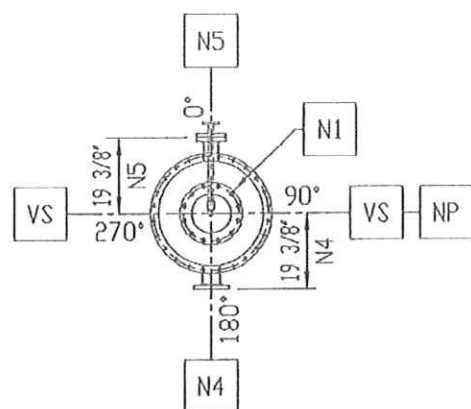
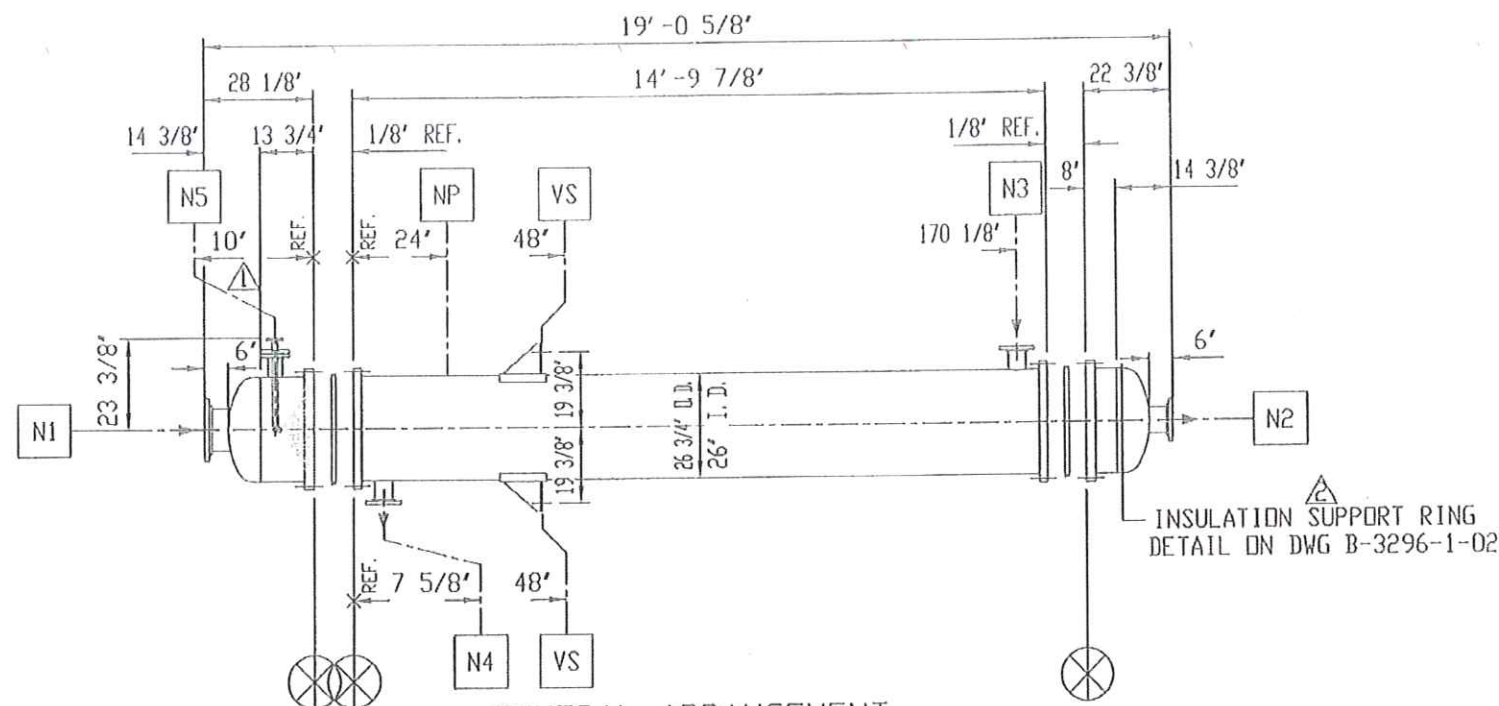


