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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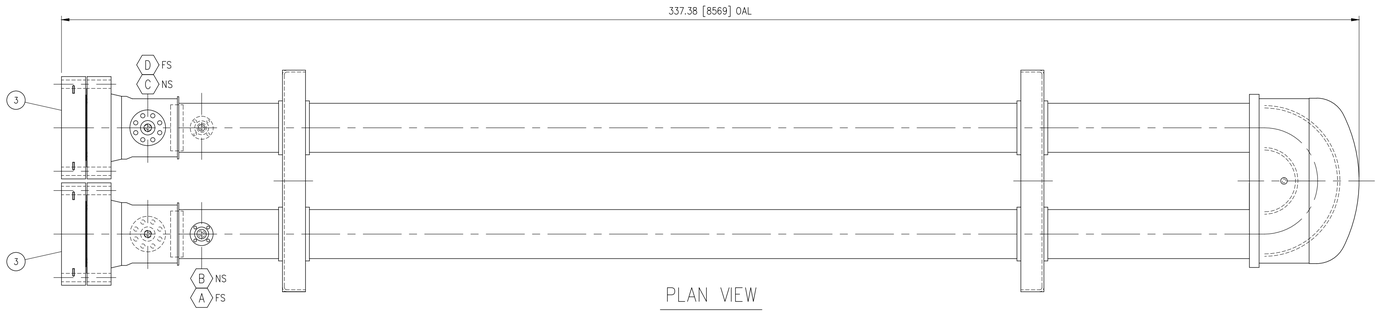
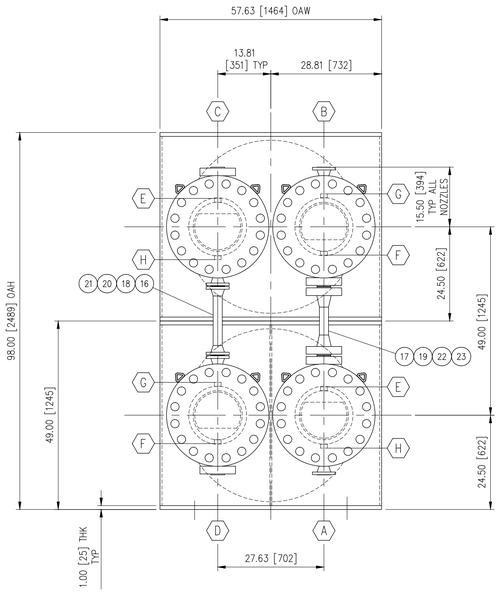
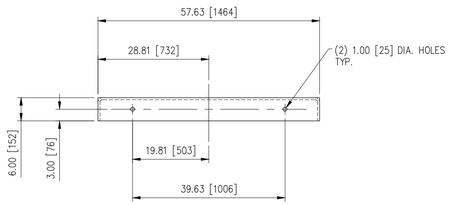
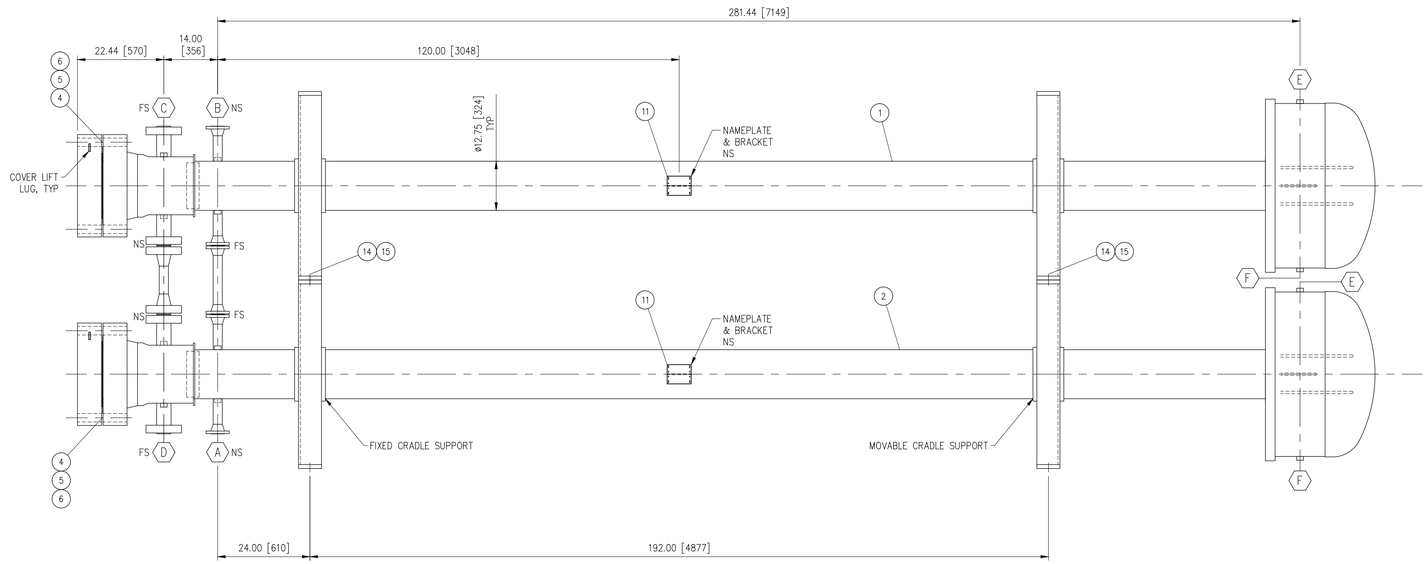


