

STANDARD NOTES:

- A. PROJECTION MEASURED FROM OUTSIDE OF VESSEL TO EXTREME GASKET FACE OF NOZZLE, UNLESS OTHERWISE SPECIFIED.
- B. NOZZLE BOLT HOLES TO STRADDLE 0°-180° CENTERLINE OR ITS PARALLEL UNLESS NOTED OTHERWISE.
- C. GASKET FINISH: 125 TO 250 μIN AVERAGE ROUGHNESS PER ASME B16.5-2003, PARA. 6.4.5.3
- D. HYDRO-TEST SHALL BE PERFORMED WITH WATER CONTAINING NO MORE THAN 50 PPM CHLORIDE. VESSEL SHALL BE DRAINED AND ALL RESIDUAL WATER MUST BE REMOVED IMMEDIATELY FOLLOWING TEST.
- E. CUSTOMER NOTE: INTERNAL COILS, EXTERNAL COILS/JACKETS (HALF PIPE, DIMPLED, CONVENTIONAL) MAY CONTAIN SOME TEST WATER AT TIME OF SHIPMENT DUE TO VESSEL CONFIGURATIONS RESULTING IN THE INABILITY TO COMPLETELY DRAIN AT OUR SHOP. VESSEL TO BE TILTED VERTICAL DURING OFF LOADING AT THE SITE TO ENSURE COMPLETE DRAINAGE PRIOR TO STORAGE OR ERECTION.
- F. WELDING PROCEDURES:

# 1 SMAW C.S. TO C.S.	# 21 GTAW C.S. TO C.S.
# 5 GTAW S.S. TO S.S.	# 36 FCAW C.S. TO S.S.
# 8 SMAW S.S. TO S.S.	# 37 FCAW S.S. TO C.S.
# 9 SMAW S.S. TO C.S.	# 43 GTAW S.S. TO C.S.
# 18 FCAW C.S. TO C.S.	# 54 GTAW S.S. TO S.S.
	# 56 SAW C.S. TO C.S.
	# 100 SAW S.S. TO S.S.
- G. TOLERANCES: PER WTC STANDARD & CUSTOMER STANDARD (WHEN APPLICABLE) & TEMA.

H. ALL OPENINGS/UN-BLINDED NOZZLES TO BE COVERED WITH PLASTIC AND/OR WOOD COVERS PRIOR TO SHIPMENT.

ADDITIONAL CUSTOMER SPECIFIC NOTES:

- 1. VESSEL EXTERNAL C.S. SURFACES SHALL BE PREPARED AND PAINTED AS FOLLOWS: SURFACE PREPARATION: NEAR WHITE BLAST PER SSPC-SP-10 PRIMER: (1) COAT ZINC RICH PRIMER, 2-3 MILS DFT.
- 2. DEGUSSA SPECIFICATIONS: 20.230.013 RO GENERAL REQUIREMENTS FOR EQUIPMENT 20.213.036 RO WELDING PRESSURE VESSELS 20.213.032 RO PAINTING OF EQUIPMENT 20.230.014 RO SHELL AND TUBE HEAT EXCHANGERS
- 3. TOLERANCES PER PIP VEPV1102
- 4. NAMEPLATE BRACKET IS SA-240 304 "I" SHAPE, 4 1/4" HIGH x 6 1/2" LONG ON 4" STAND-OFF (WELDED TO VESSEL).

