API BASCO DEFAULTS (UNLESS OTHERWISE SPECIFIED)

ALL DIMENSIONS IN INCHES UNLESS DENOTED AS METRIC (mm)
1" = 1 INCH = 25.4mm
3rd ANGLE

TOLERANCES (unless specified) PER TEMA STANDARDS
ALL BOLT HOLES STRADDLE VERTICAL CENTERLINES.

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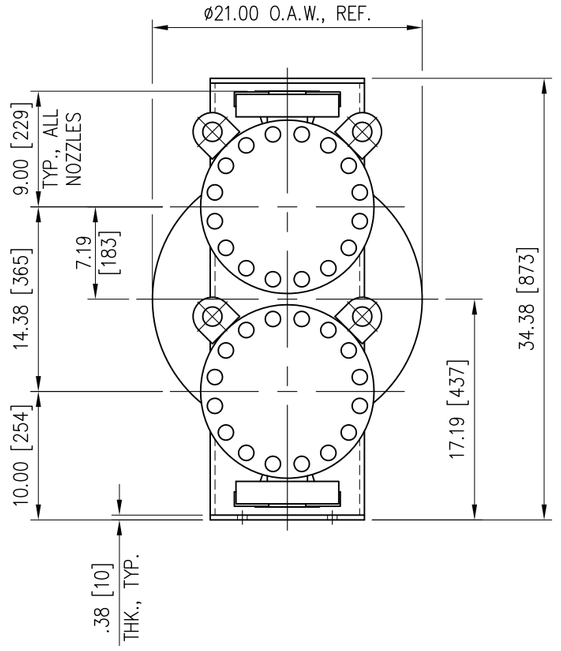
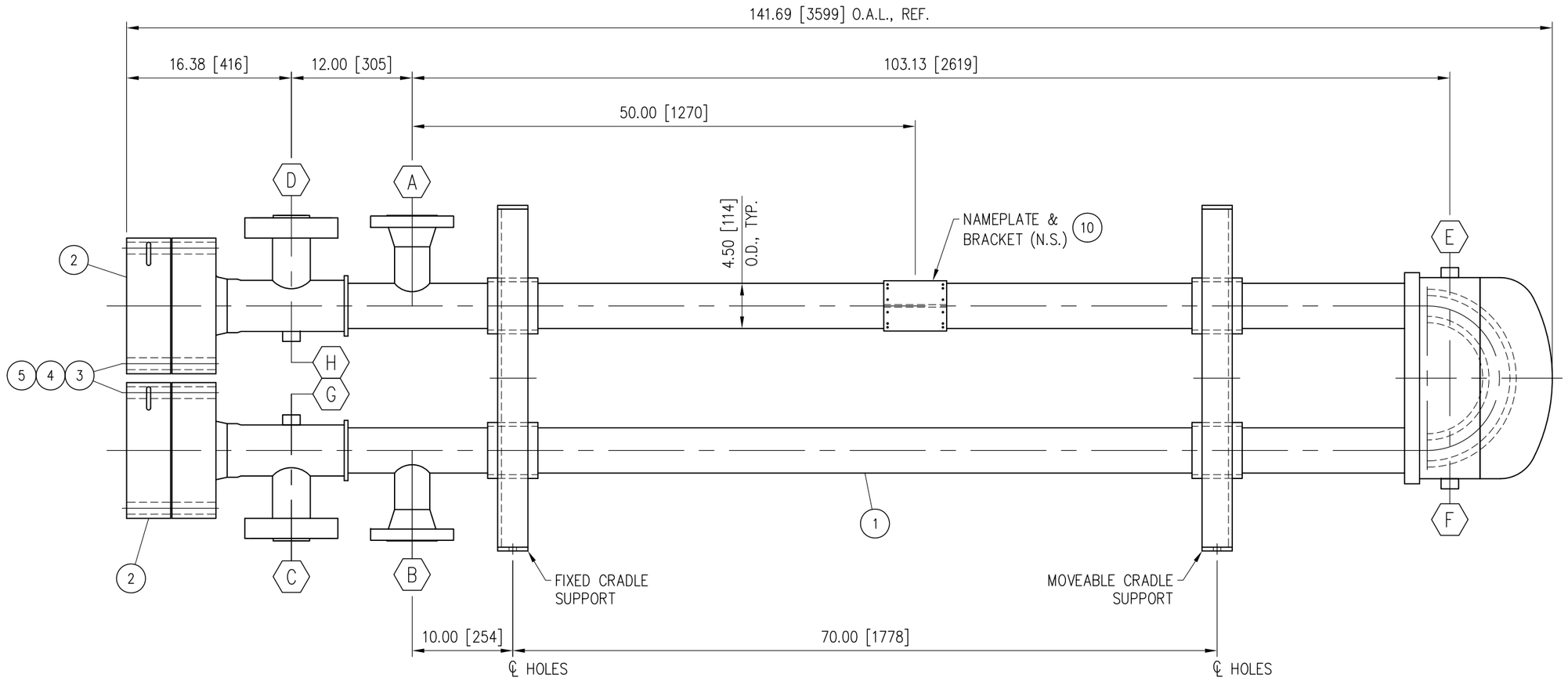
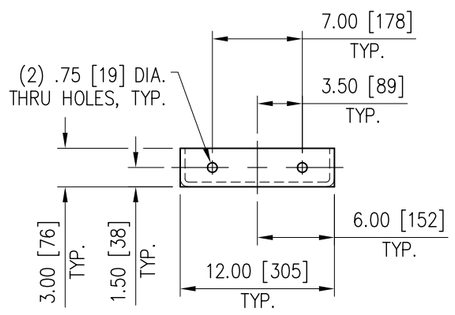






