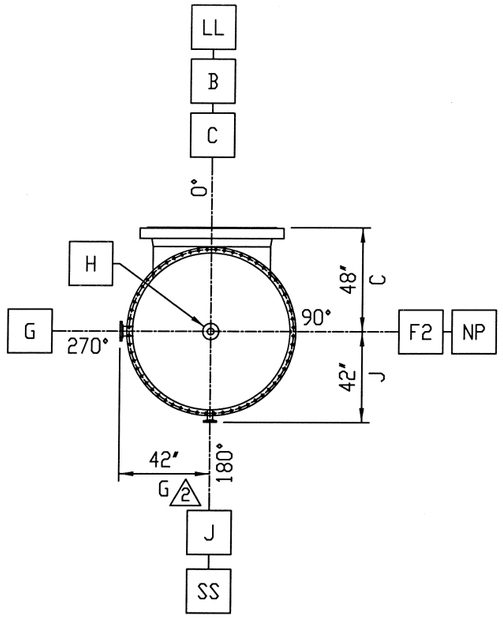
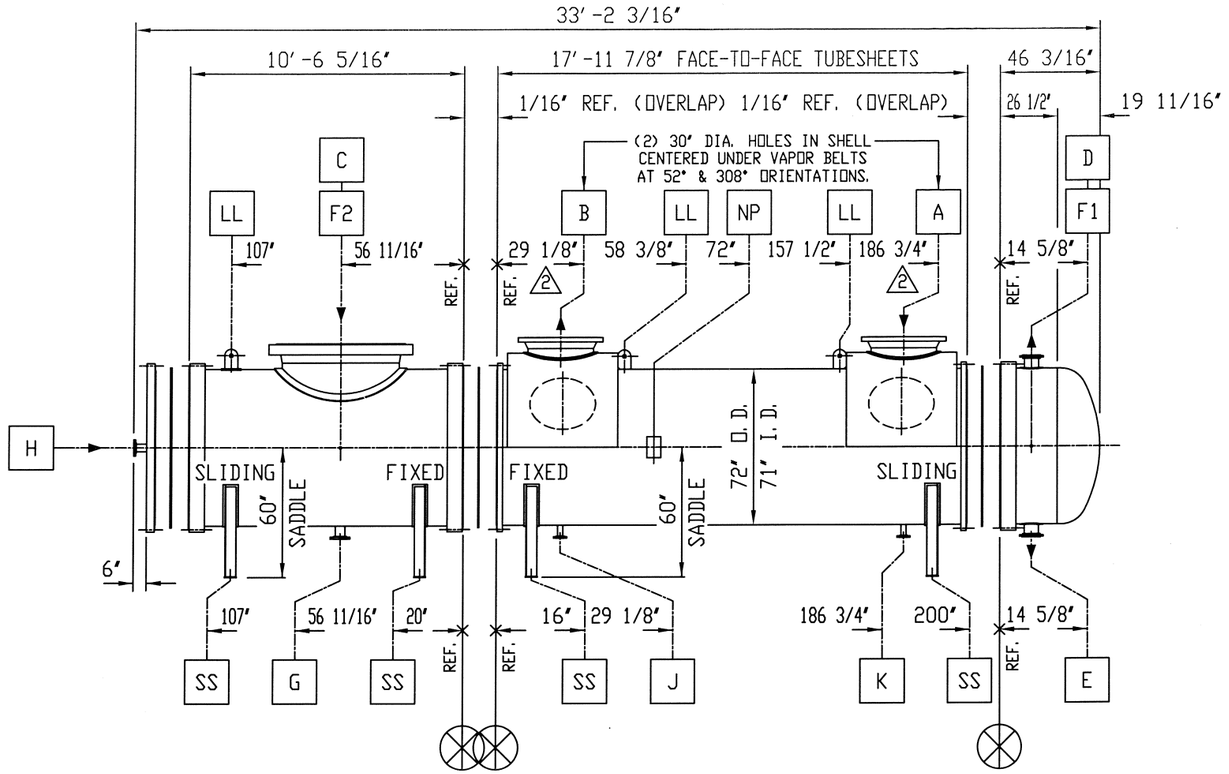
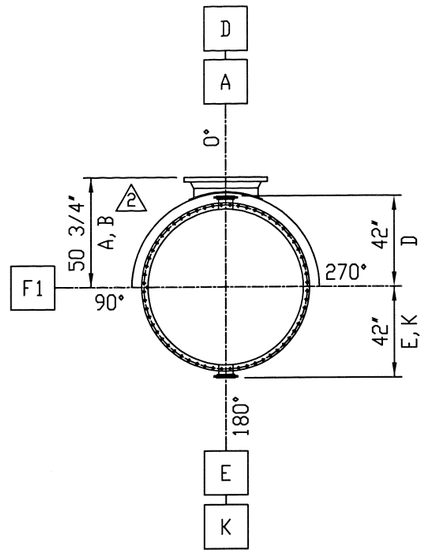


ORIENTATION
VIEWED FROM LEFT END



GENERAL ARRANGEMENT
NOT A TRUE ORIENTATION



ORIENTATION
VIEWED FROM RIGHT END

CONNECTION SCHEDULE

MARK	SIZE	RATING	TYPE	SERVICE
A	30″	150	RFWN	SHELLSIDE - INLET
B	30″	150	RFWN	SHELLSIDE - OUTLET
C	54″	150	LJFX	TUBESIDE - INLET
D	6″	150	LJFX	TUBESIDE - OUTLET
E	6″	150	LJFX	TUBESIDE - OUTLET
F1	1/2″	3000	HC	PRESS. GAGE CPLG
F2	1/2″	3000	HC	PRESS. GAGE CPLG
G	4″	150	RFSO	TUBESIDE - INLET
H	3″	150	RFSO	TUBESIDE - LIQUID INLET
J	2″	150	RFSO	SIGHT GLASS
K	2″	150	RFSO	SIGHT GLASS

2 SURFACE PREP
1) COMMERCIAL BLAST CLEAN, EXTERNAL CARBON STEEL PER SSPC-SP6 (ANCHOR PROFILE 1 1/2 TO 3 MILS)

PAINT SPEC
1) PRIME WITH ONE (1) COAT CARBOLINE CARBOGARD 890 EPOXY, COLOR: 0780 NEUTRAL GRAY (4 TO 6 MILS DFT). FINISH COAT WITH (1) COAT CARBOLINE CARBOTHANE 134 HG POLYURETHANE, COLOR: C705 LT. GRAY (2 TO 2 1/2 MILS DFT)

GENERAL NOTES

1) ALL BOLT HOLES TO STRADDLE NATURAL CENTERLINES.
2) ALL NOZZLES TO HAVE PROTECTIVE COVERS FOR SHIPMENT.
3) ALL THREADED OPENINGS FURNISHED WITH PLUGS.
1 4) 100% JOINT EFFICIENCY USED FOR HEAD CALC'S. - MIN. ONE ADDITIONAL SPOT ON LONG. & CIRC. SEAMS. RT4 TUBESIDE.

MATERIALS:	SHELL SIDE	TUBE SIDE
TUBES (1785) 1 1/4″ O.D. x 18BWG (0.049) AVG , SA-249-TP304		
TUBESHEET	SA-240-304/304L	SA-240-304/304L
SHELL	SA-516-70	SA-240-304
BODY FLANGE		SA-105N
HEAD		SA-240-304
NOZZLE NECK	SA-516-70	SA-312-304/304L WLD
NOZZLE FLANGE	SA-105	SA-182-F304L
BOLTING		SA-193-B7/SA-194-2H
GASKETS		P.T.F.E. 1

CERTIFIED
CORRECT FOR FABRICATION, BY DATE 6/11/07

DESIGN DATA	SHELL SIDE	TUBE SIDE
DESIGN PRESSURE - INTERNAL	150 PSI	150 PSI
DESIGN PRESSURE - EXTERNAL	FV	FV
DESIGN TEMPERATURE	200°F	300°F
HYDRO TEST PRESSURE	195 PSI	195 PSI
CORROSION ALLOWANCE	0.0625″	0.0″
RADIOGRAPH	NONE	SPOT (NOTE 4) 1
STRESS RELIEF	NONE	NONE
NO. OF PASSES	1	1
MIN. DESIGN METAL TEMP	-20°F AT 150 PSI	-20°F AT 150 PSI

TUBE SURFACE (EXTERNAL) 10259 SQ. FT.

APPROX. WEIGHT EACH	EMPTY	FULL WATER	BUNDLE
	57081 LBS.	127200 LBS.	29838 LBS.

DESIGN & CONSTRUCTION IN ACCORDANCE WITH:
ASME SECTION VIII, DIV. 1 STAMPED 2004 ED'A'06 'U'
T.E.M.A. CLASS C

NO.	DATE	DESCRIPTION	BY	CHK
2	6-11	MOVED SHELL IN/OUT PER CUST. RETURNS	D.L.L.	
1	5-3	CORRECTED BY H.T.S.	D.L.L.	

REVISIONS

CUSTOMER: DELTA T CORP.

