

NAME PLATE STAMPING

10722

CERTIFIED BY
ATLAS CLIFTON, NJ
INDUSTRIAL MFG. CO. USA

PART W RT-3

MAWP

SHELL [] FV & 75 PSI AT [] 575 °F

TUBES [] PSI AT [] °F

MDMT

SHELL [] °F AT [] FV & 75 PSI

TUBES [] °F AT [] PSI

SERIAL [] 12541 YEAR [] 2010

PO NO.: 610873932

TUBES&TS MAWP: FV&50 PSI @ 575°F

TUBES&TS MDMT: -20°F @ FV&50 PSI

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 THE SPECIFIC OPERATING CONDITIONS SHOWN ON THE ATLAS DRAWING AND SHALL BE RE-EVALUATED BEFORE IT IS OPERATED AT DIFFERENT OPERATING CONDITIONS.

NOTES

	EMPTY	FULL	BUNDLE
1. WEIGHTS (lb):	5130	8185	----
2. DESIGN DATA:	SHELLSIDE	TUBESIDE	
DESIGN PRESS. (psig)	FV & 75	FV & 50	
MDMT/DESIGN TEMP. (°F)	-20/575	-20/575	
CORROSION ALL. (in)	1/8	1/16	
NO. OF PASSES	1	1	
TEST PRESS. (psig)	104	84	
INSULATION TK. (in)			(BY OTHERS)
IMPACT TEST	NOT REQ'D	NOT REQ'D	

3. OPERATING CONDITIONS: THE HEAT EXCHANGER HAS BEEN MECHANICALLY DESIGNED FOR THE FOLLOWING CONDITIONS:

CONDITION	AXIAL DIFF.	AVG. SHELL TEMP	AVG. TUBE TEMP	DESIGN THERMAL EXP METAL TEMP CYCLES
MAX EXT	+0.0918"	70°F	120°F	----
MAX COMP	-0.0692"	120°F	70°F	----

ATLAS SHOULD BE CONSULTED IF THE EXCHANGER IS TO BE OPERATED AT ANY OTHER CONDITIONS.

- EFFECTIVE SURFACE AREA (sq. ft.): 1047
- BOLT HOLES TO STRADDLE UNIT/NOZZLE CENTERLINES.
- TOLERANCES ARE PER TEMA.
- PROHIBITED MATERIAL: ASBESTOS
- GASKET BEARING SURFACE FINISHES AS FOLLOWS: TUBESHEETS: 125-250 Ra.
- TUBE HOLES TO BE GROOVED PER TEMA 'R'.
- EXPAND TUBES 2" FROM TUBESIDE FACE OF TUBESHEETS. (1/8" FROM SHELLSIDE FACE).
- RADIOGRAPHY: NOT REQUIRED.
- SURFACE PREPARATION: BY OTHERS.
- PAINT: BY OTHERS.
- COAT EXPOSED MACHINED SURFACES WITH RUST VETO 342.
- PROTECT NOZZLE OPENINGS WITH PLYWOOD/PLASTIC COVERS.
- SOAP BUBBLE TEST REINFORCEMENT PADS AT 25 PSIG & PLUG TEST HOLE W/ HEAVY GREASE.
- PRESSURE RELIEF DEVICES (UG125) ARE THE RESPONSIBILITY OF THE USER.
- NO WELD SPATTER OR ARC STRIKES ARE PERMITTED ON THE EXCHANGER.
- ALL INTERNAL & EXTERNAL SURFACE OF EQUIPMENT SHALL BE THOROUGHLY CLEANED & FREE FROM ALL GREASE, LOOSE SCALE, RUST & ANY OTHER FOREIGN MATTER.
- THE EQUIPMENT SHALL BE COMPLETELY DRAINED OF ALL TEST WATER AFTER HYDROTEST.