SEAM IDENTIFICATION TABLE

SEAM I.D.	PROC. NO.	WELDER NO.	FIT-UP CHECK		BACKGOUGE CHECK		OCM	DATE	A.I.	DATE	COMMENTS
			INSP.	DATE	INSP.	DATE					
C1											
C2											
C3											
TS1											
TS2											

NDE DOCUMENTATION TABLE

REQUIRED w/ REPORTS	REQUIREMENT DESCRIPTION	COMMENTS	INSPECTOR	DATE
	LIQUID PENETRANT TEST			
	MAGNETIC PARTICLE TEST			
	BUBBLE LEAK TEST			
	BUBBLE LEAK TEST REPADS			
	BUBBLE LEAK TEST DOUBLER			
	FERROXYL TEST			
	POSITIVE MATERIAL IDENTIFICATION			
	BASELINE THICKNESS MEASUREMENT			

DESIGN TABLE

CODE: ASME SECTION VIII DIV.1 2007 ED STAMPED				TEMA NINTH EDITION 2007				CLASS: R			
SHELL SIDE				TUBE SIDE							
DESIGN PRESS. (PSI)	MAMP (PSI)	MAMP LIMITER	TEMP. °F	C.A.	DESIGN PRESS. (PSI)	MAMP (PSI)	MAMP LIMITER	TEMP. °F	C.A.		
FV/150	FV/150	TUBESHEET	212	1/8"	FV/150	FV/150	TUBESHEET	212	NONE		
NUMBER OF PASSES: 1				NUMBER OF PASSES: 8							
SPECIFIC GRAVITY: 1.1				HEAT TRANSFER AREA: 272 SQ. FT.							
SPECIFIC GRAVITY: 1.0				SPECIFIC GRAVITY: 1.0							
RADIOGRAPHIC REQUIREMENTS:				RADIOGRAPHIC REQUIREMENTS:							
FULL	LETHAL	SPOT	SPECIAL	NONE	FULL	LETHAL	SPOT	SPECIAL	NONE		
RADIOGRAPHY REPORTS REQUIRED				RADIOGRAPHY REPORTS REQUIRED							
RADIOGRAPHY REPORTS REQUIRED				RADIOGRAPHY REPORTS REQUIRED							
SHELL SIDE JOINT EFFICIENCY				SHELL SIDE JOINT EFFICIENCY							
HEAD	SHELL			HEAD	SHELL						
	100%			100%	100%						
HYDROSTATIC TEST				HYDROSTATIC TEST							
YES	NO	CHAMBER		PRESSURE	DURATION	CHART RECORD					
				PSI	MINUTES	YES	NO				
				196	PER CODE						
				196	PER CODE						

CONSTRUCTION DATA

(SEE 'SCHEDULE OF OPENINGS' FOR ALL NOZZLE DATA)

TYPE OF HEADS: SHELL SIDE: --- TUBE SIDE: --- WELD CAP

SHELL MATERIALS: SHELL SIDE: SA-106 B TUBE SIDE: SA-312 TP316/316L (100% X-RAY LONG SEAM)

HEAD MATERIALS: SHELL SIDE: --- TUBE SIDE: SA-403 WP-S 316/316L

TUBES: SA-213 TP316/316L (SEAMLESS)

TUBESHEETS: SA-240 316/316L

BAFFLES: SA-36

TIE RODS: SA-36

GIRTH FLANGES: SA-182 F316/316L

EXPANSION JOINT: ---

EXPANSION JOINT TYPE: ---

IMPINGEMENT PLATE: ---

CLADDING SPEC.: ---

BOLTING: SA-193 B8M / SA-194 GR. 8M

GIRTH FLANGE GASKETS: GARLOCK 3500 - 1/8" THK.