TWO UNITS REQUIRED
TAG: H.T.S. NO.: 12928-7, 8.
ITEM NO: E-4504/E-4514
PO NO.: 64000624025

DIMENSIONAL OUTLINE

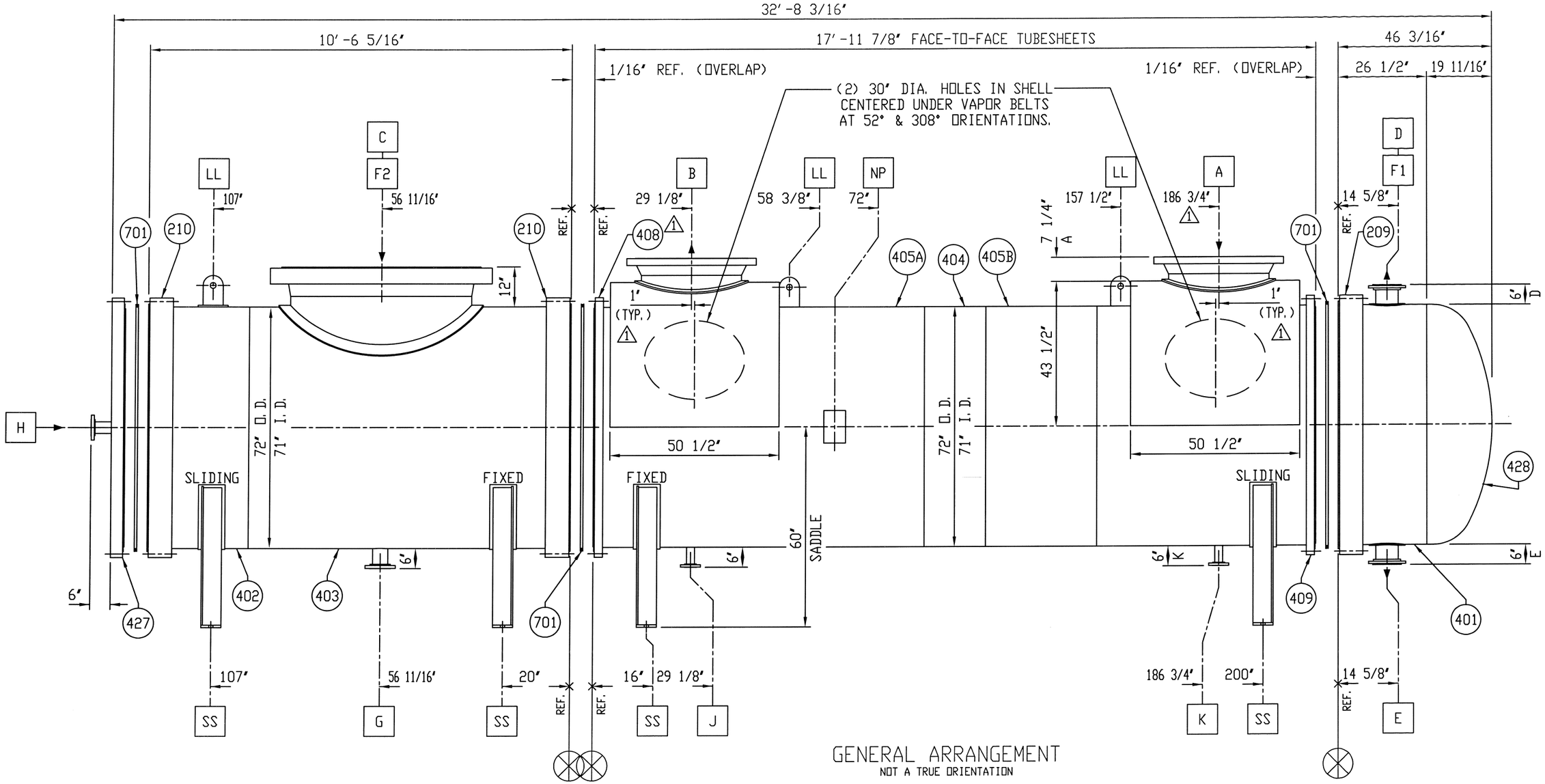
ALTRA BIOFUELS, CARLETON, NEBRASKA
EVAPORATOR CONDENSER #1

SIZE: 71 - 216 TYPE: AEM

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7.HEX

DR. BY	D.L.L.	HTS 12928-7, 8.	
DATE	4-16-07	DWG. NO. B-2928-7-01	REV 2
CHK. BY			



GENERAL ARRANGEMENT
NOT A TRUE ORIENTATION

PART	THK.	DESCRIPTION	PART	THK.	DESCRIPTION
401	3/8″	RIGHT CHANNEL CYLINDER	428	3/8″	RIGHT HEAD
404, 405A, 405B	1/2″	SHELL CYLINDER	402, 403	1/2″	LEFT CHANNEL CYLINDER

SEE DRAWING B-2928-7-03 FOR TRUE ORIENTATIONS

HEAT TRANSFER SYSTEMS, INC
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ST. LOUIS, MO 63111-3655

12928-7.HEX

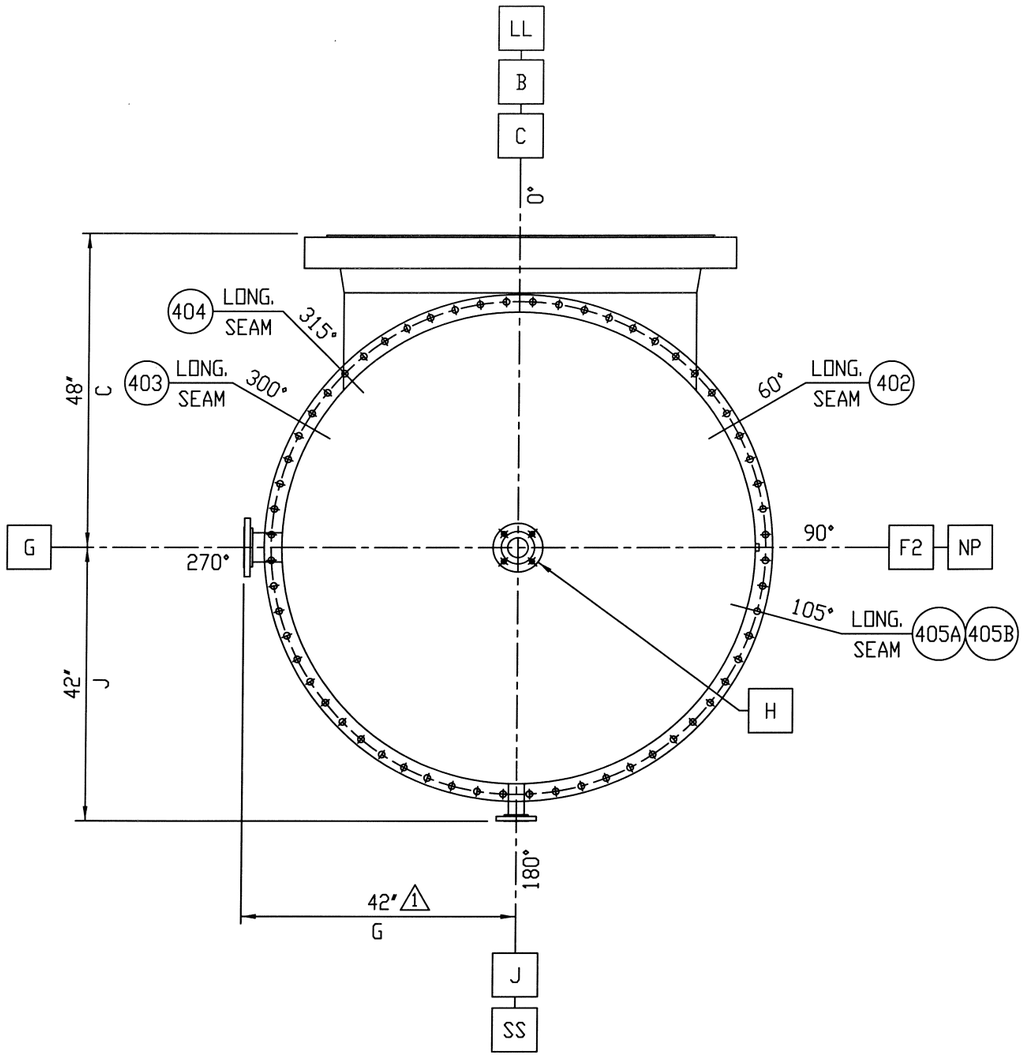
SHELL & CHANNEL DETAILS

NO.	DATE	DESCRIPTION	BY	CHK
1	6-11	MOVED SHELL INLET/OUTLET PER CUST. RETURNS	D. L. L.	

REVISIONS

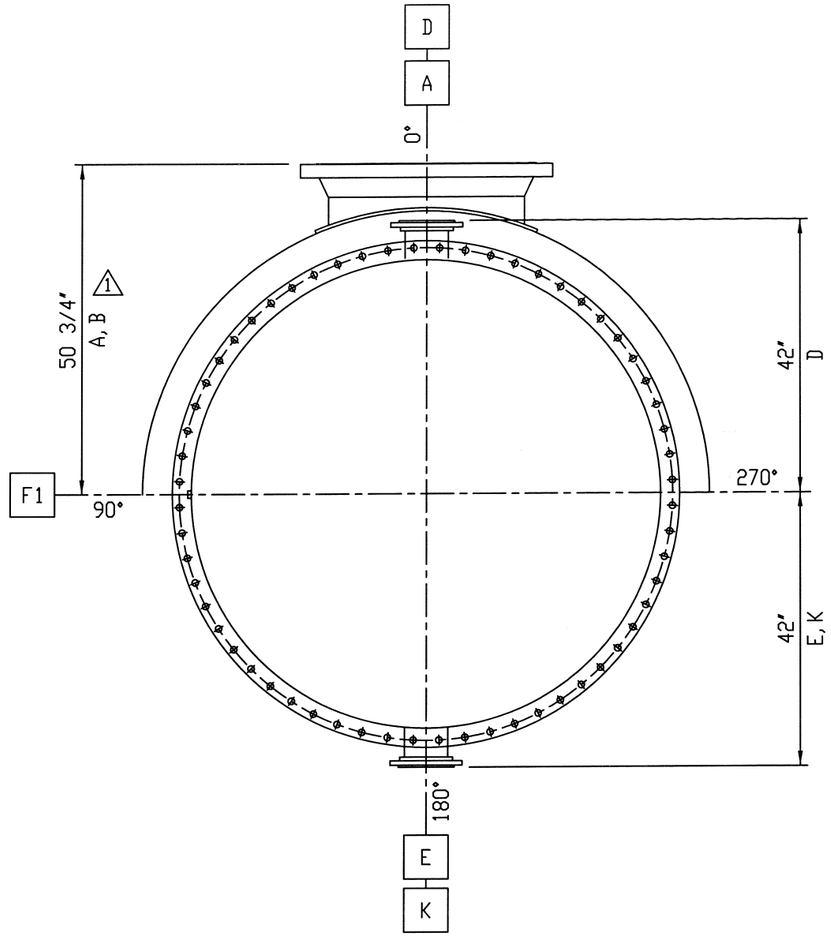
DR. BY D. L. L.
DATE 4-16-07
CHK. BY

HTS 12928-7, 8.
DWG. NO. B-2928-7-02
REV 1



ORIENTATION
VIEWED FROM LEFT END

SHOWING LONGITUDINAL
SEAM ORIENTATIONS



ORIENTATION
VIEWED FROM RIGHT END

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7.HEX

TRUE ORIENTATIONS

NO.	DATE	DESCRIPTION	BY	CHK
1	6-11	REVISED (NOZ. G PROJ) PER CUST. RETURNS	D.L.L.	

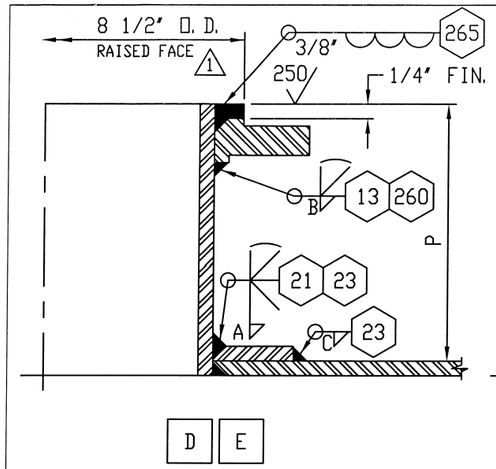
REVISIONS

DR. BY: D.L.L.
DATE: 4-16-07
CHK. BY:

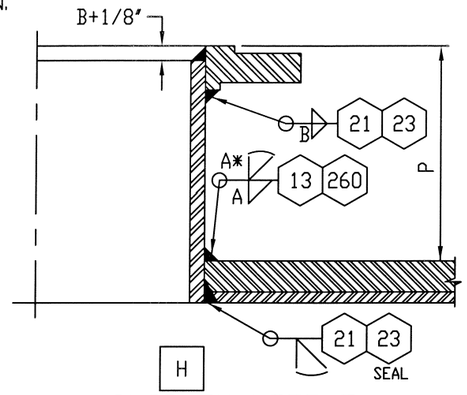
HTS 12928-7, 8.