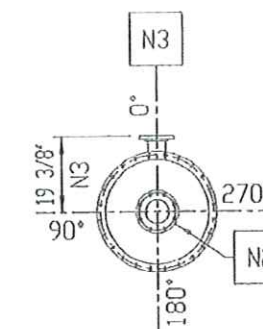
106907



ORIENTATION
VIEWED FROM TOP

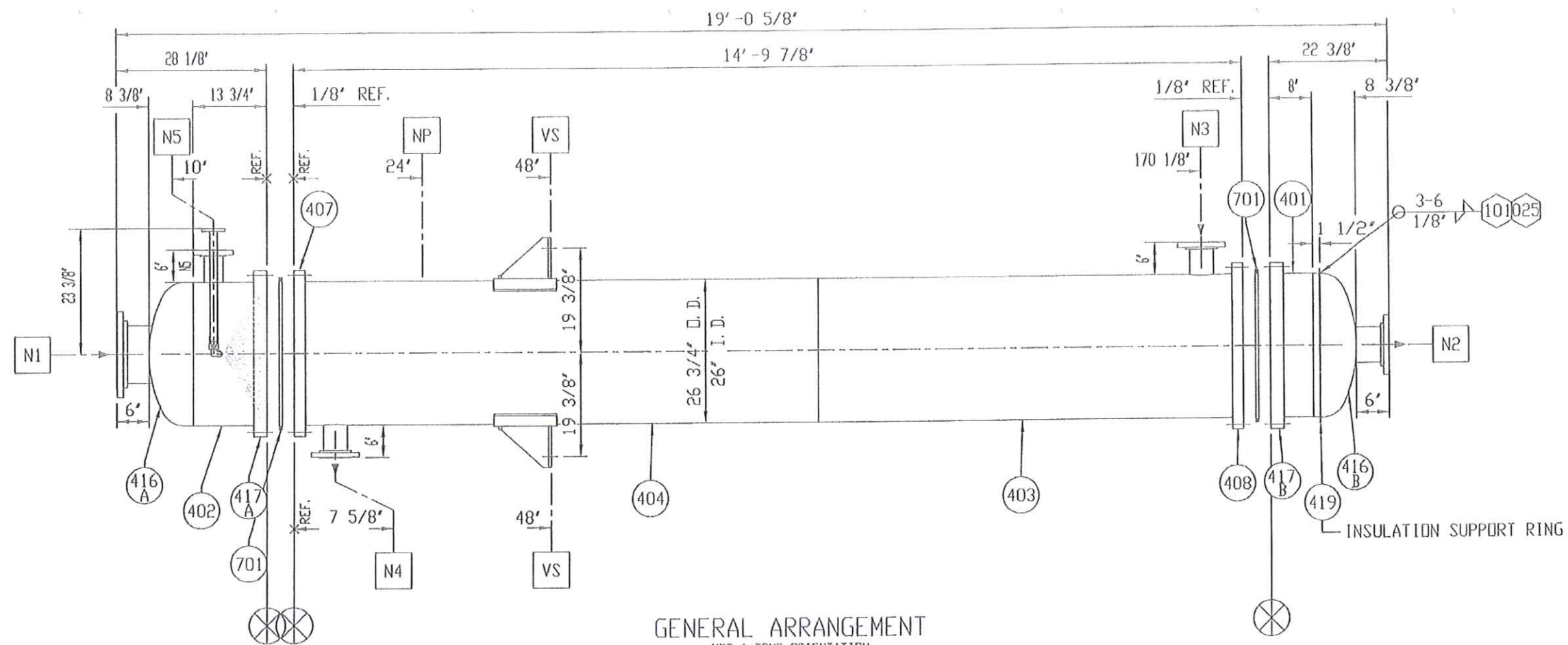


GENERAL ARRANGEMENT
NOT A TRUE ORIENTATION



ORIENTATION
VIEWED FROM BOTTOM

CONNECTION SCHEDULE					GENERAL NOTES			DESIGN DATA		SHELL SIDE		TUBE SIDE		CUSTOMER: THERMAL TRANSFER SYSTEM	
MARK	SIZE	RATING	TYPE	SERVICE	1) ALL BOLT HOLES TO STRADDLE NATURAL CENTERLINES. 2) ALL NOZZLES TO HAVE PROTECTIVE COVERS FOR SHIPMENT. 3) PT TEST ALL PRESSURE RETAINING WELDS.			DESIGN PRESSURE - INTERNAL	70 PSI	47 PSI		ONE UNITS REQUIRED TAG: H. T. S. NO. : 13296-1 ITEM NO : E-201 PO NO. : 7056			
N1	10'	150	RFSO	TUBESIDE - INLET				DESIGN PRESSURE - EXTERNAL	----	FV					
N2	6'	150	RFSO	TUBESIDE - OUTLET				DESIGN TEMPERATURE	140°F	400°F					
N3	4'	150	RFSO	SHELLSIDE - INLET				HYDRO TEST PRESSURE	91 PSI	62 PSI					
N4	4'	150	RFSO	SHELLSIDE - OUTLET				CORROSION ALLOWANCE	0.125'	0.125'					
N5	3' / 1'	150	RFSO	SPRAY NOZZLE W/ 1' SPRAY NOZZLE				RADIOGRAPH	NONE	NONE		DIMENSIONAL OUTLINE DRYER OUTLET HEAT EXCHANGER			
SURFACE PREP 1) HAND TOOL CLEAN, EXTERNAL CARBON STEEL (SSPC-SP 2) PAINT SPEC 1) PRIME WITH ONE COAT OF FERREL-CALHOUN TUFFBOY QUICK DRY LOW VOC RUST-STOP PRIMER, COLOR RED 23-2260 (1 MIL DFT)					MATERIALS:	SHELL SIDE TUBE SIDE		STRESS RELIEF	NONE	NONE					
					TUBES (294) 1' O. D. x 16BWG (0.065) AVG , SA-249-TP304			NO. OF PASSES	1	1					
					TUBESHEET	SA-516-70N	SA-516-70N	MIN. DESIGN METAL TEMP	-20°F @ 70 PSI	-20°F @ 47 PSI					
					SHELL	SA-516-70	SA-516-70	TUBE SURFACE (EXTERNAL) 1142 SQ. FT.							
					BODY FLANGE	----	SA-516-70N	APPROX. WEIGHT EACH	EMPTY	FULL WATER	BUNDLE				
					HEAD	----	SA-516-70		6355 LBS.	10155 LBS.	3987 LBS.				
					NOZZLE NECK	SA-106-B SMLS	SA-106-B SMLS	DESIGN & CONSTRUCTION IN ACCORDANCE WITH: ASME SECTION VIII, DIV. 1 STAMPED 2010 ED 'A' 11 'U' C T. E. M. A. CLASS							
					NOZZLE FLANGE	SA-105	SA-105		06-03	ADDED TEST NOTE	TSP	TSP			
					BOLTING	SA-193-B7/SA-194-2H	SA-193-B7/SA-194-2H		02-07	REVISED PER CUSTOMER RETURN	TSP	TSP			
					GASKETS	----	COMP. NON ASB.		01-10	REVISED SPRAY NOZZLE DIMENSION	TSP	TSP			
					NO.	DATE	DESCRIPTION	BY	CHK	DR. TSP HTS 13296-1		REV			
					REVISIONS							DATE 12-18-12	DWG. NO.	REV	
												CHK. BY TSP	B-3296-1-01		



GENERAL ARRANGEMENT
NOT A TRUE ORIENTATION

401	3/8'	RIGHT CHANNEL CYLINDER	416 (A, B)	3/8'	HEAD
404, 403	3/8'	SHELL CYLINDER	402	3/8'	LEFT CHANNEL CYLINDER
PART	THK.	DESCRIPTION	PART	THK.	DESCRIPTION