CUSTOMER: BAYER CROPSCIENCE LP

PLANT LOCATION: INSTITUTE, WV

P.O. #: 610874932

UNITS REQ'D: (1) ONE

ITEM #: ATLAS JOB #: 13145

INDUSTRIAL MANUFACTURING CO.
81 SOMERSET PLACE
CLIFTON, N.J.

CONDENSER 'SHELL'

UNIT SIZE: 24-216 TYPE: -E-/VERT.

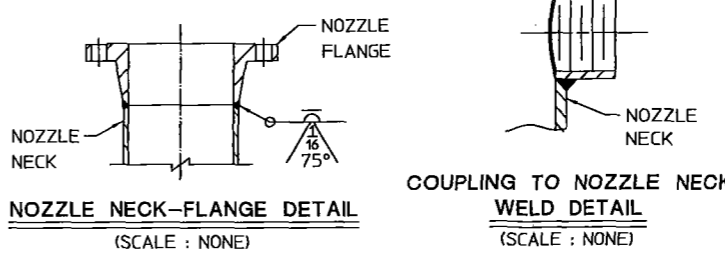
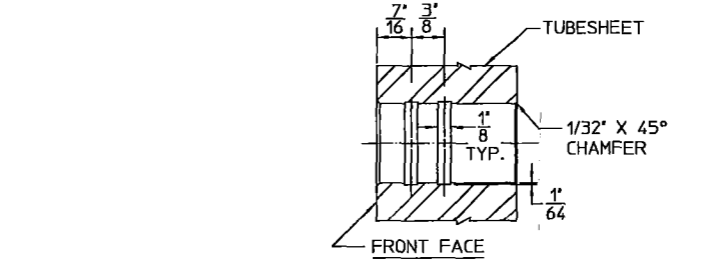
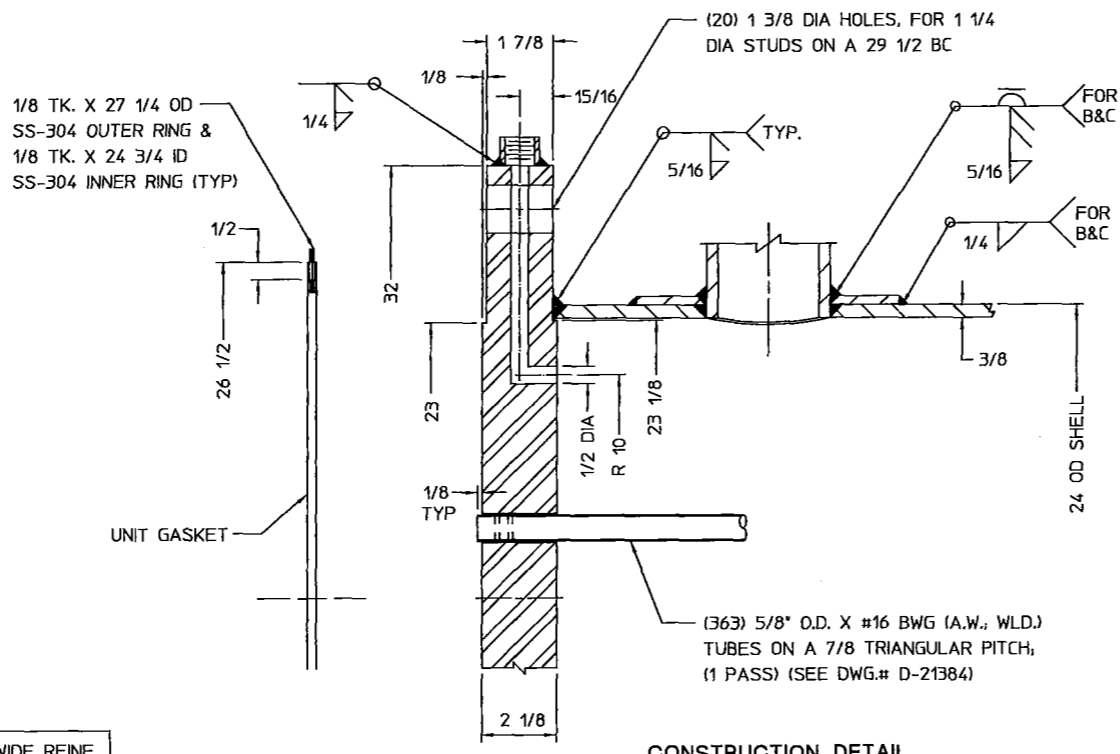
SCALE	MADE	CK.	APP.	QA	DATE	DRAWING NO.	REV.
AS NOTED	HASU	JG	FM	RM	10/18/10	D-21383	3