DWG. NO. B-2928-7-03

REV 1

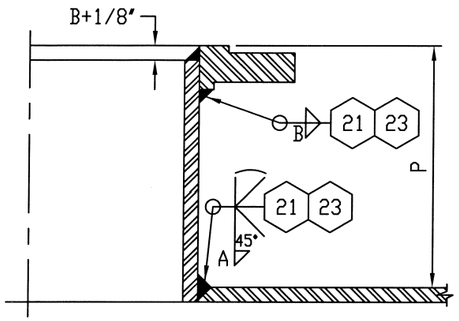


LAP JOINT NOZZLE

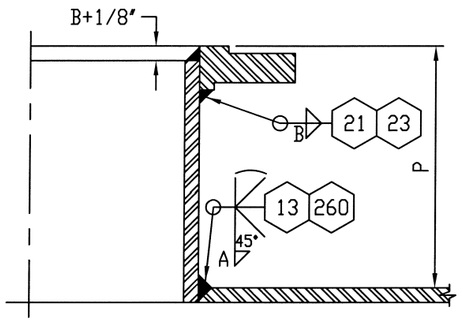


SLIP-ON NOZZLE

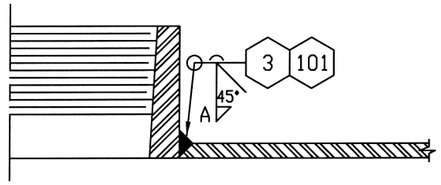
* = MIN. GROOVE DEPTH IN C/S



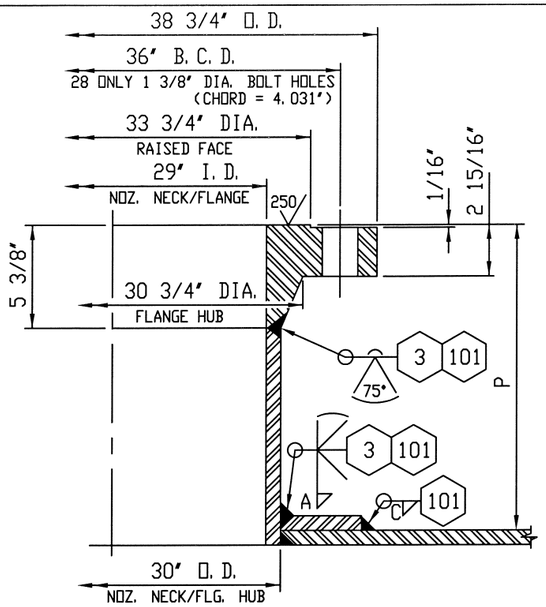
SLIP-ON NOZZLE



SLIP-ON NOZZLE

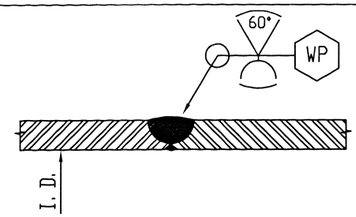


HALF COUPLING DETAIL



WELD NECK NOZZLE

30" CLASS 150 SERIES A RFWN FLANGE
H. T. S. TO FABRICATE PER
ASME B16. 47 - 1990



WELD	WELD PROCEDURE (WP)	
	SHELL SIDE	TUBE SIDE
LONG.	3, 101	21, 23
CIRC.	3, 101	21, 23

LONG. AND CIRC. SEAMS

MK	QTY	SIZE	CONNECTION			NECK			LAP RING		REPAD			BLIND	GASKET	STUD	NUT	WELD SIZE			SERVICE	REMARKS
			RATING	TYPE	PART	OD	PROJ.	PART	MIN. THK.	PART	WIDTH	THK	PART	PART	PART	PART	PART	A	B	C		
K	1	2"	150	RFSO	202	2 3/8"	6"	301	---	---	---	---	---	---	---	---	---	3/16"	3/16"	---	SIGHT GLASS	---
J	1	2"	150	RFSO	202	2 3/8"	6"	301	---	---	---	---	---	---	---	---	---	3/16"	3/16"	---	SIGHT GLASS	---
H	1	3"	150	RFSO	203	3 1/2"	6"	302	---	---	---	---	---	---	---	---	---	1/4"	1/4"	---	TUBESIDE - LIQUID INLET	---
G	1	4"	150	RFSO	204	4 1/2"	6"	303	---	---	---	---	---	---	---	---	---	5/16"	1/4"	---	TUBESIDE - INLET	---
F2	1	1/2"	3000	HC	205	---	---	---	---	---	---	---	---	---	---	---	---	5/16"	---	---	PRESS. GAGE CPLG	---
F1	1	1/2"	3000	HC	205	---	---	---	---	---	---	---	---	---	---	---	---	5/16"	---	---	PRESS. GAGE CPLG	---
E	1	6"	150	LJFX	207	6 5/8"	6"	304	---	---	2"	1/4"	411	---	---	---	---	1/4"	5/16"	3/16"	TUBESIDE - OUTLET	---
D	1	6"	150	LJFX	207	6 5/8"	6"	304	---	---	2"	1/4"	411	---	---	---	---	1/4"	5/16"	3/16"	TUBESIDE - OUTLET	---
C	1	54"	150	LJFX	208	54"	12"	423	1/4"	413	3 1/2"	1/2"	412	---	---	---	---	3/8"	---	3/8"	TUBESIDE - INLET	---
B	1	30"	150	RFWN	201	30"	7 1/4"	424	---	---	2"	1/2"	417	---	---	---	---	3/8"	---	3/8"	SHELLSIDE - OUTLET	---
A	1	30"	150	RFWN	201	30"	7 1/4"	424	---	---	2"	1/2"	417	---	---	---	---	3/8"	---	3/8"	SHELLSIDE - INLET	---

NOZZLE SCHEDULE

DRILL AND TAP FOR 1/4" PIPE SIZE HOLE IN EACH REINFORCING PAD SEGMENT

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7. HEX

NOZZLE & WELDING DETAILS

NO.	DATE	DESCRIPTION	BY	CHK
1	8-1	ADDED RAISED FACE (OVERLAY) DIA. BY H. T. S.	D. L. L.	D. L. L.

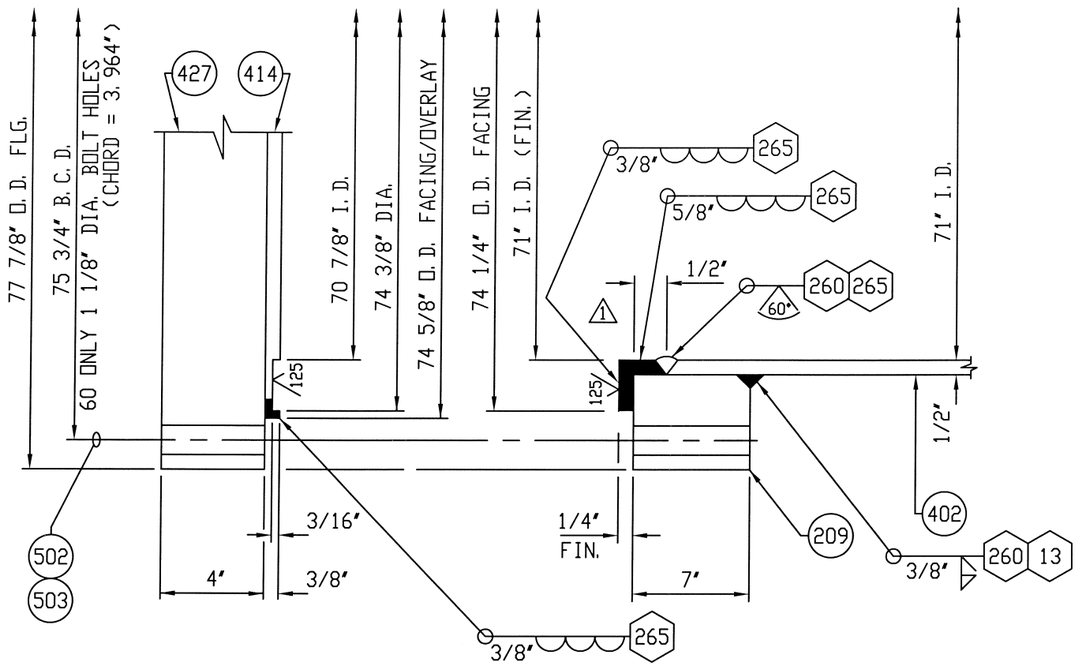
REVISIONS

DR. BY D. L. L.
DATE 4-16-07
CHK. BY D. L. L.

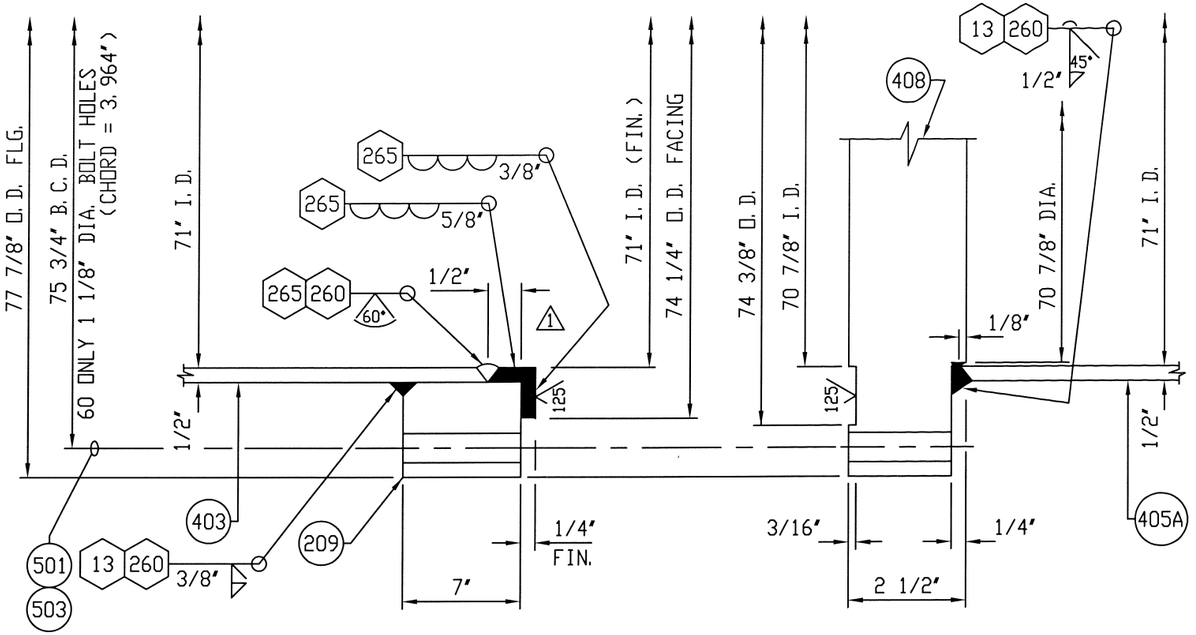
HTS 12928-7, 8.