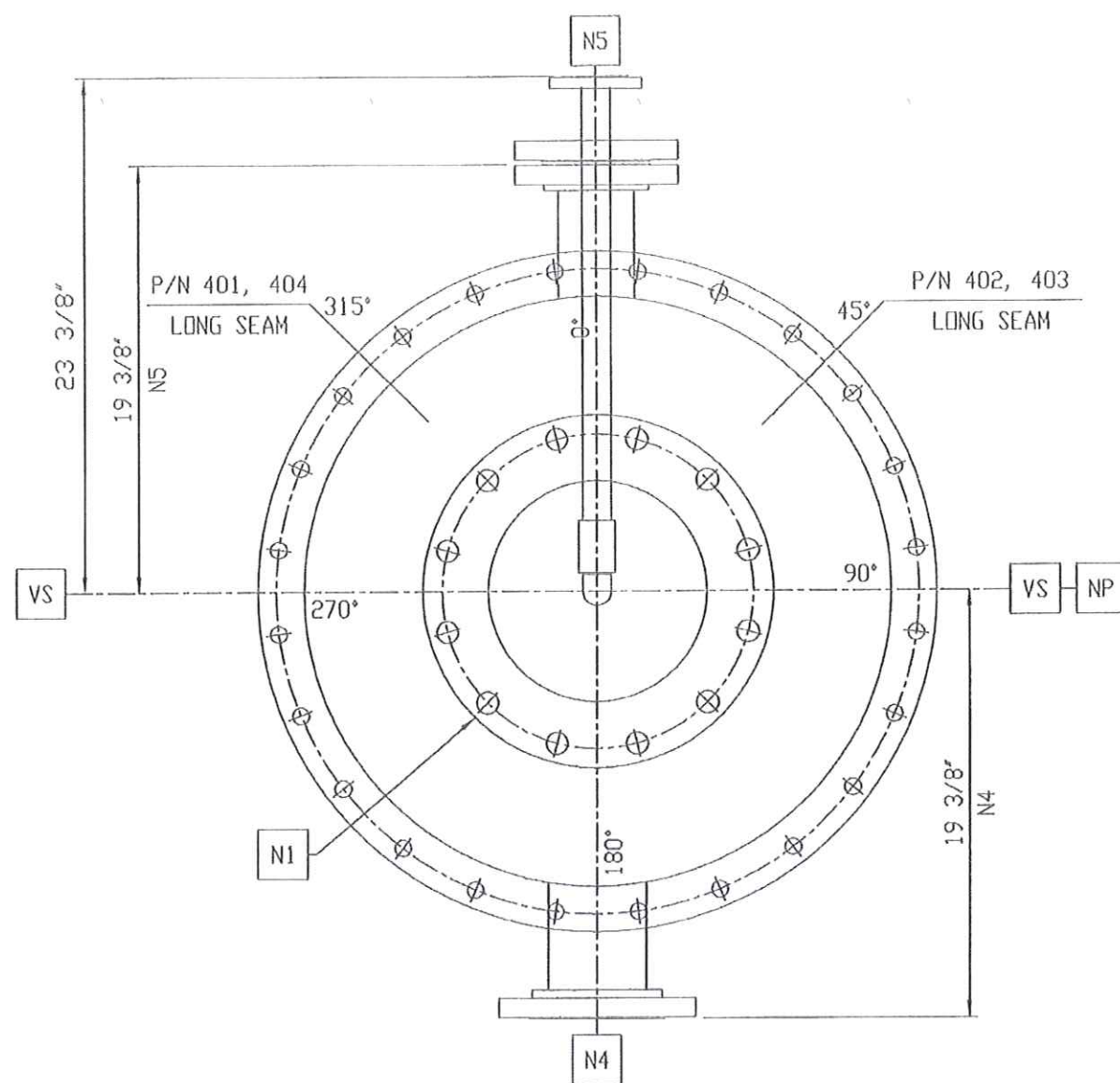
SEE DRAWING B-3296-1-03 FOR TRUE ORIENTATIONS

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

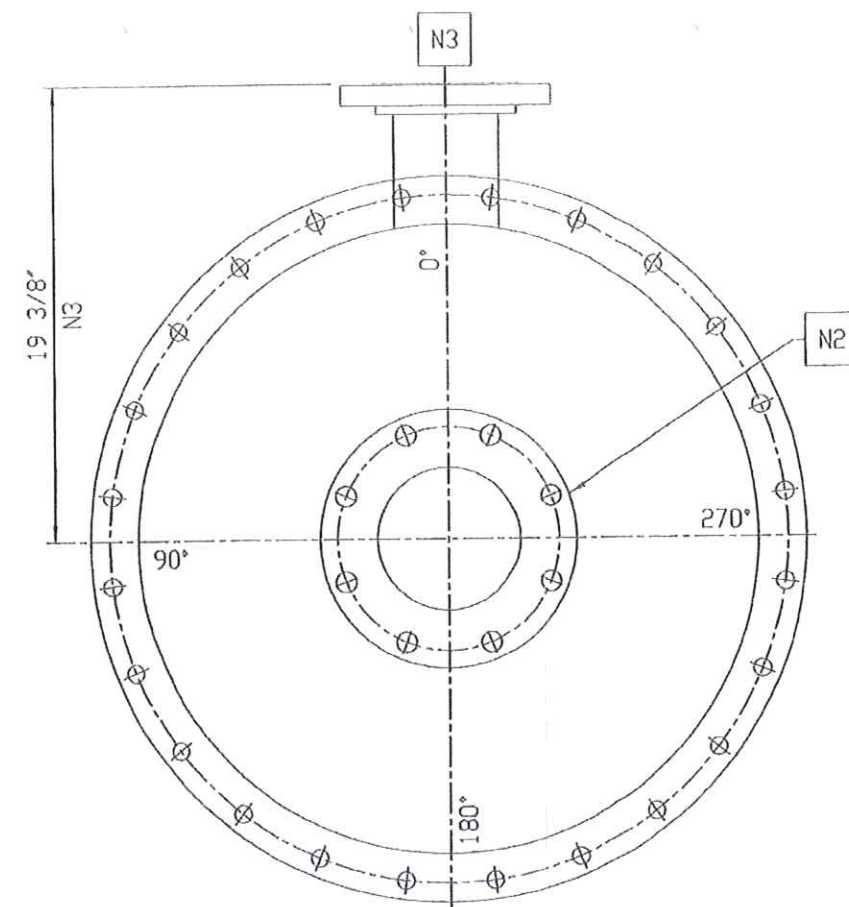
C: 13296-1. HEX

SHELL & CHANNEL DETAILS

NO.	DATE	DESCRIPTION	BY	CHK	DR. BY	TSP	DATE	HTS 13296-1	REV
1	02-07	REVISED PER CUSTOMER'S RETURN	TSP	TSP	TSP	TSP	12-18-12	DWG. NO.	1
REVISIONS					CHK. BY		TSP	B-3296-1-02	1



