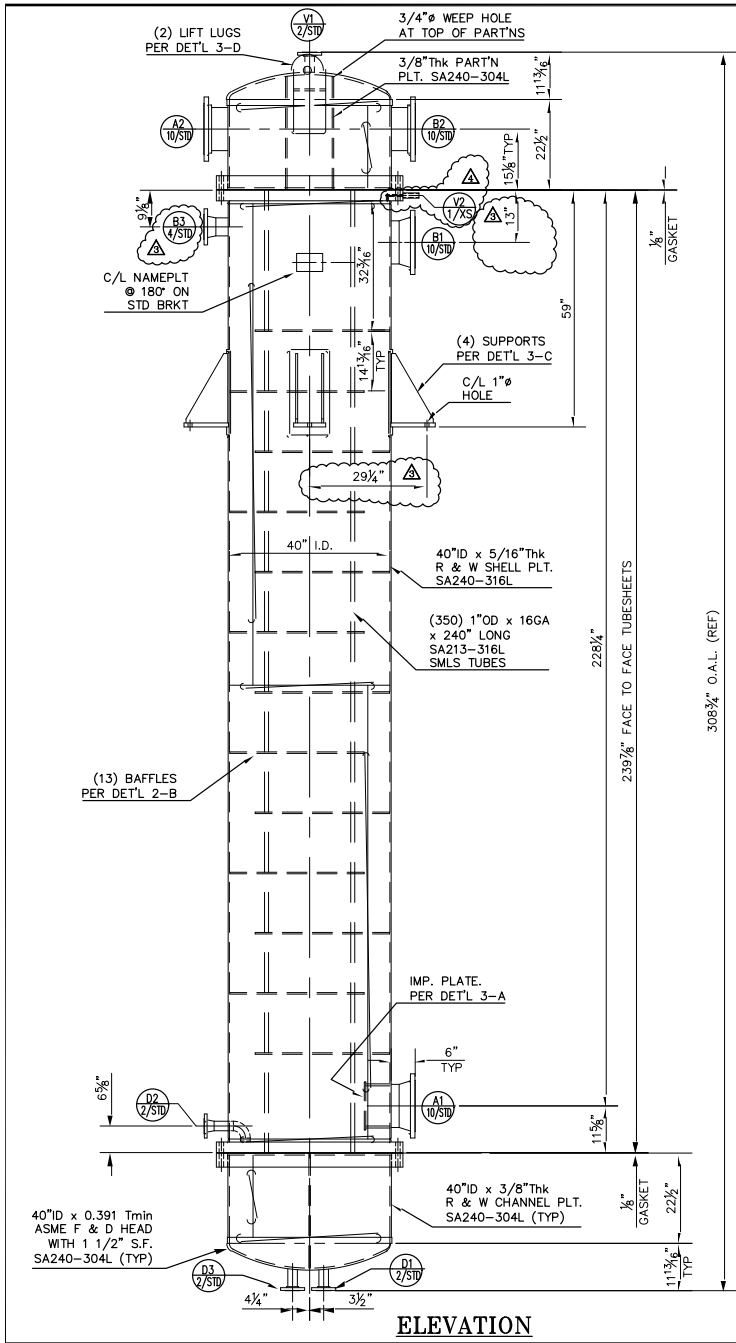
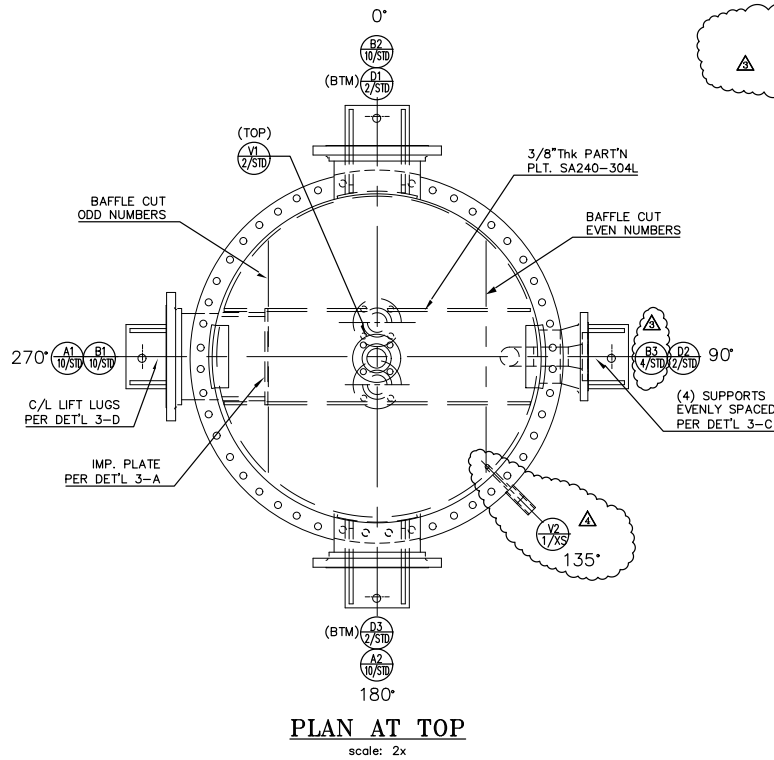