DWG. NO. B-2928-7-04

REV 1



LEFT COVER CONNECTION DETAIL



LEFT TUBESHEET CONNECTION DETAIL

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7. HEX

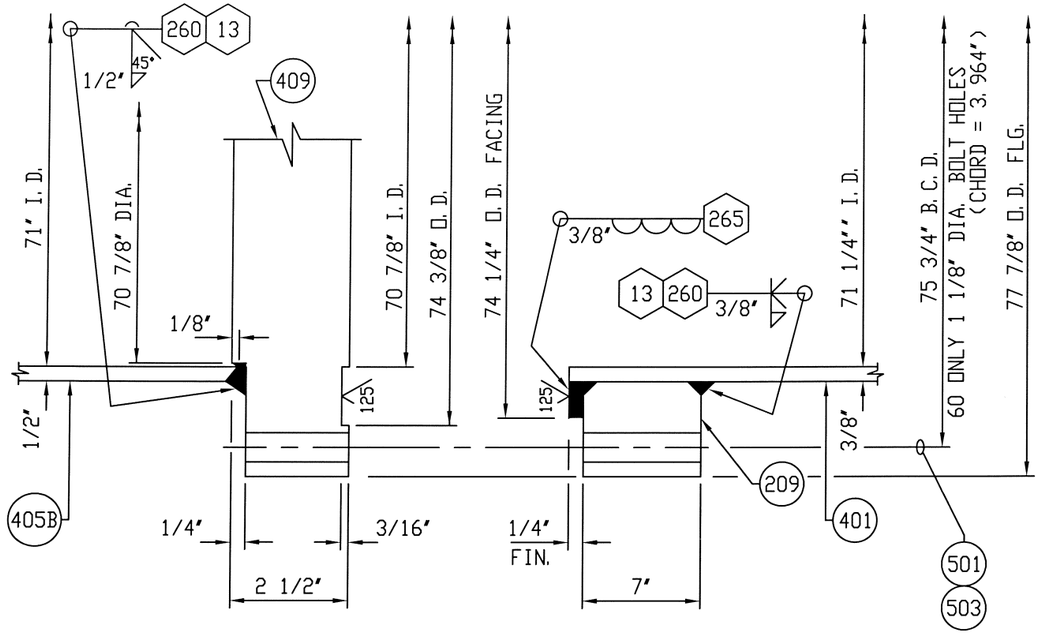
MACHINING DETAILS

NO.	DATE	DESCRIPTION	BY	CHK
1	6-18	REVISED LAP FACING DETAIL FOR FABRICATION	D. L. L.	

REVISIONS

DR. BY D. L. L.
DATE 4-16-07
CHK. BY

HTS 12928-7, 8.
DWG. NO. B-2928-7-05
REV 1



RIGHT TUBESHEET CONNECTION DETAIL

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7. HEX

MACHINING DETAILS

NO.	DATE	DESCRIPTION	BY	CHK

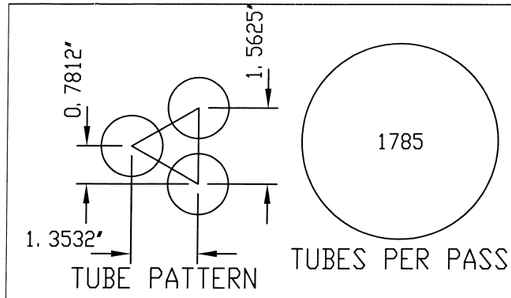
REVISIONS

DR. BY D. L. L.
DATE 4-16-07
CHK. BY

HTS 12928-7, 8.

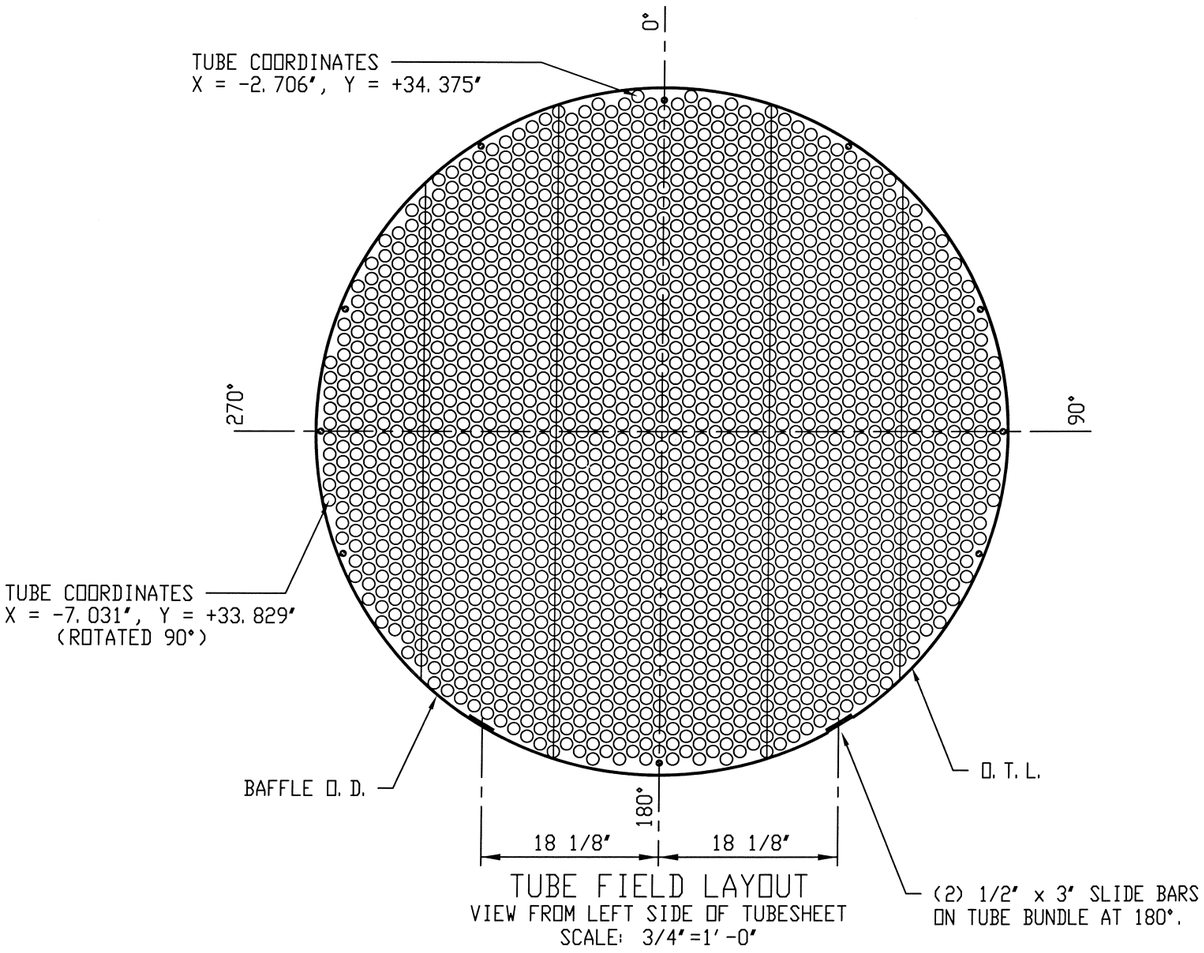
DWG. NO. B-2928-7-06

REV 0



TUBE PATTERN

TUBES PER PASS



TUBE FIELD LAYOUT
VIEW FROM LEFT SIDE OF TUBESHEET
SCALE: 3/4"=1'-0"

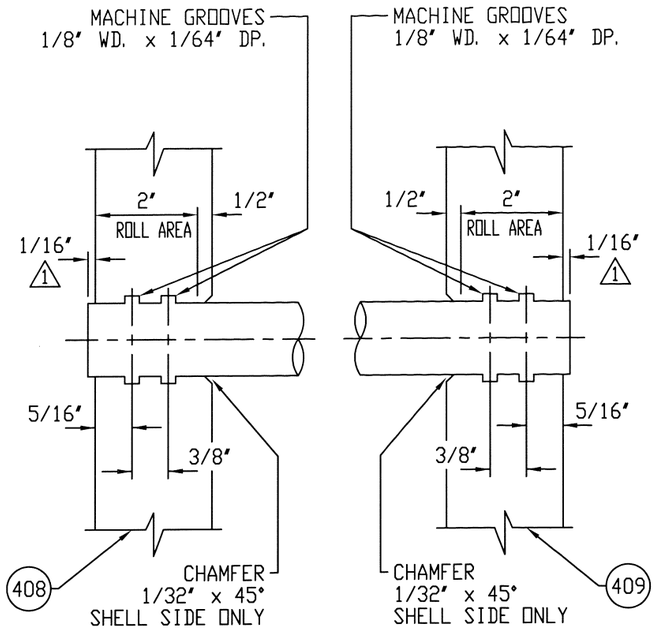
LAYOUT DATA

TUBE HOLES
Quantity: 1785
Tube Dia.: 1.25"
Hole Dia.: 1.264"+0.003", -0.006"
Pattern: TRI.
Pitch: 1.5625"
Passes: 1

TIERODS
Quantity: 10
Diameter: 0.625"

LAYOUT
Baf O.D.: 70.6875"
Max OTL: 70.3542"

BAFFLES
Type: DBL. SEG.
Rotation: VERT.
Cut: 30/30%
Tube Hole: 1.2812"
Tie Rod Hole: 0.6875"