ORIENTATION
VIEWED FROM TOP



ORIENTATION
VIEWED FROM BOTTOM

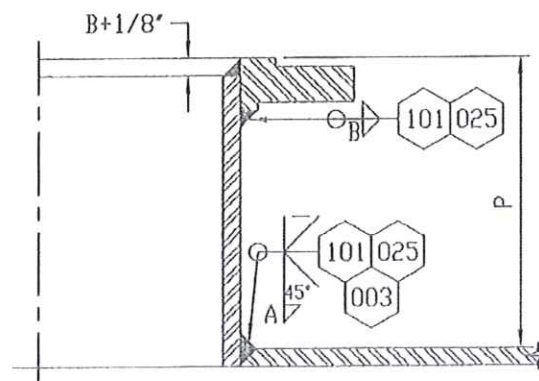


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Cr 13296-1. HEX

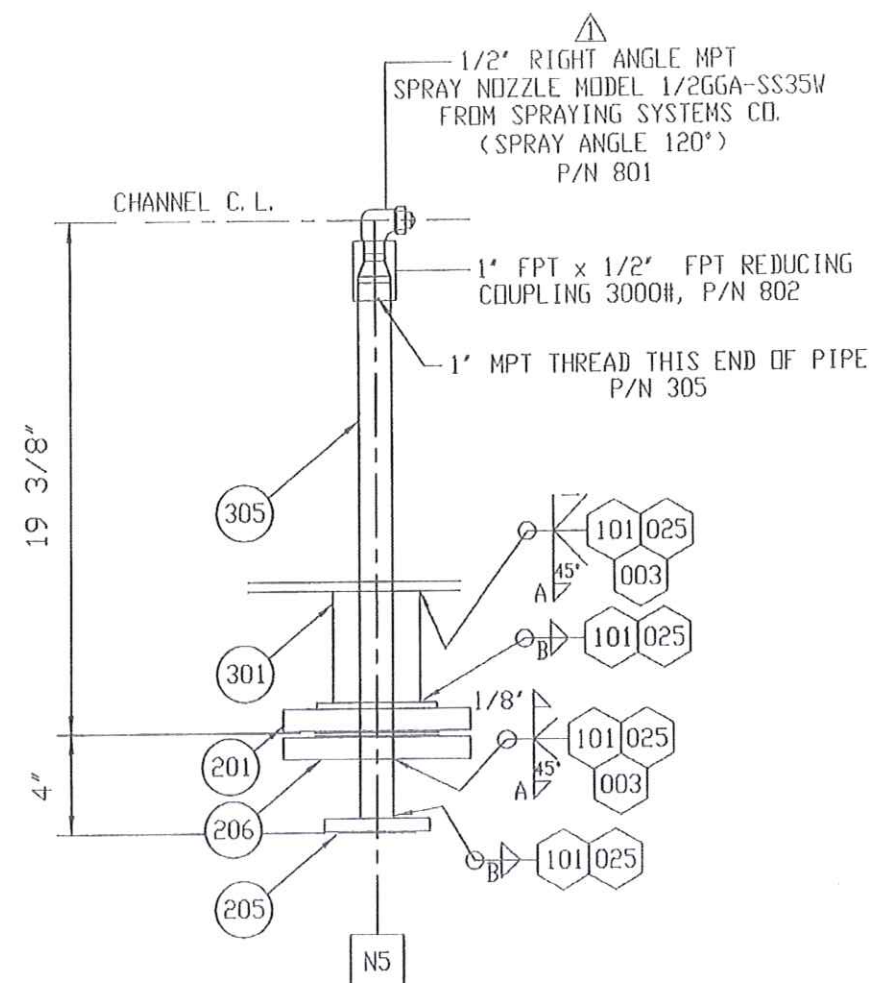
TRUE ORIENTATIONS

					DR. BY	TSP	HTS 13296-1	
					DATE	12-18-12	DWG. NO.	REV
NO.	DATE	DESCRIPTION	BY	CHK	CHK. BY	TSP	B-3296-1-03	
REVISIONS								

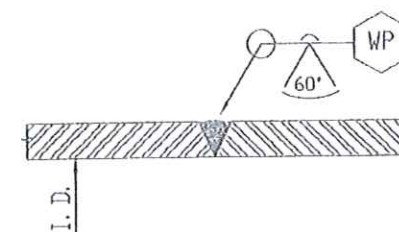


N1 N2 N3 N4

SLIP-ON NOZZLE



SLIP-ON NOZZLE



N5	1	3' / 1'	150	RFSD	201	3 1/2'	PER DET.	PER DET.	---	---	---	---	---	206	702	503	504	1/8'	1/4'	---	3" NOZZLE W/ BLIND AND 1" SPRAY NOZZLE	---
N4	1	4'	150	RFSD	202	4 1/2'	6'	302	---	---	---	---	---	---	---	---	---	1/8'	1/4'	---	SHELLSIDE - OUTLET	---
N3	1	4'	150	RFSD	202	4 1/2'	6'	302	---	---	---	---	---	---	---	---	---	1/8'	1/4'	---	SHELLSIDE - INLET	---
N2	1	6'	150	RFSD	203	6 5/8'	6'	303	---	---	---	---	---	---	---	---	---	3/16'	5/16'	---	TUBESIDE - OUTLET	---
N1	1	10'	150	RFSD	204	10 3/4'	6'	304	---	---	---	---	---	---	---	---	---	3/16'	3/8'	---	TUBESIDE - INLET	---
MK	QTY	SIZE	RATING	TYPE	PART	OD	PROJ.	PART	MIN. THK.	PART	WIDTH	THK	PART	PART	PART	PART	PART	A	B	C	SERVICE	REMARKS
					CONNECTION		NECK		LAP RING		REPAD		BLIND		GASKET	STUD	NUT	WELD SIZE				