SCALE VERIFICATION BY: _____

AS-BUILT DRAWING

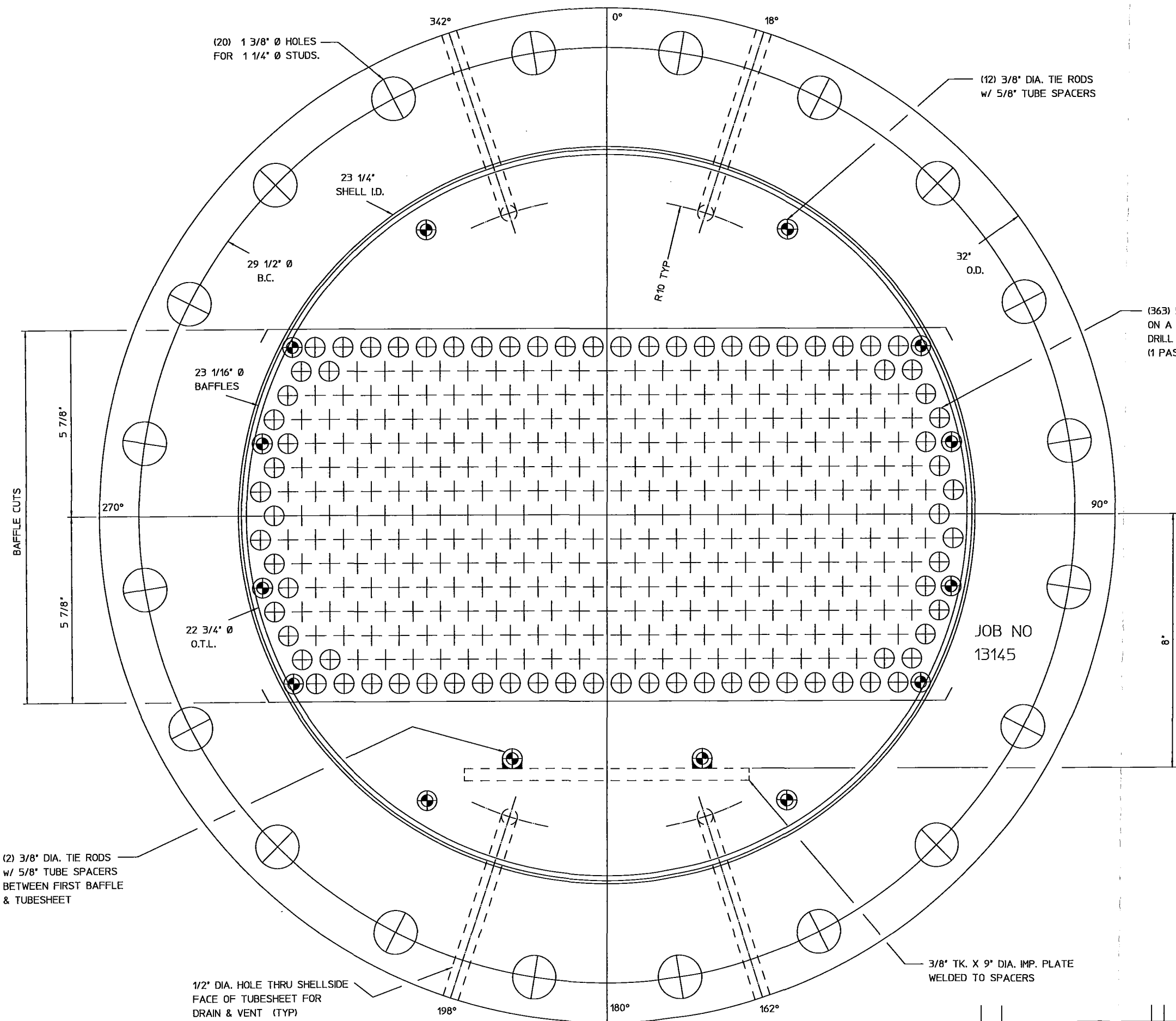
ATLAS INDUSTRIAL MANUFACTURING CO.
CERTIFIED CORRECT
DATE: October 27, 2010
BY: Hasu Darji