TUBESHEET TUBE HOLE DETAIL

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7.HEX

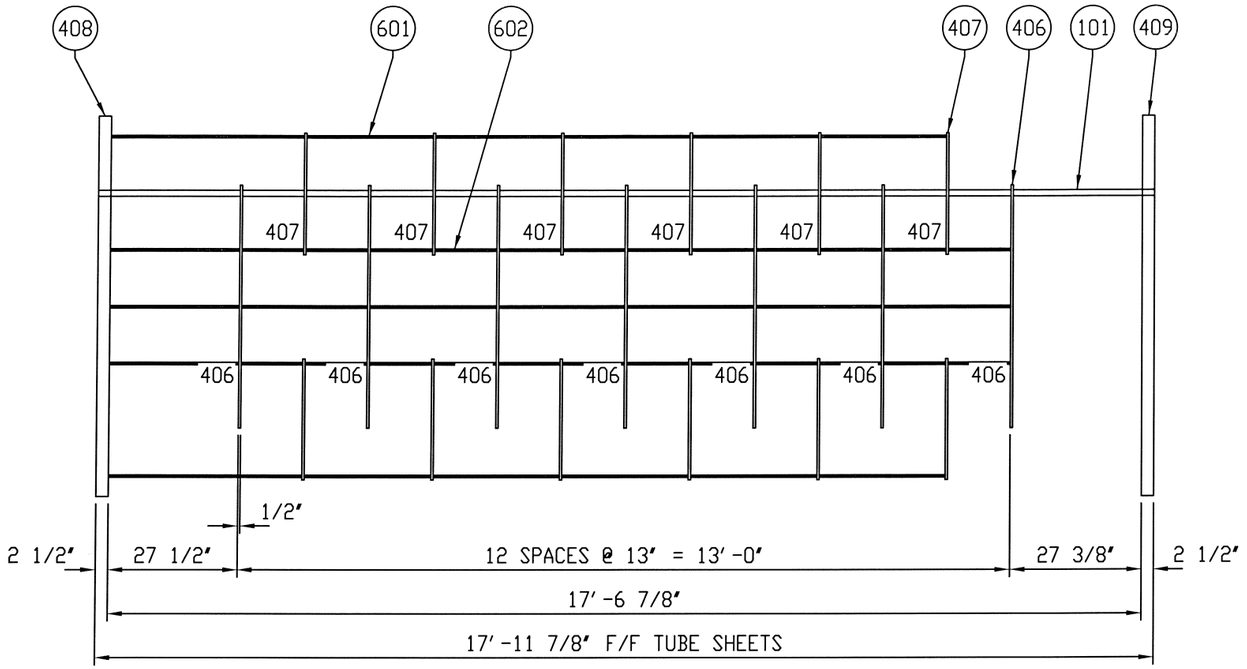
TUBE FIELD LAYOUT

NO.	DATE	DESCRIPTION	BY	CHK
1	5-4	REVISED TUBE PROJECTION BY H.T.S.	D.L.L.	

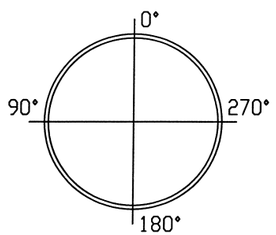
REVISIONS

DR. BY: D.L.L.
DATE: 4-16-07
CHK. BY:

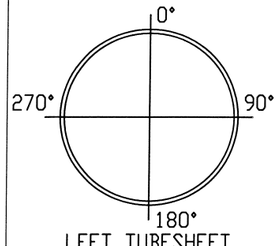
HTS 12928-7,8.
DWG. NO. B-2928-7-07
REV 1



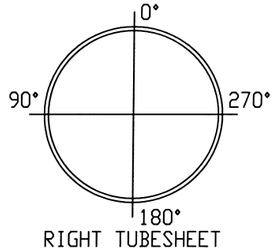
TUBE BUNDLE
PLAN VIEW



LEFT COVER



LEFT TUBESHEET



RIGHT TUBESHEET

MACHINING DETAIL
VIEWED FROM MACHINED SIDE

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7.HEX

BUNDLE DETAIL

NO.	DATE	DESCRIPTION	BY	CHK

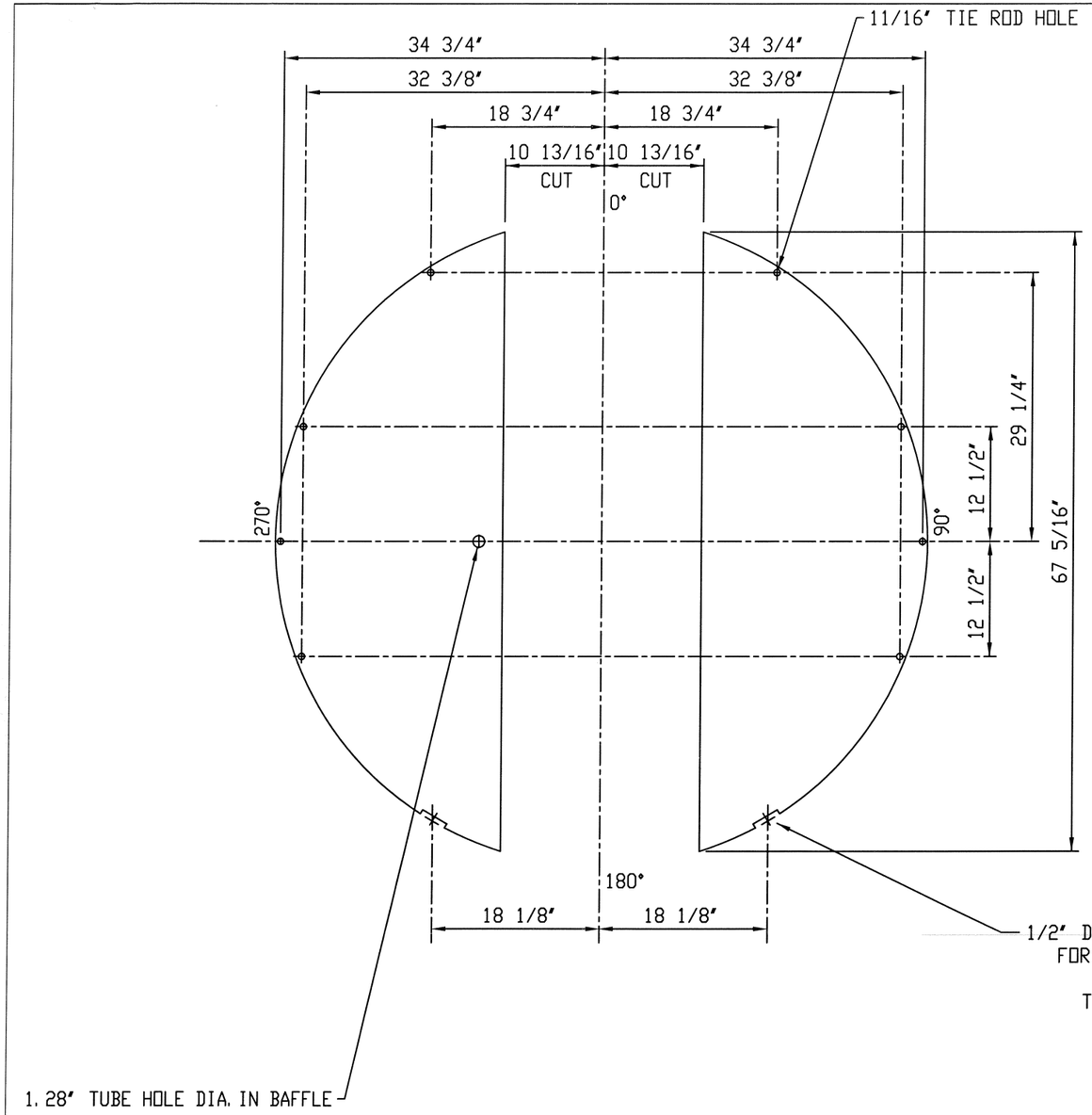
REVISIONS

DR. BY D. L. L.
DATE 4-16-07
CHK. BY

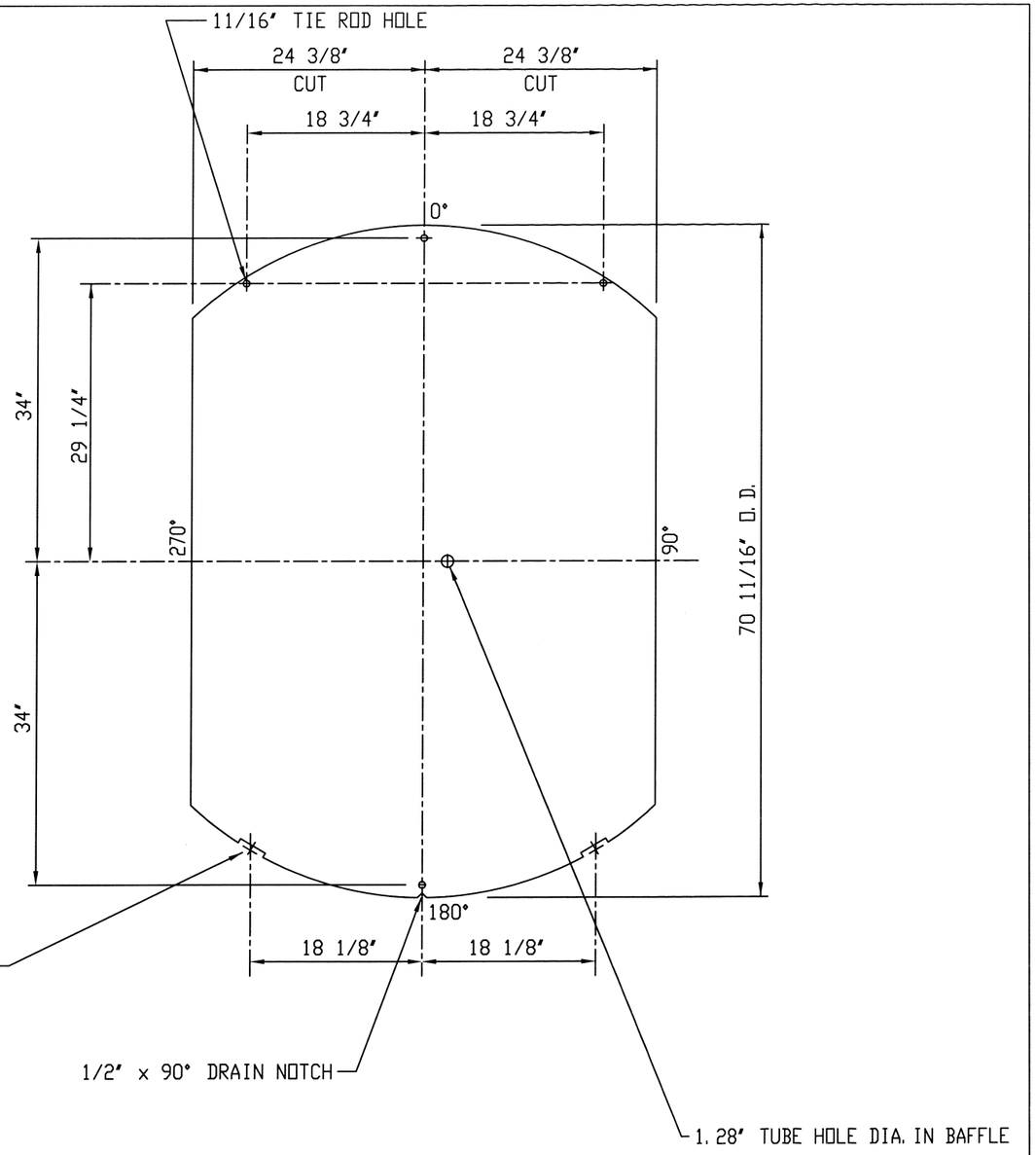
HTS 12928-7, 8.