NOZZLE SCHEDULE

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

WELD	WELD PROCEDURE (WP)	
	SHELL SIDE	TUBE SIDE
LONG.	101, 025, 003	101, 025, 003
CIRC.	101, 025, 003	101, 025, 003

LONG. AND CIRC. SEAMS



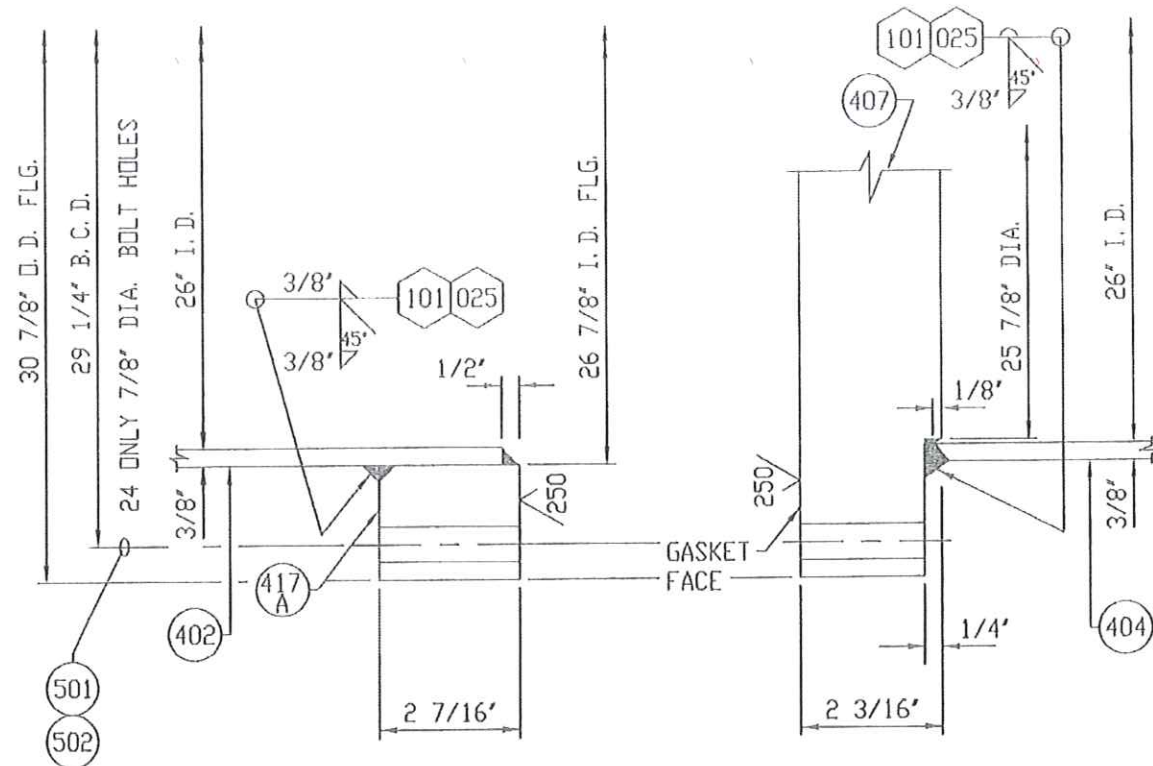
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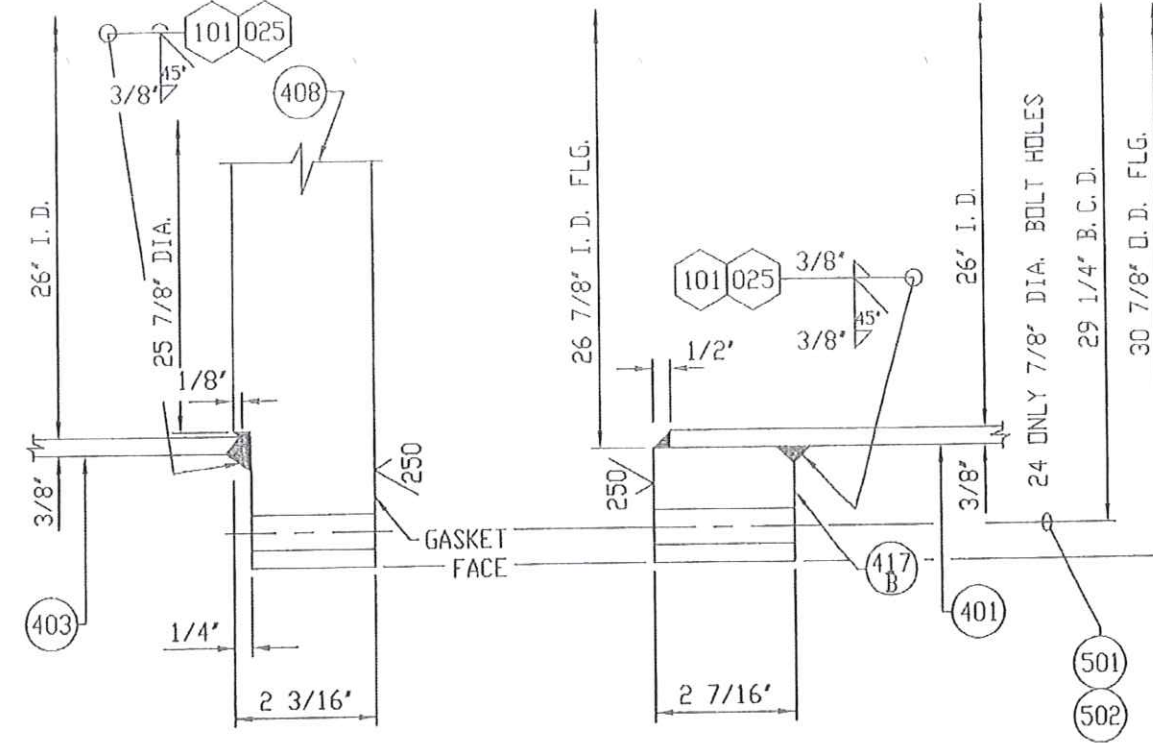
NOZZLE & WELDING DETAILS

NO.	DATE	DESCRIPTION	BY	CHK	DR. BY	TSP	DATE	HTS 13296-1	REV
02-07		REVISED PER CUSTOMER'S RETURN	TSP	TSP			12-18-12	DWG. NO.	
								B-3296-1-04	

REVISIONS



LEFT TUBESHEET CONNECTION DETAIL



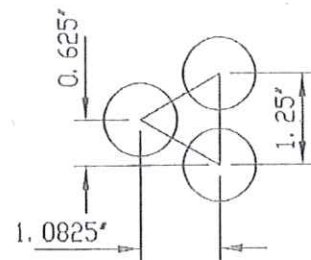
RIGHT TUBESHEET CONNECTION DETAIL

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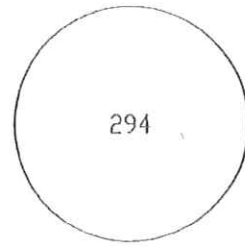
© 13296-1. HEX

MACHINING DETAILS

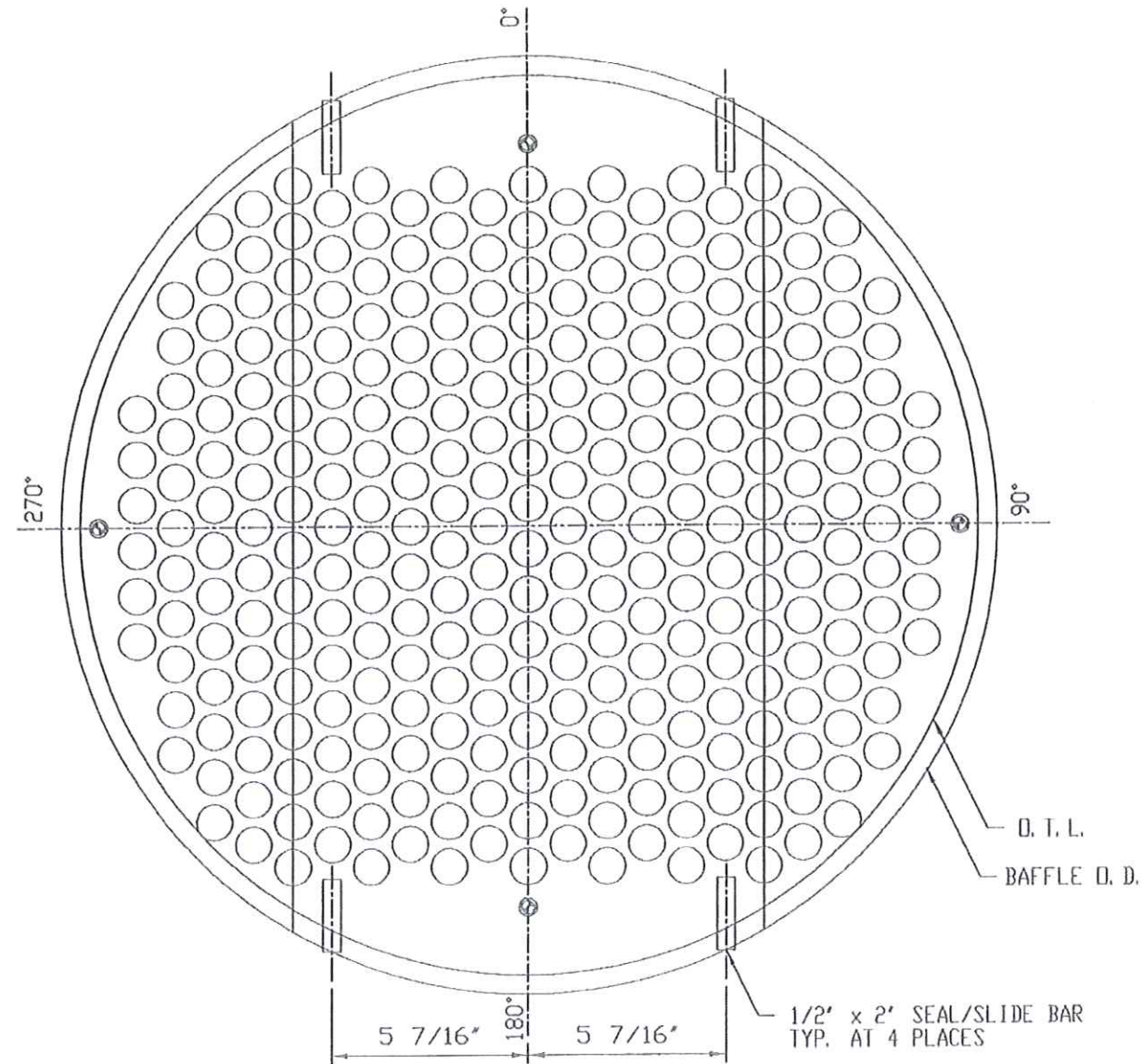
					DR. BY	TSP	HTS 13296-1	
					DATE	12-18-12	DWG. NO.	REV
NO.	DATE	DESCRIPTION			BY	CHK	B-3296-1-05	
REVISIONS								