MARK	QTY	PURPOSE	SIZE	RATING/TYPE	THKNS	REMARKS
V4	1	VENT	1/2"	CL 3000-HC	----	W/ PLUG
V3	1	VENT	1/2"	CL 3000-HC	----	W/ PLUG
V2	1	VENT	1/2"	CL 3000-HC	----	W/ PLUG
V1	1	VENT	1/2"	CL 3000-HC	----	W/ PLUG
D4	1	DRAIN	1/2"	CL 3000-HC	----	W/ PLUG
D3	1	DRAIN	1/2"	CL 3000-HC	----	W/ PLUG
D2	1	DRAIN	1/2"	CL 3000-HC	----	W/ PLUG
D1	1	DRAIN	1/2"	CL 3000-HC	----	W/ PLUG
K	1	TEMP.	1"	CL 3000-HC	----	W/ PLUG
J	1	TEMP.	1"	CL 3000-HC	----	W/ PLUG
H	1	PRESSURE	1"	CL 3000-HC	----	W/ PLUG
G	1	PRESSURE	1"	CL 3000-HC	----	W/ PLUG
C	1	OUTLET	8	CL 150-WNRF	0.3220	1/4 TK. X 2" WIDE REINF. PAD W/ 1/8 NPT HOLE
B	1	INLET	8	CL 150-WNRF	0.3220	



ALL DIMENSIONS ARE IN INCHES

NOZZLES/CONNECTIONS				SHELLSIDE MATERIAL SPECIFICATIONS				TUBESIDE MATERIAL SPECIFICATIONS				TUBE BUNDLE MATERIAL SPECIFICATIONS				MISCELLANEOUS MATERIAL SPECIFICATIONS			
PIPE	CS SA-106-B	NOZZLE NECKS	CS SA-106-B	PIPE	ROLLED PLATE	NOZZLE NECKS		PIPE	ROLLED PLATE	NOZZLE NECKS		TUBES	SA-316/316L (DUAL) SA-249	SUPPORTS		STUDS	SA-193-B71 (TEFLON COATED)	CODE OF CONSTRUCTION:	
ROLLED PLATE		NOZZLE FACINGS		HEADS		NOZZLE FACINGS		HEADS		NOZZLE FACINGS		TUBESHEETS	SS-316/316L (DUAL) SA-240	SUPPORT PADS		NUTS	SA-194-ZH (TEFLON COATED)	ASME SECTION VIII, DIVISION 1	
HEAD		NOZZLE FLANGES	FS SA-105	END PLATES		NOZZLE FLANGES		END PLATES		NOZZLE FLANGES		BAFFLES	SS-316 SA-240	SUPPORT LUGS				EDITION: 2007	
END PLATE		REINF. PADS	CS SA-516-70	UNIT FACINGS		REINF. PADS		UNIT FACINGS		REINF. PADS		TIE RODS	SS-316 SA-479	LIFTING LUGS				ADDENDA: 2009	
UNIT FACINGS		COVER CYLINDER		UNIT FACINGS		FLOATING HD. CYL		UNIT FACINGS		FLOATING HD. CYL		SPACERS	SS-316 SA-249	INSULATION BARS				CODE CLASS 'R'	
UNIT FACINGS		COVER HEAD		UNIT FACINGS		FLOATING HEAD		UNIT FACINGS		FLOATING HEAD		IMP. PLATE	SS-316 SA-240	NAME PL. BRACKET				EDITION: 1999	
EXP. JT. (STUBS)		COVER FLANGE		COVER		FLOATING HD. FLG		COVER		FLOATING HD. FLG		LONG BAFFLE		NAME PLATE	SS-304 SA-240			ADDENDA: NONE	
EXP. JT. (BELLOWS)		COUPLINGS/PLUGS (TS)	SS-316L SA-182	PASS PARTITION		SPLIT RING		PASS PARTITION		SPLIT RING		SEALING BARS			SS-302				
COUPLINGS/PLUGS	FS SA-105			COUPLINGS				COUPLINGS				SEALING STRIPS							
												TIE ROD NUTS	SA-194-8H						