DWG. NO. B-2928-7-08

REV 0



(407) BAFFLE
QUANTITY = 6



(406) BAFFLE
QUANTITY = 7

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7.HEX

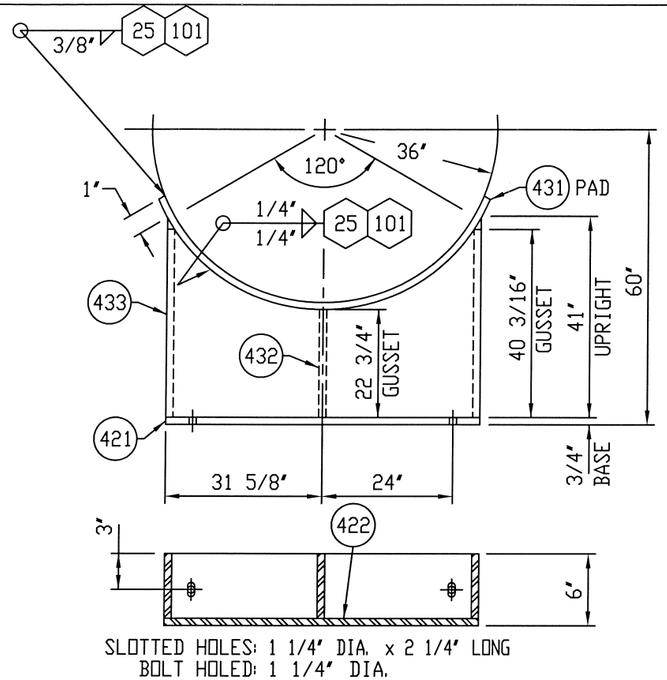
BAFFLE DETAIL

NO.	DATE	DESCRIPTION	BY	CHK

REVISIONS

DR. BY D.L.L.
DATE 4-16-07
CHK. BY

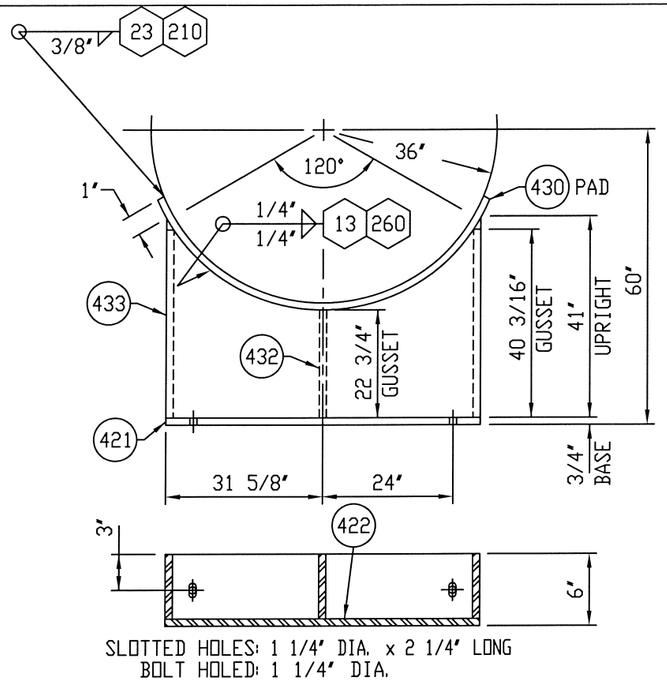
HTS 12928-7, 8.
DWG. NO. B-2928-7-09
REV 0



SLOTTED HOLES: 1 1/4" DIA. x 2 1/4" LONG
BOLT HOLED: 1 1/4" DIA.

25 101 ALL WELDS NOT SHOWN TO BE 1/4" CONTINUOUS WELDS ALL AROUND

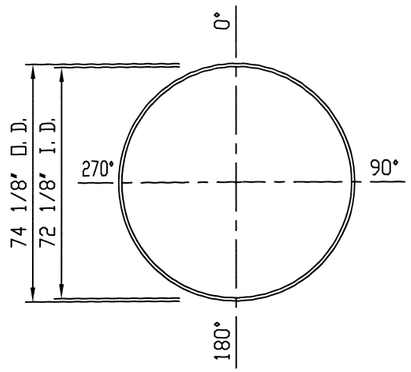
HEAT EXCHANGER
SADDLE SUPPORT DETAIL



SLOTTED HOLES: 1 1/4" DIA. x 2 1/4" LONG
BOLT HOLED: 1 1/4" DIA.

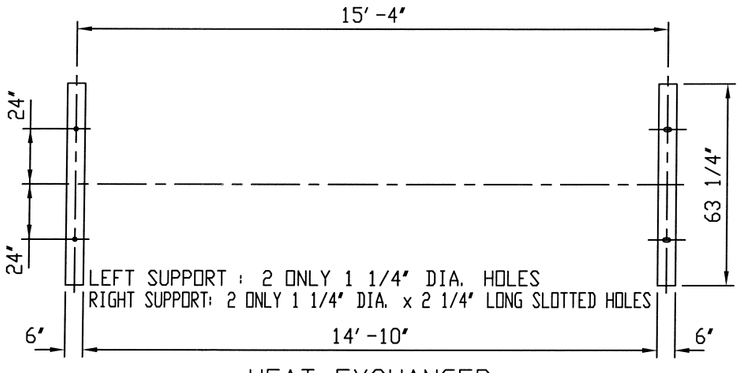
25 101 ALL WELDS NOT SHOWN TO BE 1/4" CONTINUOUS WELDS ALL AROUND

CHANNEL CYLINDER
SADDLE SUPPORT DETAIL

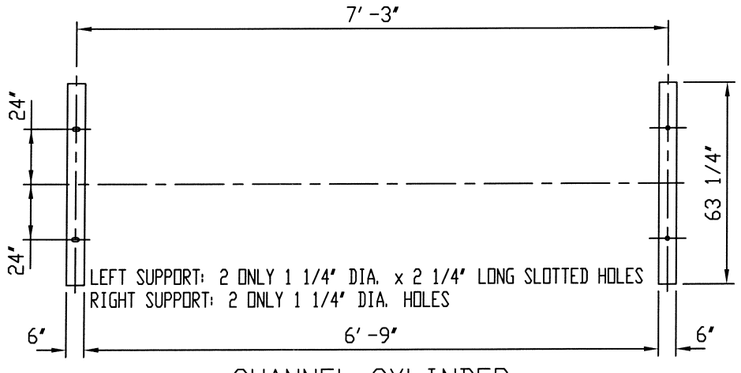


701 GASKET DETAIL
QUANTITY = 3
SCALE: 1/4"=1'-0"

MATERIAL:
1/8" THK SOLID P.T.F.E.



HEAT EXCHANGER
ANCHOR BOLT SETTING PLAN SS
SCALE: 1/4"=1'-0"



CHANNEL CYLINDER
ANCHOR BOLT SETTING PLAN SS
SCALE: 1/4"=1'-0"

HEAT TRANSFER SYSTEMS, INC
DESIGNER & MANUFACTURER
ST. LOUIS, MO 63111-3655

12928-7.HEX

SUPPORTS & GASKET DETAILS

NO.	DATE	DESCRIPTION	BY	CHK

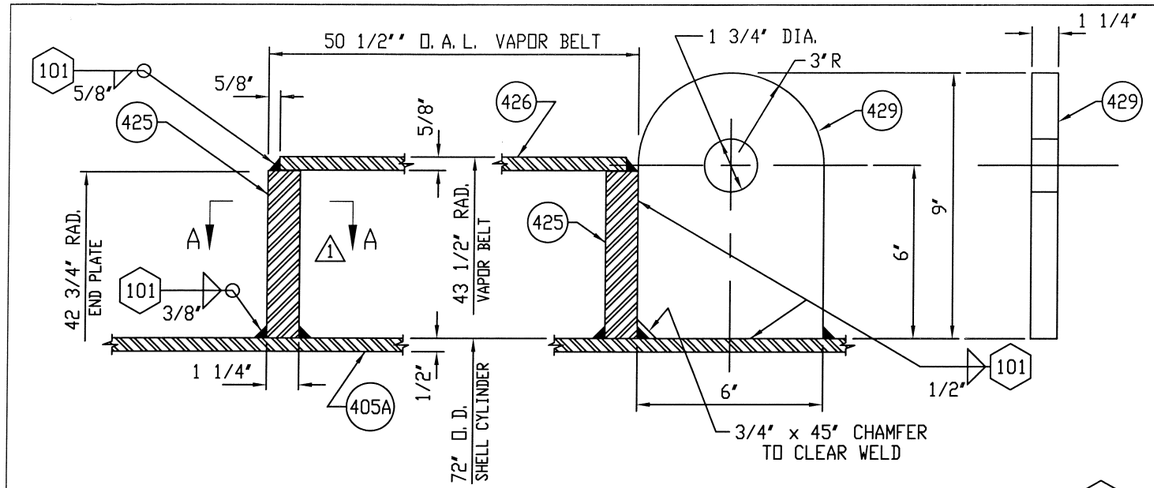
REVISIONS

DR. BY D. L. L.
DATE 4-16-07
CHK. BY

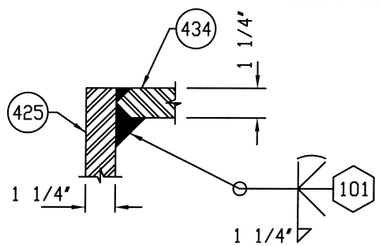
HTS 12928-7, 8.

