWN ON THE S.H.E. NAMEPLATE RELATE ONLY TO THE PRESSURE THIS HEAT EXCHANGER, COMPONENTS OF THIS HEAT EXCHANGER HAVE BEEN PERRAING CONDITIONS. A CHANGE IN SERVICE OR DEVALTION FROM THE SPECIFIED DURIES THAT A MECHANICAL DESIGN CHECK BE MADE IN ORDER TO AVOID HEAT EXCHANGER.		<u> </u>					TRAS	SA-516 G		SA-240 316L
OPERATING CONDITIONS RE	DURRES THAT A MECHANICAL DESIGN CHECK BE MADE IN ORDER TO AVOID	5	L			·		VESSEL	34-310 0	<del>~~~</del>	5A-518 GR. 70 LINED MIN SA-240 316L
POSSIBLE DAMAGE TO THE	HEAT EXCHANGER.	οL			حصيب	****		COVERS FORMED HEADS	SA-516 G	R. 70	SA-240 316L SA-240 316L
	NOTES			<del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>		OZZLE SCHED		FORMED HEADS	20-210 6	<del></del>	
T. EST. WT. EMPTY: 17,0			SIZE	RATE	FACE	HOZZLE NECK	SERVICE	BODY FLANGES			SA-105 LINED WITH SA-240 315L
2. ALL BOLT HOLES STRAD			+		less.	TUBE SIDE STD, WT.	ACID WASTE WATER INLE		SA-1	05	SA-182 F 316L (6)
: 3. SNAP ON COVERS ON A		<u>A</u>	6"	150#		STD, WT.	ACID WASTE WATER OUTL			<del></del>	SA-182 F 316L.
4. 125 MAIN GASKE	T SURFACES.	В	6"	150# 150#	<del></del>		PRESSURE INDICATOR		SA-106		SA-312 316L
	PER SSPC-SP-6. C.STL ONLY: APPLY (1) COAT OF CARBOLINE CZ-11.	C G/H		150#			VENT/DRAIN	NOZZLE RENF. PA	os l		
	2) COATS OF DAMPNEY THERMALOX 70 (GLACK).	- <u>6/1</u>	7.	#UC.	+	1	, sp	STUDS/NUTS	\$A-193-87/\$A		5A-193-87/5A-194-2H
6. NOZZLE FLANCES SHALL	L BE DUAL STAUPED 316/316L	<b></b>		+	1	SHELL SIDE	,3 <sup>2</sup> /	GASKETS			SEE SHEET 5 FOR DETA
		D	8"	150#	RFSO	X-STG.	STEAM INLET				
		Ē	3"	150#		X-STG.	CONDENSATE OUTLE		`		
		F	3/4"	6000#	<del></del>	VOGT, EPLT. PLUGGED	· VENT		F	REVISIONS	
· · · · · · · · · · · · · · · · · · ·		<u> </u>	1	Ι ,		1	<u> </u>				
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<b>}</b>								A 03/28/	DOJCENEDAY DE	TOTAL	WINDLY OUR CECANIDIE
		L							00 GENERAL REV	~	<u> </u>
								CUSTOMER K	CHG. [ADA] 3/28	<u></u>	······································
									NO. 4500262721	i	
		1				···			-4207-4/E-620		PROJ. NO. 147-9445.1.4025.5
		1					Ann		MINGTON, NC	·	147-9448.1.4043.5
		<u></u>				-					
	,	1		····					IEWA	SIZE AND TYPE	
	NON-PRESSURE PARTS	1				<u></u>		(2) 33-2	40 NEM C & D-LI	NES ACID WA.	STE WATER REBOILERS
SUPPORTS / PADS	SA-36 / SA-516 GR. 70	1				<del></del>	······································	<del>_</del>			
BAFFLES / SUPPORTS	SA-36	1				······································		SOUTI	HERN HEAT	I FXCH	ANGER CORP.
TE RODS / SPACERS	C.ST'L/S.ST'L	1									SA, AL. 35403
PASS PARTITIONS	SA-240 316L	WPS	P1P1	W-	42(SMAW)	W-54(GMAW) W-	-72(FCAW) W-89(SAW) W-96(G	(AW)			
ANNULAR DIST. SLEEVE	SA-516 GR. 70	WP5	PI-PE	8 W-	- 2/SMAW	) W-112(FCAW)	') W-100(SAW) W-172 (GI	AW) DATE 12/2	8/99 ORDER	NO. DWG.	NO. SB-4179-2
LIFT LUGS	SA-36 304 S.ST'L	WP5		8 W-	3(SMAW)	4-45(GMAW) W-	81(FCAW) W-90(SAW) W-97(G	TAW) BY J.D. Cr	owder 99-424,	A/B   SHEET	ניוטוו
NAMEPLATE BRACKET	304 3.51L	تسط			شبستنت	سيس أسير بيان بيسان					