NOZZLE GASKETS: ---

SUPPORTS: SA-516 70

INSULATION: SHELL SIDE: 3" THK./CHANNELS: 2" THK. ALL BY OTHERS

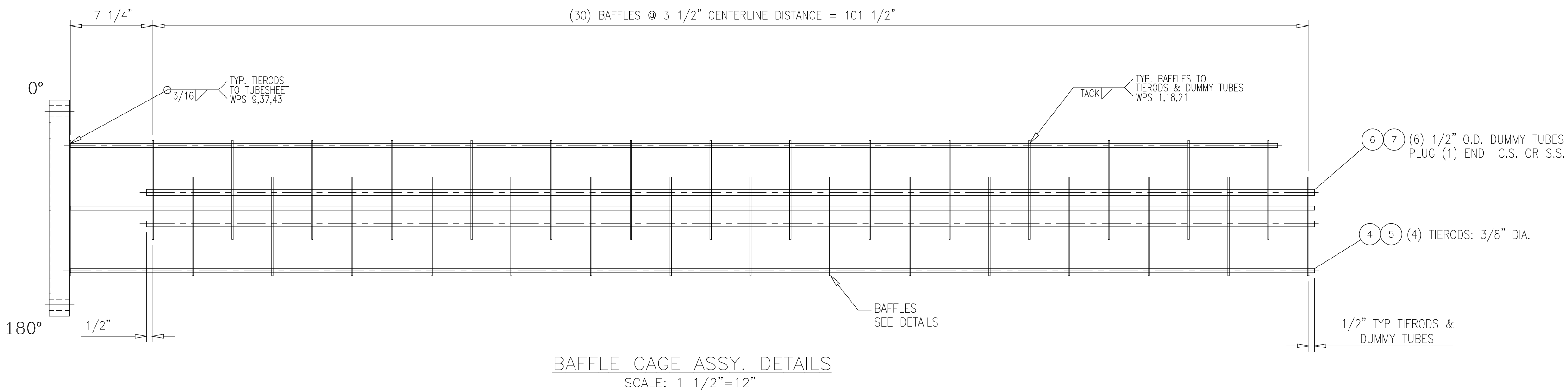
PAINT: C.S. ONLY: SEE NOTE #1

INTERNAL FINISH: MILL

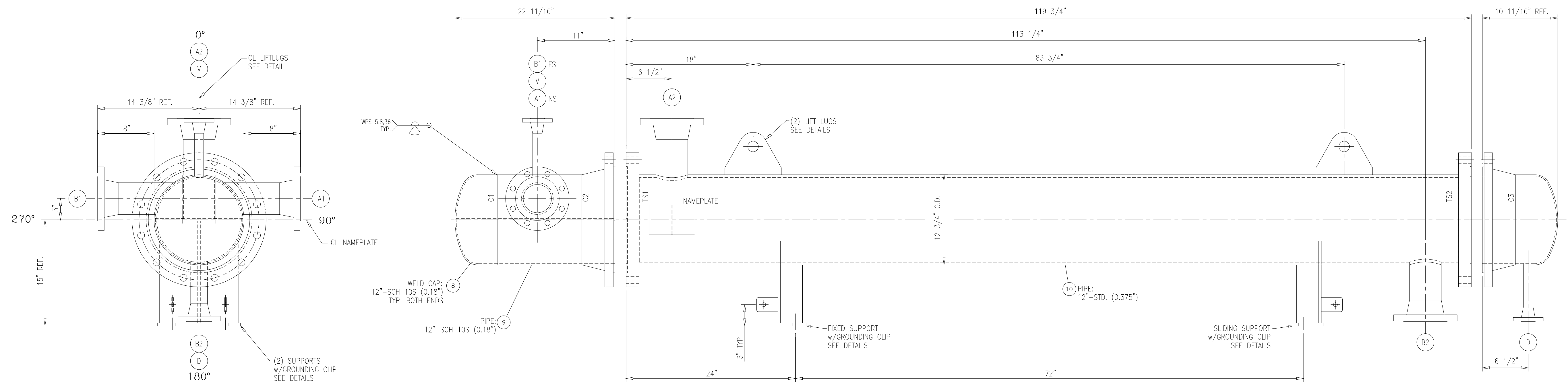
SHIPPING DATA

SHIPPING WEIGHT: 2015 LBS.
TEST WEIGHT: 2610 LBS.