DWG. NO. B-2928-7-10

REV 0

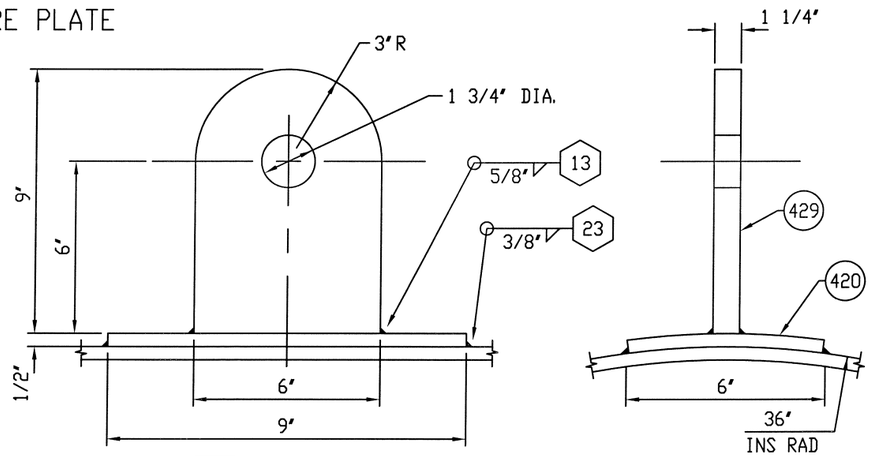


VAPOR BELT/END PLATE/VESSEL LIFT LUGS (AT 0°)
WELDING DETAILS

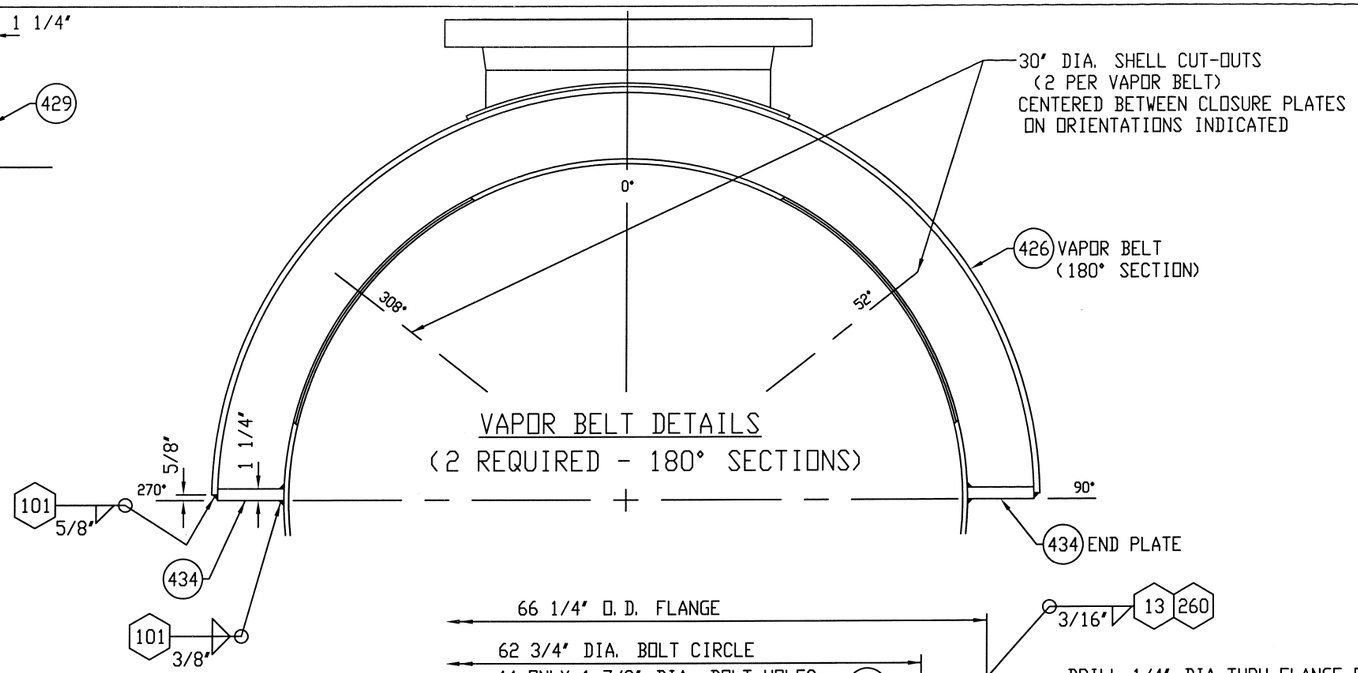


1 SECTION 'A-A'

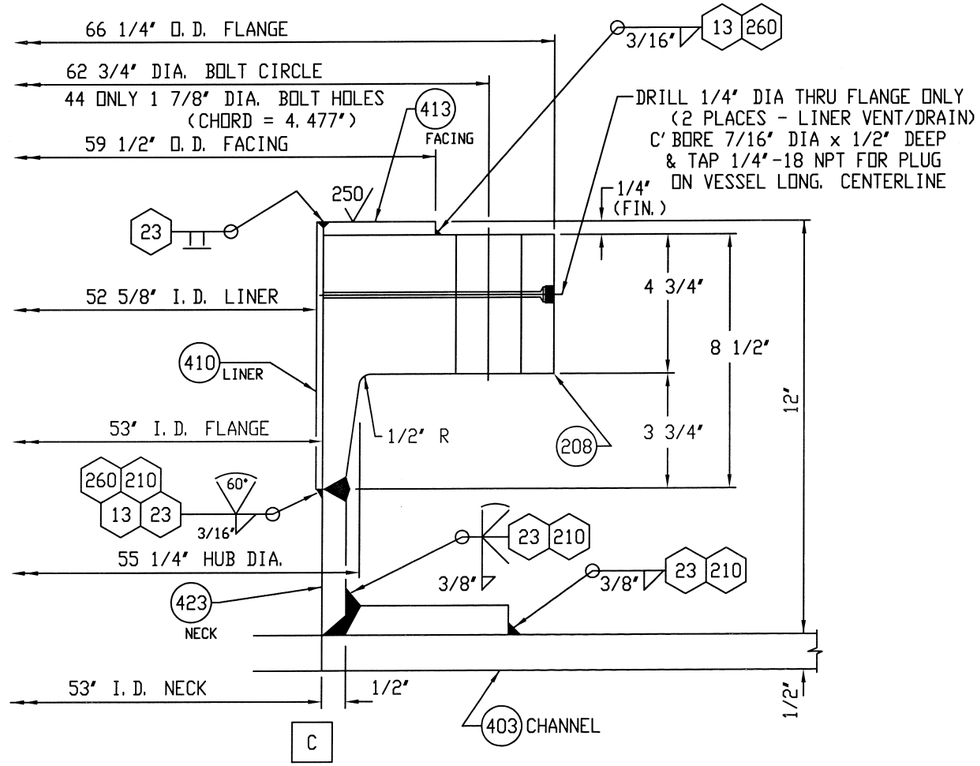
VAPOR BELT END PLATE/CLOSURE PLATE
CORNER JOINT
WELDING DETAILS



LL LIFTING LUG DETAIL (ON REMOVABLE CHANNEL)
1 REQUIRED
LIFTING LUGS SIZED FOR 1 1/2" NOM SHACKLES
RATED CAPACITY 60,000 LBS. (EACH)

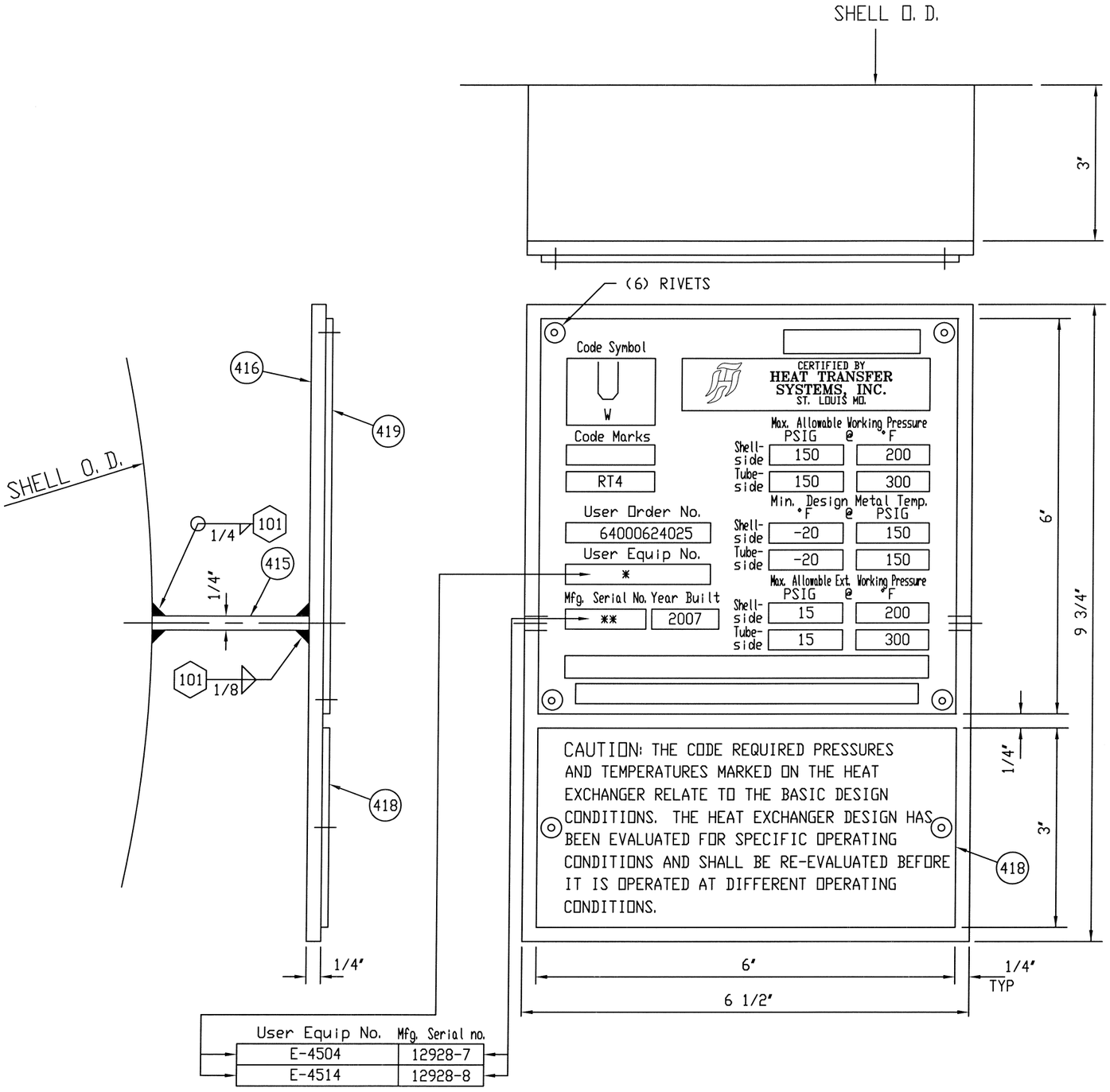


VAPOR BELT DETAILS
(2 REQUIRED - 180° SECTIONS)



LINED LAP JOINT NOZZLE - SET-ON CONSTRUCTION
54" CLASS 150 SERIES A FLANGE (H.T.S. TO FABRICATE PER ASME B16.47 - 1990)

HEAT TRANSFER SYSTEMS, INC DESIGNER & MANUFACTURER ST. LOUIS, MO 63111-3655 12928-7.HEX	LINED 54" NOZ. C, VAPOR BELT & LIFTING LUG DETAILS					
					DR. BY D.L.L.	HTS 12928-7, 8.
1	8-1	ADDED CORNER JOINT DETAIL BY H.T.S.	D.L.L.	D.L.L.	DATE 4-16-07	DWG. NO. B-2928-7-11
NO.	DATE	DESCRIPTION	BY	CHK	CHK. BY D.L.L.	REV 1
		REVISIONS				



HEAT TRANSFER SYSTEMS, INC DESIGNER & MANUFACTURER ST. LOUIS, MO 63111-3655	HORIZONTAL NAME PLATE WITH CODE CAUTION PLATE