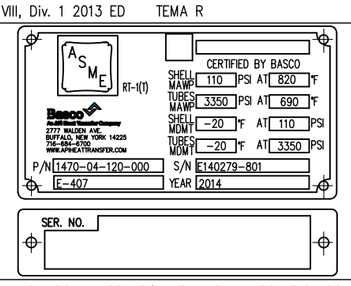
NOTES:
1.) QUANTITY: ONE (1) TOTAL
2.) EXTERNAL FINISH: SHELL SIDE: SANDBLAST PER SSPC-SP-6
PRIME COAT: KEM HI-TEMP 850 @ 1-1.5 MILS DFT. COLOR: LIGHT GRAY.
TOP COAT: KEM HI-TEMP 850 @ 1-1.5 MILS DFT. COLOR: STEEL GRAY
EXTERNAL FINISH: TUBE SIDE: ALUMINUM OXIDE BLAST
3.) INTERNAL FINISH: BLAST PER STD SHOP PRACTICE.
4.) ESTIMATED WEIGHTS:
EMPTY: 1800 LBS [816 KGS]
FLOODED: 1960 LBS [889 KGS]
COVER: 185 LBS [84 KGS]

NOZZLE SCHEDULE			
TAG	SIZE	TYPE	SERVICE
A	3"	300# ANSI RFWN	SHELL SIDE INLET
B	3"	300# ANSI RFWN	SHELL SIDE OUTLET
C	2"	2500# ANSI RFLWN	TUBE SIDE INLET
D	2"	2500# ANSI RFLWN	TUBE SIDE OUTLET
E	3/4"	6000# NPT CPLG	SHELL SIDE VENT
F	3/4"	6000# NPT CPLG	SHELL SIDE DRAIN
G	3/4"	6000# NPT CPLG	TUBE SIDE VENT
H	3/4"	6000# NPT CPLG	TUBE SIDE DRAIN
J			
K			
L			
M			
N			

DESIGN DATA		
	SHELL SIDE	TUBE SIDE
DESIGN PRESSURE	110 PSIG / 7.6 Bar	3350 PSIG / 231.7 Bar
TEST PRESSURE	246 PSIG / 10.6 Bar	5311 PSIG / 331 Bar
DESIGN TEMP	-20/820℉ -29/438℃	-20/690℉ -29/366℃
CORR. ALLOWANCE	.125 [3]	NONE
RADIOGRAPHY	NONE	FULL PER CODE
PWHT	NONE	NONE
TUBE/TUBE SHEET JOINT = STRENGTH WELDED		

MATERIALS OF CONSTRUCTION		
PART	SHELL SIDE	TUBE SIDE
TUBES	SA-249 316	
TUBESHEETS	SA-240 316	
BAFFLE/FINS	STEEL	
HEADS	SA-516 70	SA-240 316
SHELL	SA-53 B	SA-182 F316
NOZZ FLGS	SA-105	SA-182 F316
CPLGS	SA-105	SA-182 F316
BOLTS/NUTS	SA-193 B7 / SA-194 2H ZINC PLATED	
GASKETS	316SS SPIRAL WOUND CGI	
O-RINGS		
BODY FLGS	SA-516 70	SA-182 F316

DIMENSIONS & DATA CERTIFIED FOR
CUST. ORDER: 008317 PATRIOT FUELS BIODIESEL, LLC
BASCO ORDER: E140279-801
BY: JCS DATE: 07/28/2014
CODES:
ASME VIII, Div. 1 2013 ED TEMA R



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DRAWN 07/28/2014 BY: JCS	CHECK WH
SCALE 1:12	CONTRACT NO E140279-801

Basco
An API Heat Transfer Company

SUPER-2 HEATER
4 X 120 AW HAIRPIN

SIZE	DWG NO	REV
C	1470-04-120-000	0

Item	Qty	Description	Mat'l	Specification	Size	Dwg No	Part No
12	0	PAINT: KEM HI-TEMP 850 (STEEL GRAY)					4051-02-0199-02
11	0	PAINT: KEM HI-TEMP 850 (LIGHT GRAY)					4051-99-0299-04
10	1	NAMEPLATE		STN. STL.			4072-01-0106-01
9	2	SHIP COVER: 3"-300#		PLASTIC			4075-03-3012-00
8	2	SHIP COVER: 1 1/2"-2500#		PLASTIC			4075-15-2512-00
7	2	PIPE PLUG: 3/4" NPT		SA-105			4020-95-0309-00
6	2	PIPE PLUG: 3/4" NPT		SA-182 316			4020-95-0311-00
5	64	HEX NUT: 1"-8 UNC	ZINC PLTD	SA-194 2H			4026-43-0219-01
4	32	STUD: 1"-8 UNC x 11.50" LG	ZINC PLTD	SA-193 B7			4022-43-9219-00
3	2	CHANNEL COVER GASKET		316SS SPWND			4012-05-1115-20
2	2	CHANNEL COVER		SA-240 316	A	3018-05-909-000	3018-05-909-000
1	1	CORE ASSEMBLY		STEEL/STN. STL.	C	2070-04-120-002	2070-04-120-002