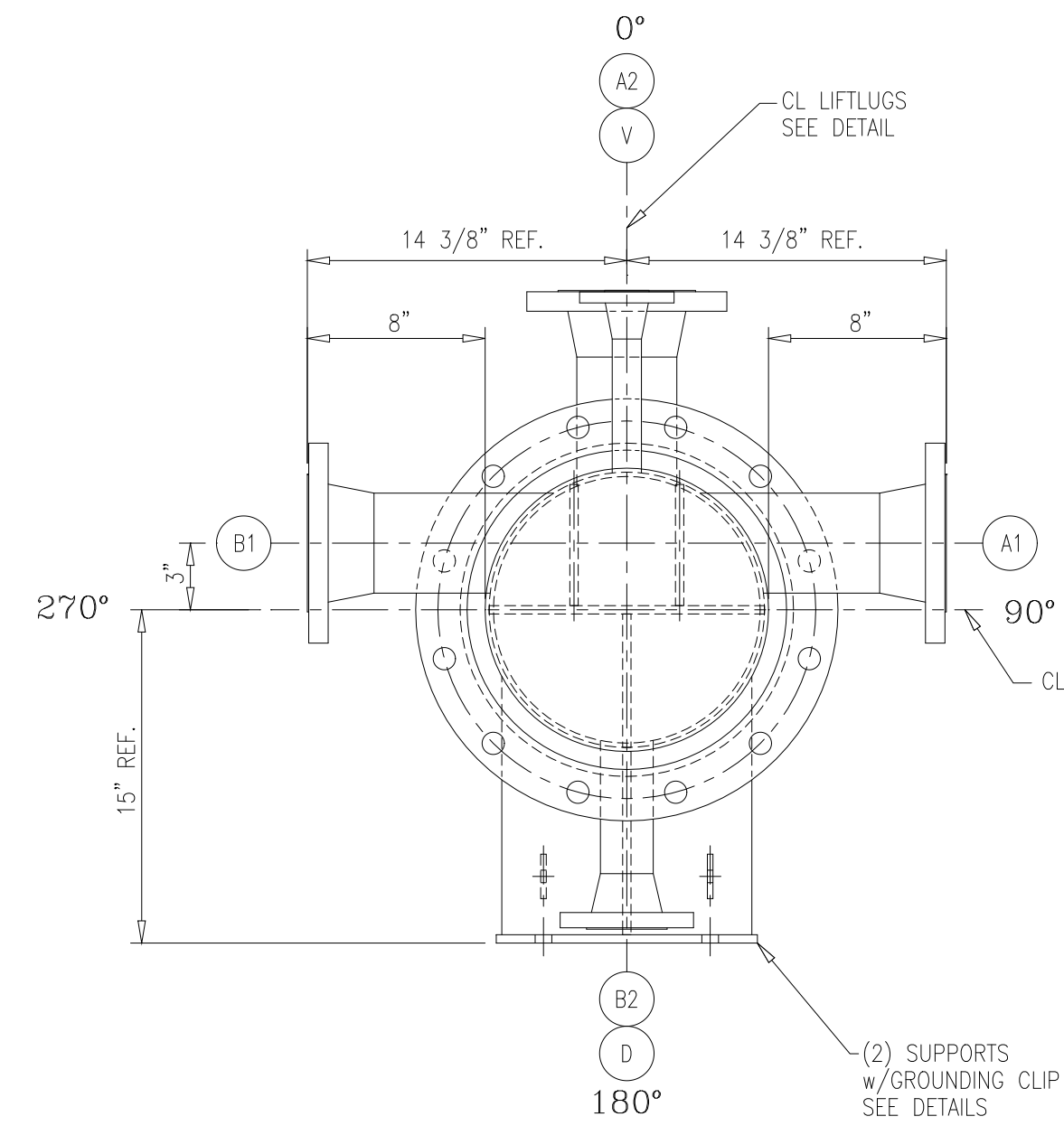
FABRICATED & CERTIFIED BY WARD TANK & HEAT EXCHANGER CORP., CHARLOTTE, N.C.	
W RT-1-T L-TS	SHELL MAMP: FV/150 PSI @ 212 °F JKT./TUBE SIDE MAMP: FV/150 PSI @ 212 °F SHELL MDMT: -20 °F @ 150 PSI JKT./TUBE SIDE MDMT: -20 °F @ 150 PSI TEST PRESS. SHELL: 196 PSI JKT./TUBE SIDE: 196 PSI MFR. S. N. HC-6863 YR. BUILT: 2008 CUSTOMER: EVONIK DEGUSSA CORPORATION P.O. NO. 4500259378 DATE: 1/11/08 NOMENCLATURE: #12-120 BEM HEAT EXCHANGER EQUIP. NO. 3025 MAEWP: SS/TS: 15 PSI@212°F
NAMEPLATE STAMPING DETAIL	