TUBE PATTERN



TUBES PER PASS



TUBE FIELD LAYOUT
VIEW FROM LEFT SIDE OF TUBESHEET
SCALE: 2 1/2" = 1' - 0"

LAYOUT DATA

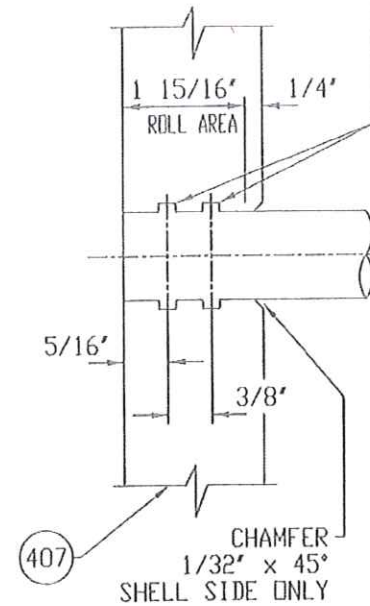
TUBE HOLES
Quantity: 294
Tube Dia.: 1"
Hole Dia.: 1.012" +0.002", -0.004"
Pattern: TRI.
Pitch: 1.25"
Passes: 1

TIER RODS
Quantity: 4
Diameter: 0.5"
SEAL / SLIDE BAR
Quantity: 4
SIZE: 0.5" x 2"

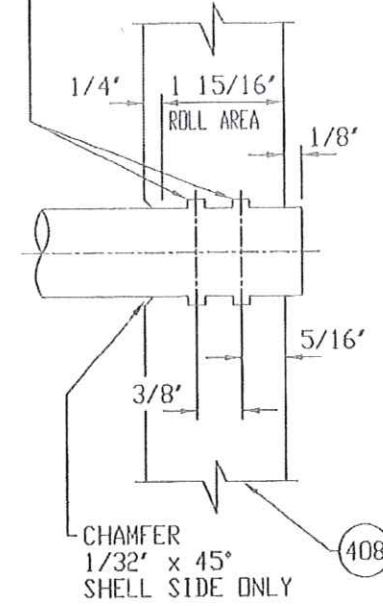
LAYOUT
Baf O. D.: 25.8125"
Max O.T.L.: 24.75"

BAFFLES
Type: SGL. SEG.
Rotation: VERT.
Cut: 25%
Tube Hole: 1.0312"
Tie Rod Hole: 0.5625"

MACHINE GROOVES
1/8" WD. x 1/64" DP.



MACHINE GROOVES
1/8" WD. x 1/64" DP.