NOZZLE SCHEDULE												
MARK	NOZZLE	WELD HT.			FLANGE			REPAD		DETAIL	SERVICE	
SIZE	SCH	THK	A	B	C	PRES	TYPE	FACE	WIDE	Thk.		
A1	10"	STD	.365	3/8"		150	WN	RF			3-A	PROCESS INLET
A2	10"	STD	.365	3/8"		150	SO	RF			3-A	COOLING WATER INLET
B1	10"	STD	.365	3/8"		150	WN	RF			3-A	PROCESS OUTLET
B2	10"	STD	.365	3/8"		150	SO	RF			3-A	COOLING WATER OUTLET
B3	4"	STD	.237	3/8"		150	WN	RF			3-A	PROCESS OVERFLOW
D1	2"	STD	.154	3/16"		150	SO	RF			3-A	TUBE DRAIN
D2	2"	STD	.154	3/16"	3/16"	150	WN	RF			3-A	SHELL DRAIN
D3	2"	STD	.154	3/16"		150	SO	RF			3-A	TUBE DRAIN
V1	2"	160	.344	3/16"		150	SO	RF			3-A	TUBE VENT
V2	1"	XS	.179	3/16"							2-C	SHELL VENT

- NOTES**
- ALL BOLT HOLES SHALL STRADDLE VESSEL MAJOR C/L. UNLESS SPECIFIED OTHERWISE.
 - ALL S/S. WELDS PER AHE-800 & 807.
 - ALL DIMENSIONS ARE FROM GASKET FACES. UNLESS SPECIFIED OTHERWISE.
 - TUBE TO TUBESHEET JOINT TO BE DOUBLE GROOVED, STRENGTH WELDED & EXPANDED. WITH 1/8" TUBE PROJECTION ON BOTTOM & FLUSH ON TOP.
 - ALL REPADS TO HAVE (1) 1/4"Ø WEEP HOLE AT LOWEST POINT. RADIUS ALL CORNERS 11 MIN. TEST ALL REPADS WITH AIR AT 15 PSI MIN.
 - ORIENTATION PER PLAN/END VIEW (RESP.) UNLESS SPECIFIED OTHERWISE.
 - SHIP TWO SETS OF SPARE GASKETS WITH VESSEL.
 - PROTECTIVE COVERS TO BE PROVIDED FOR ALL NOZZLE FLANGES PRIOR TO SHIPPING.
 - SPREADER BEAM MUST BE USED TO LIFT & SET VESSEL.
 - REFERENCE AHE OLD JOB NO. 6448.



MATERIAL SPECIFICATIONS ASME		
	SHELL SIDE	TUBE SIDE
SHELL	SA240-316L	SA240-304L
HEADS		SA240-304L
SUPPORTS	SA240-316L	
FLANGES	SA182F-316L	SA182F-304L
PIPE	SA312-316L	SA312-304L
TUBES		SA213-316L (SMLS)
TUBE SHEETS		SA182F-316L
BOLTS/NUTS	SA193B7/2H (HDG)	
GASKETS	1/8"Thk GARLOCK 3500 8" & UP; 1/16"Thk GYLON TAN 1" - 6"	
BODY FLG.		SA182F-304L
BAFFLE / TUBE SUPP	SA240-316L	SA240-304L

DESIGN DATA		
DESCRIPTION	SHELL	TUBE
DESIGN CODE	ASME SEC. VIII, DIV. 1 2004 ED. 2004 AD.	
DESIGN PRESSURE	INTERNAL - PSIG	145
	EXTERNAL - PSIG	145
DESIGN TEMPERATURE	INTERNAL - °F	302
	EXTERNAL - °F	302
MAWP	302/302F	145
CORR. ALLOW.		0
HYDRO. PRESS. PSIG.		189
WELD PROCEDURE		SEE NOTE 2
RADIOGRAPHY PER CODE		SEE DET'L 3-B
VESSEL WEIGHT - DRY: 17,000 lbs.; FULL OF WATER: 32,000 lbs.		
HEAT TREATMENT		NOT REQUIRED

W L-S RT-4

CERTIFIED BY
ALABAMA HEAT EXCHANGERS, INC.

SHELL 145 PSIG @ 302 °F
MAWP TUBES 145 PSIG @ 302 °F
SHELL -20 °F @ 145 PSIG
MDMT TUBES -20 °F @ 145 PSIG

MFG. SERIAL NO. AHE-____
YEAR BUILT 2006
ITEM NO. 3020
CUST. P.O. NO. 4500154838
PROJ. NO. C0150.10002

CAUTION: The Code required pressures and temperatures marked on the heat exchanger relate to the basic design conditions. The heat exchanger design has been evaluated for specific operating conditions and shall be re-evaluated before it is operated at different operating conditions.

REVISIONS

0. INITIAL ISSUE

1. REV & RESUBMIT PER CUST EMAIL DT 1/25/06

2. REV & REL FOR FAB PER CUST DNG DT 2/7/06

3. REV & REL FOR FAB PER CUST DNG DT 3/26/06

4. ADDED TUBESHEET VENT V2 PER CUST DNG DT 3/26/06

ALABAMA HEAT EXCHANGERS, INC.
MOBILE, ALABAMA

DEGUSSA CORPORATION
ACH REACTOR
ITEM NO. 3020

CUST. ORDER NO.	JOB NO.	DRAWING NO.
4500162377	6-491	6-491A-061
DRAWN BY J.C.LIGHTCAP	DATE 1-5-05	SHT 1 OF 3
APP'D BY	DATE	SCALE 3/8"=1'-0"