BAFFLE CAGE ASSY. DETAILS
SCALE: 1 1/2"=12"



ELEVATION VIEW
SEE END VIEW FOR TRUE ORIENTATION
SCALE: 1 1/2"=12"



END VIEW
TRUE ORIENTATION
SCALE: 1 1/2"=12"

S.S. NOZZLE WPS 5,8,36,54
C.S. NOZZLE WPS 1,18,21

AS-BUILT PRINT
WARD TANK AND HEAT EXCHANGER CORP
By: T. REILLY
Date: 5/20/08

MARK	QTY	SIZE	SERIES	TYPE	MAT'L	BORE	SERVICE	ITEM NO.	WALL THK. (Tr)	SCH.	MAT'L	INT. RAD.	THK.	WIDTH	MATERIAL	PROJ.	NECK	PAD	ATTACHMENT NO.	REMARKS
D	1	1"	150#	RFWN	SA-182 F316/316L	40S	TUBESIDE DRAIN	28,29	0.133	40S	SA-312 TP316/316L	1/8"	-	-	-	8"	3/16"	-	III, IX	
V	1	1"	150#	RFWN	SA-182 F316/316L	40S	TUBESIDE VENT	28,29	0.133	40S	SA-312 TP316/316L	1/8"	-	-	-	8"	3/16"	-	III, IX	
B1	1	4"	150#	RFWN	SA-182 F316/316L	40S	RAW ACH OUTLET	26,27	0.237	40S	SA-312 TP316/316L	1/8"	-	-	-	**	1/4"	-	III, IX	
A1	1	4"	150#	RFWN	SA-182 F316/316L	40S	RAW ACH INLET	26,27	0.237	40S	SA-312 TP316/316L	1/8"	-	-	-	**	1/4"	-	III, IX	
B2	1	4"	150#	RFWN	SA-105	STD.	40% GLYCOL OUTLET	24,25	0.237	STD	SA-106 B	1/8"	-	-	-	8"	1/4"	-	III, IX	
A2	1	4"	150#	RFWN	SA-105	STD.	40% GLYCOL INLET	24,25	0.237	STD	SA-106 B	1/8"	-	-	-	8"	1/4"	-	III, IX	

SCHEDULE OF OPENINGS

REV NO.	DATE	DESCRIPTION	BY
1	3/13/2008	REVISED PER CUSTOMERS COMMENTS/RELEASED FOR FABRICATION	DMB
0	2/19/2008	FOR CUSTOMER APPROVAL	TFR

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WARD TANK AND HEAT EXCHANGER CORP 6670 E. HARRIS BLVD. CHARLOTTE, NC 28219	
CUSTOMER: EVONIK DEGUSSA CORPORATION THEODORE, AL	PURCHASE ORDER NUMBER: 4500259378
TITLE: ACH COOLER II BEM HEAT EXCHANGER	
EQUIPMENT NO. 3025	SCALE AS NOTED
APPROVED BY: DB	DATE: 2/19/2008
DRAWING NUMBER: 2008-HC-6863	REV. NO. 1
SHEET 1 OF 2	

WTC Q.C. DEPARTMENT USE ONLY