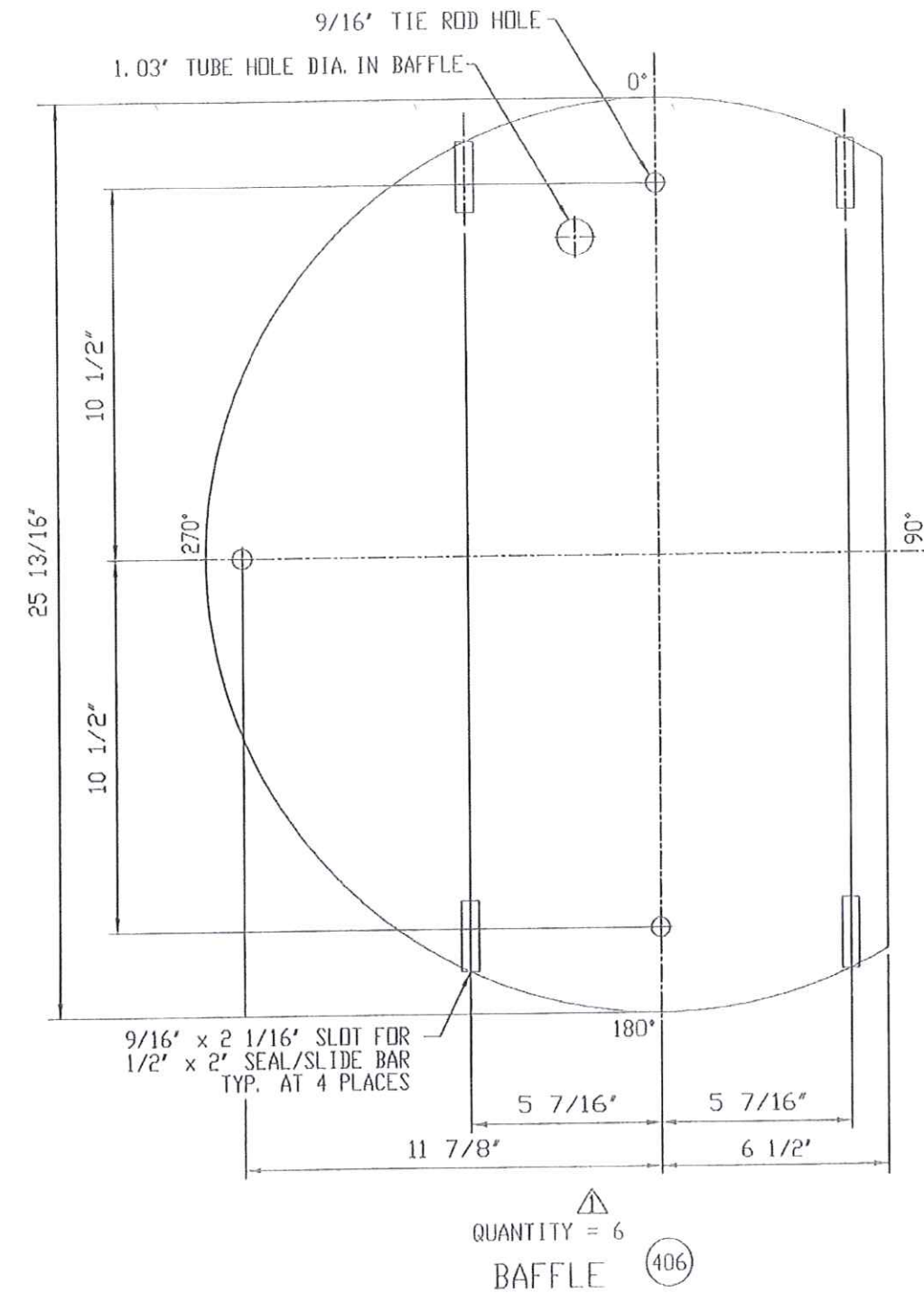
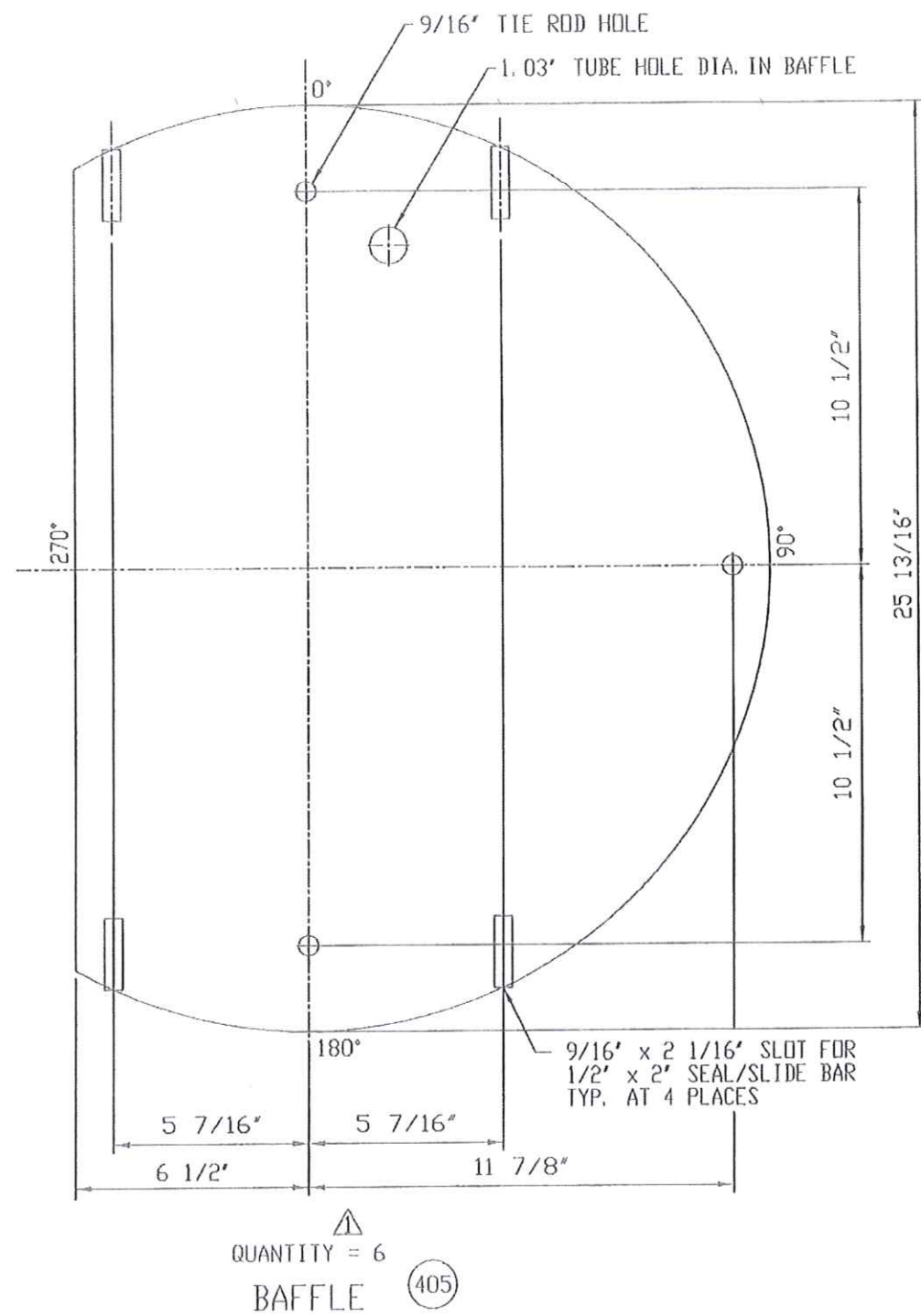