NO.	DATE	DESCRIPTION	BY	CHK

REVISIONS

DR. BY	D. L. L.
DATE	4-16-07
CHK. BY	
HTS	12928-7, 8.
DWG. NO.	B-2928-7-12
REV	0

DR. BY D. L. L.
DATE 4-16-07
CHK. BY

	DATE	BY
REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
TUBE	101	SA-249-TP304	1 1/4" O. D. x 18BWG (0. 049) AVG TUBE x 18'-0" LG	1785	3570					
# o										

- ADVANCED REQUISITIONED
* - MATERIAL CERTIFICATION REQ'D
o - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.
DATE 4-16-07
CHK. BY

	DATE	BY
REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
B, A	201	SA-105N	5 3/8" THK x 38 3/4" O. D. x 29" I. D. (FIN. DIM.)	2	4					
o										
J, K	202	SA-182-F304L	2" 150# ANSI B16. 5 RF SO FLANGE	2	4					
*										
H	203	SA-182-F304L	3" 150# ANSI B16. 5 RF SO FLANGE	1	2					
*										
G	204	SA-182-F304L	4" 150# ANSI B16. 5 RF SO FLANGE	1	2					
*										
F2, F1	205	SA-182-F304L	1/2" 3000# HALF THRD CPLG	2	4					
*										
F1, F2	206	SA-182-F304L	1/2" DIA MPT HEX HD PLUG	2	4					
D, E	207	SA-105	6" 150# ANSI B16. 5 RF SO FLANGE	2	4					
*										
C	208	SA-105N	8 1/2" THK x 66 1/4" O. D. x 53" I. D. (FIN. DIM.)	1	2					
o										
FLANGE	209	SA-105N	7" THK x 77 7/8" O. D. x 72 1/8" I. D. (FIN. DIM)	3	6					
o										

- ADVANCED REQUISITIONED
* - MATERIAL CERTIFICATION REQ'D
o - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07			
CHK. BY D. L. L.		DATE	BY
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

SHEET 3 OF 10

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
J, K	301	SA-312-TP304L WLD	2" STD (0.154) PIPE x 7" LG	2	4					
O										
H	302	SA-312-TP304L WLD	3" STD (0.216) PIPE x 10 3/8" LG	1	2					
O										
G	303	SA-312-304/304L WLD	4" STD (0.237) PIPE x 7" LG	1	2					
O		DUAL CERT.								
E, D	304	SA-312-304/304L WLD	6" STD (0.28) PIPE x 7" LG	2	4					
O		DUAL CERT.								

- ADVANCED REQUISITIONED
* - MATERIAL CERTIFICATION REQ'D
O - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.	2	8-1-2007	D. L. L.
DATE 4-16-07	1	6-18-2007	D. L. L.
CHK. BY D. L. L.		DATE	BY
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

SHEET 4 OF 10

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
CHANNEL	401	SA-240-304	3/8" THK x 18'-9" x 2'-2 5/8" LG, ROLL 72" O.D. x 2'-2 5/8" LG	1	2					
O										
CHANNEL	402	SA-240-304	1/2" THK x 18'-8 5/8" x 2'-4 13/16" LG, ROLL 72" O.D. x 2'-4 13/16" LG	1	2					
1 O										
CHANNEL	403	SA-240-304	1/2" THK x 18'-8 5/8" x 8'-0" LG, ROLL 72" O.D. x 8'-0" LG	1	2					
1 O										
SHELL	404	SA-516-70	1/2" THK x 18'-8 5/8" x 19 1/8" LG, ROLL 72" O.D. x 19 1/8" LG	1	2					
O										
SHELL	405A	SA-516-70	1/2" THK x 18'-8 5/8" x 8'-0" LG, ROLL 72" O.D. x 8'-0" LG	2	4					
O	405B									
BAFFLE	406	SA-36	1/2" THK x 70 11/16" O.D. (FIN. DIM)	7	14					
O										
BAFFLE	407	SA-36	1/2" THK x 70 11/16" O.D. (FIN. DIM)	6	12					
O										
TUBESHEET	408	SA-240-304/304L	2 1/2" THK x 77 7/8" O.D. (FIN. DIM)	1	2					
O		DUAL CERT.								
TUBESHEET	409	SA-240-304/304L	2 1/2" THK x 77 7/8" O.D. (FIN. DIM)	1	2					
O		DUAL CERT.								
C LINER	410	SA-240-304L	3/16" THK x 13'-9 7/8" x 8 5/8" LG, ROLL 53" O.D. x 8 5/8" LG	1	2					
O										
E, D REPAD	411	SA-240-304	1/4" THK x 10 3/4" x 10 5/8" LG, ROLL 36" INS. RAD. x 10 5/8" LG	2	4					
O										
C REPAD	412	SA-240-304	1/2" THK x 68" x 61" LG, ROLL 36" INS. RAD. x 61" LG	1	2					
O										
C FACE	413	SA-240-304L	3/8" THK x 59 1/2" O.D. x 53" I.D. (FIN. DIM.)	1	2					
O										
CVR FACE	414	SA-240-304L	3/8" THK x 73 3/4" O.D.	1	2					
2 O										

- ADVANCED REQUISITIONED
* - MATERIAL CERTIFICATION REQ'D
O - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07			
CHK. BY	DATE	BY	
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

SHEET 5 OF 10

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
NAME PLATE	415	SA-36	1/4" THK x 3" x 6 1/2" LG	1	2					
NAME PLATE	416	SA-36	1/4" THK x 6 1/2" x 9 3/4" LG	1	2					
B, A REPAD	417	SA-516-70	1/2" THK x 35" x 34" LG, ROLL 43 1/2" INS. RAD. x 34" LG	2	4					
O										
CAUTION PLATE	418	S/S	HTS STANDARD CODE CAUTION PLATE	1	2					
NAME PLATE	419	S/S	HTS STANDARD NAMEPLATE	1	2					
LUGS	420	SA-240-304	1/2" THK x 6" x 9" LG, ROLL 36" INS. RAD. x 9" LG	1	2					
O										
SADL SUPP BASE	421	SA-516-70	3/4" THK x 6" x 63 1/4" LG	4	8					
SADL SUPP VERT	422	SA-516-70	1/2" THK x 63 1/4" WD x 41" LG	4	8					
C NECK	423	SA-240-304/304L	1/2" THK x 14'-0 1/16" x 16" LG, ROLL 54" O.D. x 16" LG	1	2					
O		DUAL CERT.								
A, B NECK	424	SA-516-70	1/2" THK x 7'-8 11/16" x 6" LG, ROLL 30" O.D. x 6" LG	2	4					
O										
CLOSURE PL	425	SA-516-70	1 1/4" THK x 85 1/2" O.D. x 72 1/8" I.D.	2	4					
O			(1 RING CUTS TWO HALF-CIRCLE CLOSURE PLATES)							
VPR BELT	426	SA-516-70	5/8" THK x 11'-2 11/16" x 4'-1 1/4" LG,	2	4					
O			ROLL 42 7/8" INS RAD x 4'-1 1/4" LG							
			(VAPOR BELT SECTION - 180° HALF-CYLINDER)							
COVER	427	SA-516-70N	4" THK x 77 7/8" O.D. (FIN. DIM)	1	2					
O										
HEAD	428	SA-240-304	5/16" MIN, 3/8" NOM x 72" OD ASME 2:1 S.E. HD, 1 1/2" SF, OAH = 19 11/16"	1	2					
O										

- ADVANCED REQUISITIONED
* - MATERIAL CERTIFICATION REQ'D
O - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07			
CHK. BY	DATE	BY	
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

SHEET 6 OF 10

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
LUGS	429	SA-516-70	1 1/4" THK x 6" x 9" LG	3	6					
O										
S/S SADL PAD	430	SA-240-304	1/2" THK x 8" WD x 78" LG, ROLL 36" INS RAD x 8" LG	2	4					
O										
C/S SADL PAD	431	SA-516-70	1/2" THK x 8" WD x 78" LG, ROLL 36" INS RAD x 8" LG	2	4					
O										
SADL GUSSET	432	SA-516-70	1/2" THK x 5 1/2" x 22 3/4" LG	4	8					
SADL GUSSET	433	SA-516-70	1/2" THK x 5 1/2" x 41" LG	8	16					
END PL	434	SA-516-70	1 1/4" THK x 6 11/16" x 48" LG	4	8					
O										

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* - MATERIAL CERTIFICATION REQ'D
O - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07			
CHK. BY		DATE	BY
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
STUD	501	SA-193-B7	1" x 12 1/2" LG 8NC STUD	120	240					
*										
STUD	502	SA-193-B7	1" x 14 1/4" LG 8NC STUD	60	120					
*										
NUT	503	SA-194-2H	1" 8NC HVY HEX NUT	360	720					
*										

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* - MATERIAL CERTIFICATION REQ'D
O - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07			
CHK. BY		DATE	BY
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
TIE ROD	601	SA-36	5/8" DIA RD. BAR x 14'-5" LG	6	12					
TIE ROD	602	SA-36	5/8" DIA RD. BAR x 15'-6" LG	4	8					
SLIDE BAR	603	SA-36	1/2" x 3" FLAT BAR x 15'-6" LG	2	4					

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HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07			
CHK. BY		DATE	BY
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

SHEET 9 OF 10

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
GASKET	701	P. T. F. E.	1/8" THK x 74 1/8" O. D. x 72 1/8" I. D ○	3	6					

- ADVANCED REQUISITIONED
✱ - MATERIAL CERTIFICATION REQ'D
○ - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC

DR. BY D. L. L.			
DATE 4-16-07	1	6-11-2007	D. L. L.
CHK. BY		DATE	BY
	REVISIONS		

BILL OF MATERIALS

SIZE: 71 - 216 TYPE: AEM CUSTOMER: DELTA T CORP.
TWO UNITS REQUIRED P. O. NO.: 64000624025

HTS 12928-7, 8.

SHEET 10 OF 10

PART NAME	NO.	MATERIAL	DESCRIPTION	QUANTITY EA.	QUANTITY TOT.	VENDOR	P. O. NO.	PROMISED	REC'D	HEAT NUMBER / ACTUAL COST
PAINT	901	---	450 SQ. FT./Unit (900 SQ. FT. TOTAL) EXTERNAL CARBON STEEL	1	2					
PREP			COMMERCIAL BLAST CLEAN, EXTERNAL CARBON STEEL							
1			PER SSPC-SP6 (ANCHOR PROFILE 1 1/2 TO 3 MILS)							
PAINT			PRIME WITH ONE (1) COAT CARBOLINE CARBOGARD 890							
1			COLOR: 0780 NEUTRAL GRAY (4 TO 6 MILS DFT)							
			FINISH COAT WITH (1) COAT CARBOLINE CARBOTHANE 134 HG							
			POLYURETHANE, COLOR: C705 GRAY (2 TO 2 1/2 MILS DFT)							

- ADVANCED REQUISITIONED
✱ - MATERIAL CERTIFICATION REQ'D
○ - MILL TEST REQ'D

HEAT TRANSFER SYSTEMS, INC