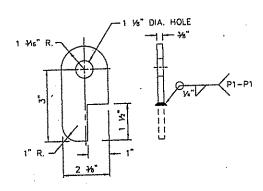
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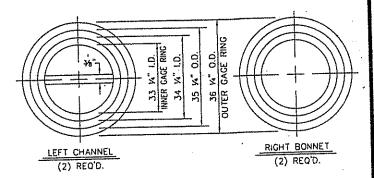




## NAME PLATE BRACKET DETAIL



LIFT LUG DETAIL (2) REQ'D



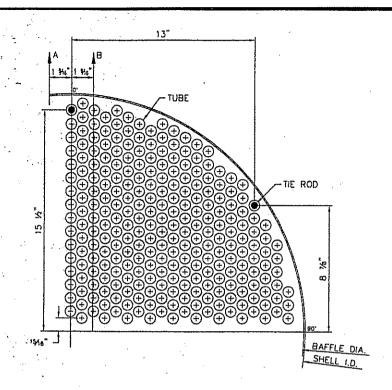
## GASKET DETAIL

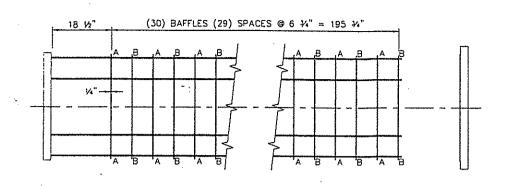
(INCLUDES ONE SPARE SET)

0.175" THK. 316L S.ST'L SPIRAL WOUND GASKET WITH TEFLON FILLER, 316L S.ST'L DOUBLE JACKETED PASS RIBS, AND 1/6" THK. C.ST'L OUTER GAGE RING & 316L S.ST'L INNER GAGE RING.

<b>f</b>	CERTIFIED ENG. 0043/28/04						
	CUSTOMER KOSA						
	CUSTOMER P.O. NO. 4500262721						
	ITEM NO. E-4207-4/E-6207-4						
	PLANT WILMINGTON, NC						
•							
	TEMA SIZE AND TYPE						
	(2) 33-240 NEW C & D-LINES ACID WASTE WATER REBOILERS						
C.ST'L	SOUTHERN HEAT EXCHANGER CORP.						
316L S.ST'L	P.O. BOX 1850 TUSCALOOSA, AL. 35403						
304 S.ST'L	DATE 12/28/99   ORDER NO. DWG. NO. SB-4179-2						
304 3.572	BY J.D. Crowder 99-424A/B SHEET 5 OF 5						

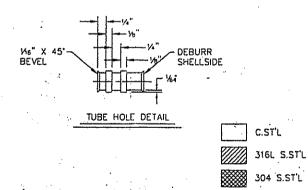
3





BUNDLE DETAIL

	TUBE O.D.	**					
	NO OF TUBE HOLES	994					
	SIZE OF TUBE HOLE IN TUBESHEET	0.760"					
•	SIZE OF TUBE HOLE IN BAFFLE	25/32"					
	PIJCH	1546" 30"					
•	TIE ROD O.D.	<b>1/2</b> " .					
	NO, OF TIE RODS	5					
	TIE ROD HOLE SIZE IN TUBESHEET	ฟร" x หว" DP. (SEAL WELD)					
İ	TIE ROD HOLE SIZE IN BAFFLE	9/16"					
	SPACER O.D.						
	DUMMY TUBE O.D.	_					
	NO. OF DUMMY TUBES	<del></del>					
	DUMMY TUBE HOLE SIZE IN BAFFLES	<del>.</del>					
	O.T.L.)	32.6939"					
	BAFFLE DIA.	33.0625"					
. (	BAFFLE CUT ALTERNATES	(15) A-A, (15) B-B					



CERTIFIED	ENG. ANA3/28/00
CUSTOMER KOSA	
CUSTOMER P.O. NO.	4500262721
· ПЕН №0.1 E-42	07-4/E-6207-4
PLANT WILMING	TON, NC
	TEMA SIZE AND TYPE
(2) 33-240	NEM C & D-LINES ACID WASTE WATER REBOILERS
SOUTHE	RN HEAT EXCHANGER CORP.
0.0 00	V 1050 TUDON 0004 AL 75407
F.U. BU	X 1850 TUSCALOOSA, AL. 35403
DATE 12/28/9	9 ORDER NO. DWG. NO. SB-4179-2
	er 99-424A/B SHEET 4 OF 5