PLAN VIEW







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: 29185 LBS [13238 KGS] (STACKED)
FLOODED: 34725 LBS [15751 KGS] (STACKED)
COVER: 985 LBS [447 KGS] (EACH)

NOZZLE SCHEDULE			
TAG	SIZE	TYPE	SERVICE
A	2"	150# ANSI RFWN	SHELL SIDE INLET
B	2"	150# 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	SHELL SIDE VENT
F	3/4"	6000# NPT	SHELL SIDE DRAIN
G	3/4"	6000# NPT	TUBE SIDE VENT
H	3/4"	6000# NPT	TUBE SIDE DRAIN
J			
K			
L			
M			
N			

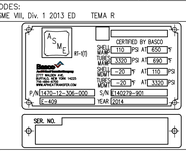
DESIGN DATA		
	SHELL SIDE	TUBE SIDE
DESIGN PRESSURE	110 PSIG / 7.6 BarG	3320 PSIG / 228.9 BarG
TEST PRESSURE	153 PSIG / 10.5 BarG	4743 PSIG / 327 BarG
DESIGN TEMP	-20/650F ~29/343C	-20/690F ~29/366C
CORR. ALLOWANCE	.125 [3]	NONE
RADIOGRAPHY	NONE	FULL PER CODE
PWHT	NONE	NONE

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-516 70N W/316 OVERLAY
SHELL	SA-53 B / SA-516 70	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 PLTD	
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: E140279-901
BY: whowitt DATE: 07/11/2014
CODES:
ASME VIII, Div. 1 2013 ED TEMA R



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DRAWN 07/11/2014 BY: whowitt	CHECK JCS
SCALE 1:20	CONTRACT NO E140279-901

Basco
An API Heat Transfer Company

SUPER-2 COOLER
12 X 306 AW HAIRPIN (STACKED)

SIZE	DWG NO	REV
D	1470-12-306-000	0

Item	Qty	Description	Mat'l	Specification	Size	Dwg No	Part No
23	32	HVY HEX NUT: 1-8 UNC	ZINC PLTD	SA-194 2H			4026-43-0219-01
22	16	STUD: 1-8UNC X 7.50 LG	ZINC PLTD	SA-193 B7			4022-43-6019-00
21	16	HVY HEX NUT: 5/8-11 UNC		SA-194 2H			4026-37-0203-00
20	8	STUD: 5/8-11UNC X 3.50 LG		SA-193 B7			4022-37-2802-01
19	1	INTERCONNECTING PIPING: 2"-2500#			A		2044-02-000-071
18	1	INTERCONNECTING PIPING: 2"-150#			A		2044-02-000-070
17	2	GASKET: 2"-2500# ANSI	CGI	316SS SPIRAL WND			4012-01-1115-33
16	2	GASKET: 2"-150# ANSI	CG	316SS SPIRAL WND			4012-01-1115-32
15	8	SUPPORT HVY HEX NUT: 7/8-9UNC		SA-194 2H			4026-41-0103-00
14	4	SUPPORT STUD: 7/8-9UNC X 4.50 LG		SA-193 B7			4022-41-3602-00
13	0	PAINT: HEM HI-TEMP 850 (STEEL GRAY)					4051-02-0199-02
12	0	PAINT: HEM HI-TEMP 850 (LIGHT GRAY)					4051-99-0299-04
11	2	NAMEPLATE (ASME)		STN STL			4072-01-0106-01
10	6	PIPE PLUG: 3/4 NPT ROUND		SA-105			4020-95-0309-00
9	4	PIPE PLUG: 3/4 NPT ROUND		SA-182 F316			4020-95-0311-00
8	2	SHIPPING COVER: 2-2500#		PLASTIC			4075-02-2512-00
7	2	SHIPPING COVER: 2-150#		PLASTIC			4075-02-1512-00
6	128	HVY HEX NUT: 2-8 UN	ZINC PLTD	SA-194 2H			4026-60-0219-00
5	64	STUD: 2-8 UN X 18.00 LG	ZINC PLTD	SA-193 B7			4022-60-9919-00
4	4	GASKET:	CGI	316SS SPIRAL WND			4012-10-1115-40
3	4	CHANNEL COVER		STL W/SS OL	A		3018-10-901-011
2	1	BOTTOM CORE ASSEMBLY		STN STL/STEEL	C		2070-12-306-001
1	1	TOP CORE ASSEMBLY		STN STL/STEEL	C		2070-12-306-000