TUBESHEET TUBE HOLE DETAIL

					DR. BY	TSP	HTS 13296-1	
					DATE	12-18-12	DWG. NO.	REV
NO.	DATE	DESCRIPTION	BY	CHK	CHK. BY	TSP	B-3296-1-06	
REVISIONS								

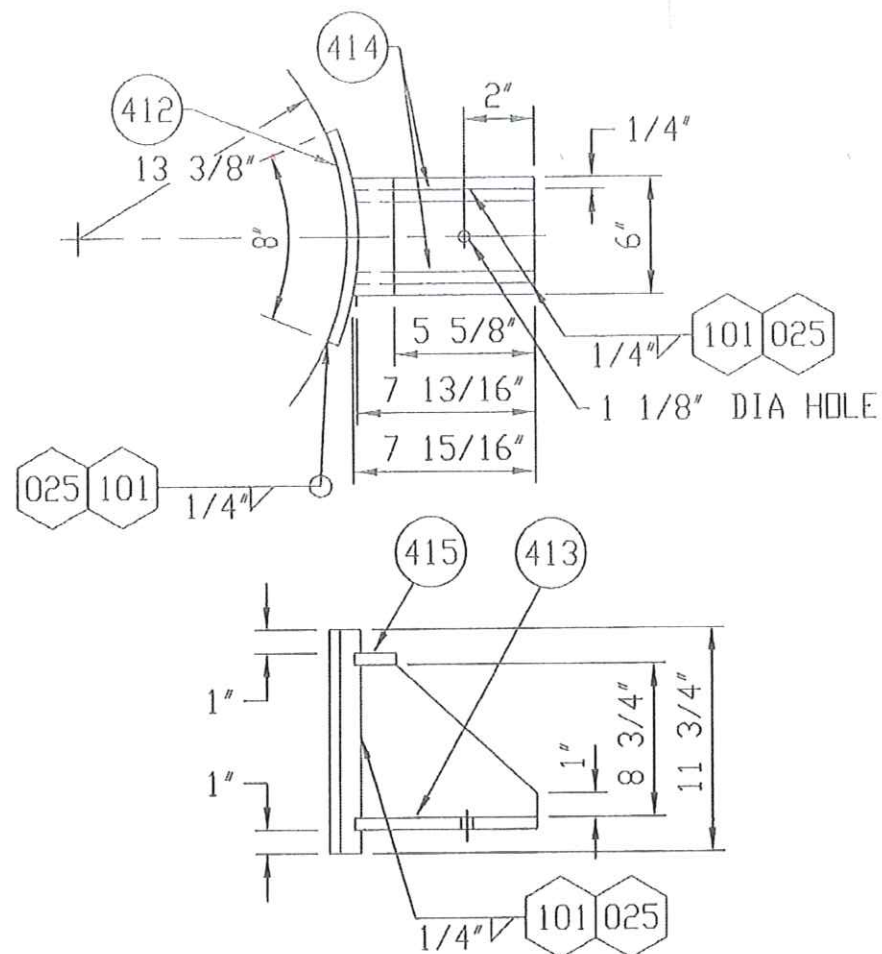


					DR. BY TSP	HTS 13296-1	
△	02-07	REVISED PER CUSTOMER'S RETURN	TSP	TSP	DATE 12-18-12	DWG. NO.	REV
NO.	DATE	DESCRIPTION	BY	CHK	CHK. BY TSP	B-3296-1-07	△
REVISIONS							



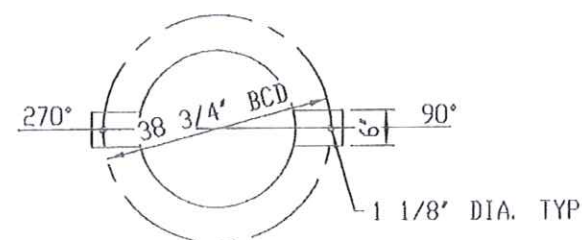
BAFFLE DETAIL

		DR. BY	TSP	HTS 13296-1	
NO.	DATE	DESCRIPTION	BY	CHK	DATE
1	02-07	REVISED PER CUSTOMER'S RETURN	TSP	TSP	12-18-12
REVISIONS					DATE
					CHK. BY TSP
					DWG. NO. B-3296-1-08
					REV 1



QUANTITY = 2

VERTICAL SUPPORT DETAIL



ANCHOR BOLT SETTING PLAN
VIEW FROM TOP

VS

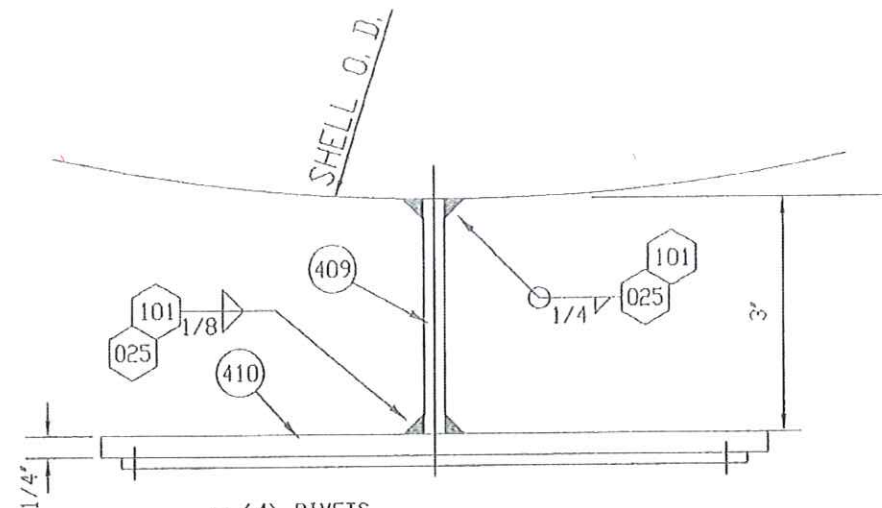


HEAT TRANSFER SYSTEMS, INC
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CI 13296-1. HEX

SUPPORTS DETAILS

				DR. BY	TSP	HTS 13296-1		
				DATE	12-18-12	DWG. NO.		REV
				CHK. BY	TSP	B-3296-1-09		△
NO.	DATE	DESCRIPTION			BY	CHK	REVISIONS	



411

418

1/4"

(4) RIVETS

Code Symbol

U
W

Code Marks

User Order No.

7056

User Equip No.

E-201

Mfg. Serial No. Year Built

13296-1

2012

CERTIFIED BY
HEAT TRANSFER
SYSTEMS, INC.
ST. LOUIS, MO.

Max. Allowable Working Pressure
PSIG @ F

Shell-side	70	140
Tube-side	47	400

Min. Design Metal Temp.
°F @ PSIG

Shell-side	-20	70
Tube-side	-20	47

Max. Allowable Ext. Working Pressure
PSIG @ F

Shell-side		
Tube-side	15	400

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.

6"

9 3/4"

3"

1/4"

6 1/2"

HEAT TRANSFER SYSTEMS, INC
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C 13296-1. HEX

NAME PLATE

NO.	DATE	DESCRIPTION	BY	CHK
02-07		REVISED PER CUSTOMER'S RETURN	TSP	TSP

REVISIONS

DR. BY TSP

HTS 13296-1

DATE 12-18-12

DWG. NO.

CHK. BY TSP

B-3296-1-10

REV



DR. BY TSP		Δ	06-24-13	TSP	BILL OF MATERIALS CUSTOMER: THERMAL TRANSFER SYSTEM P. D. NO.: 7056					HTS 13296-1		
DATE 12-18-12		Δ	02-04-13	TSP								
CHK. BY TSP			DATE	BY								
		REVISIONS										
PART NAME	ND.	MATERIAL	DESCRIPTION			QUANTITY EA.	TOT.	VENDOR	P. D. NO.	PROM ISED	REC'D	HEAT NUMBER ACTUAL COST
VERT SUPP TOP	415	SA-516-70	1/2" THK x 6' x 2 5/16" LG			2	2					
HEAD ⊙	416	SA-516-70	0.312" MIN, 3/8" NOM x 26 3/4" OD ASME 2-1 S.E. HD, 1 1/2" SF, DAH = 8 3/8"			2	2					
FLANGE ⊙	417	SA-516-70N	2 1/2" THK x 30 7/8" O.D. x 26 7/8" I.D. (FIN. DIM)			2	2					
CAUTION PL	418	SS	HTS STANDARD CAUTION PLATE			1	1					
INSULATION SUPPORT Δ	419	SA-36	1/4" THK x 28 3/4" O.D. x 26 7/8" I.D.			1	1					
STUD Δ *	501	SA-193-B7	3/4" x 6 3/4" LG 10NC STUD			48	52					
NUT Δ *	502	SA-194-2H	3/4" 10NC HVY HEX NUT			96	104					
STUD Δ *	503	SA-193-B7	5/8" x 4" LG 11NC STUD			4	8					
STUD Δ *	504	SA-194-2H	5/8" 11NC HVY HEX NUT			8	16					
			INCLUDES 5% EXTRA TO BE SHIPPED WITH THE UNIT									