(20) 1 3/8" Ø HOLES FOR 1 1/4" Ø STUDS.

(12) 3/8" DIA. TIE RODS w/ 5/8" TUBE SPACERS

23 1/4" SHELL I.D.

29 1/2" Ø B.C.

(363) 5/8" O.D. X #16 BWG TUBES ON A 7/8" TRIANGULAR PITCH DRILL & REAM T.S. TO 0.635" (1 PASS)

23 1/16" Ø BAFFLES

BAFFLE CUTS

5 7/8"

5 7/8"

22 3/4" Ø O.T.L.

JOB NO 13145

(2) 3/8" DIA. TIE RODS w/ 5/8" TUBE SPACERS BETWEEN FIRST BAFFLE & TUBESHEET

1/2" DIA. HOLE THRU SHELLSIDE FACE OF TUBESHEET FOR DRAIN & VENT (TYP)

3/8" TK. X 9" DIA. IMP. PLATE WELDED TO SPACERS

AS-BUILT DRAWING

ATLAS INDUSTRIAL MANUFACTURING CO.
CERTIFIED CORRECT
 DATE October 26, 2010
 BY Hasu Darji

ALL DIMENSIONS ARE IN INCHES

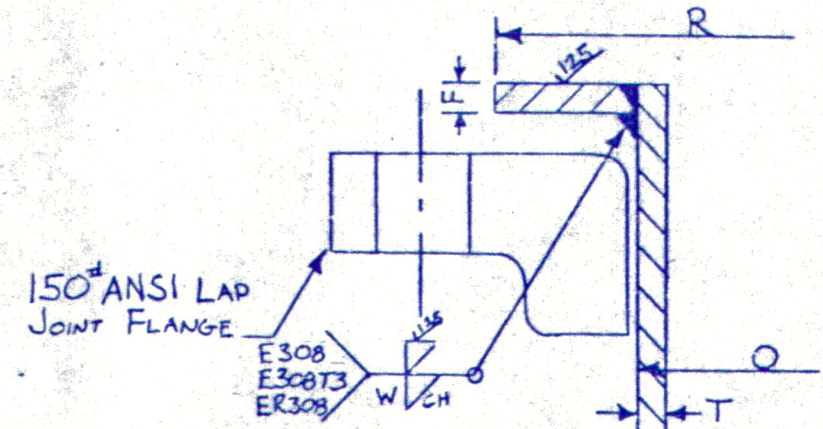
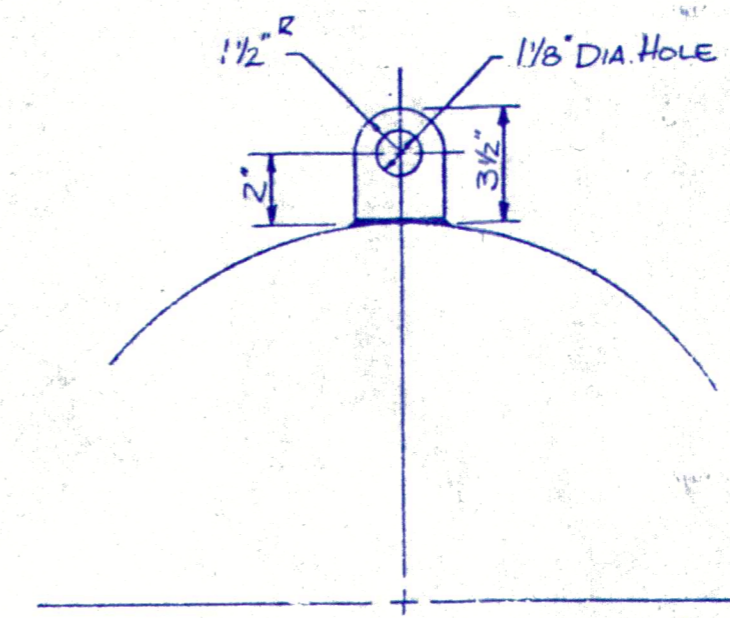
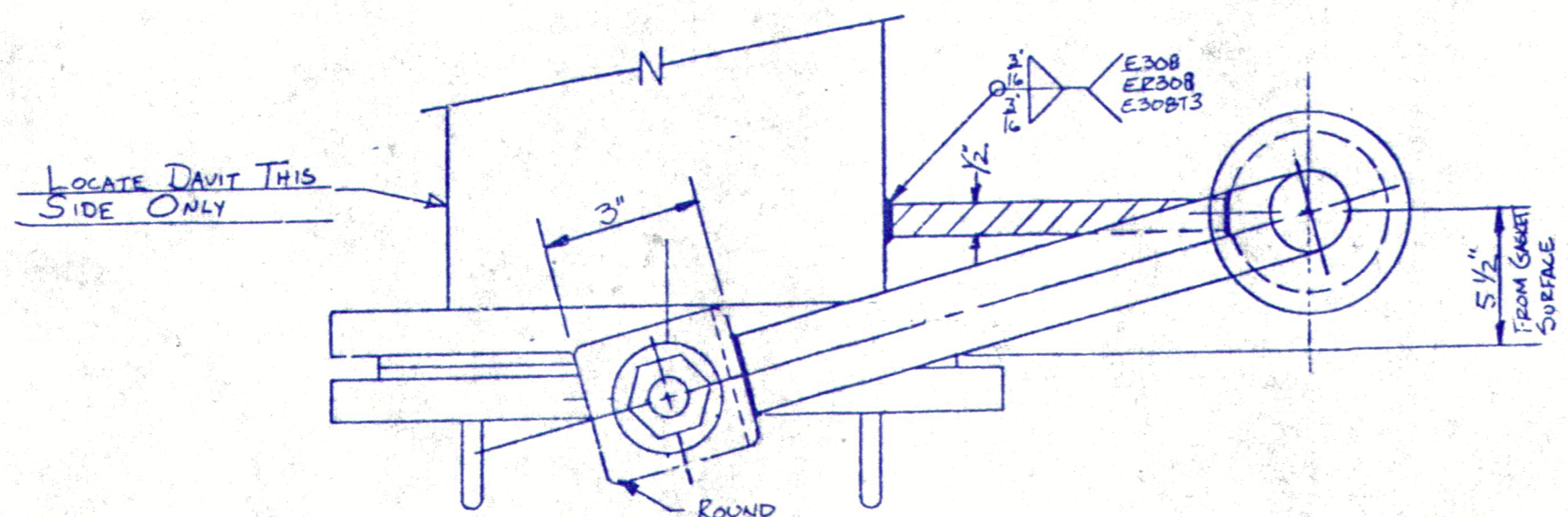
CUSTOMER BAYER CROPSCIENCE LP
 PLANT LOCATION... INSTITUTE, WV
 P.O. # 610874932
 UNITS REQ'D (1) ONE
 ITEM #
 ATLAS JOB # 13145

ATLAS INDUSTRIAL MANUFACTURING CO.
 81 SOMERSET PLACE
 CLIFTON, N.J.

TUBE LAYOUT

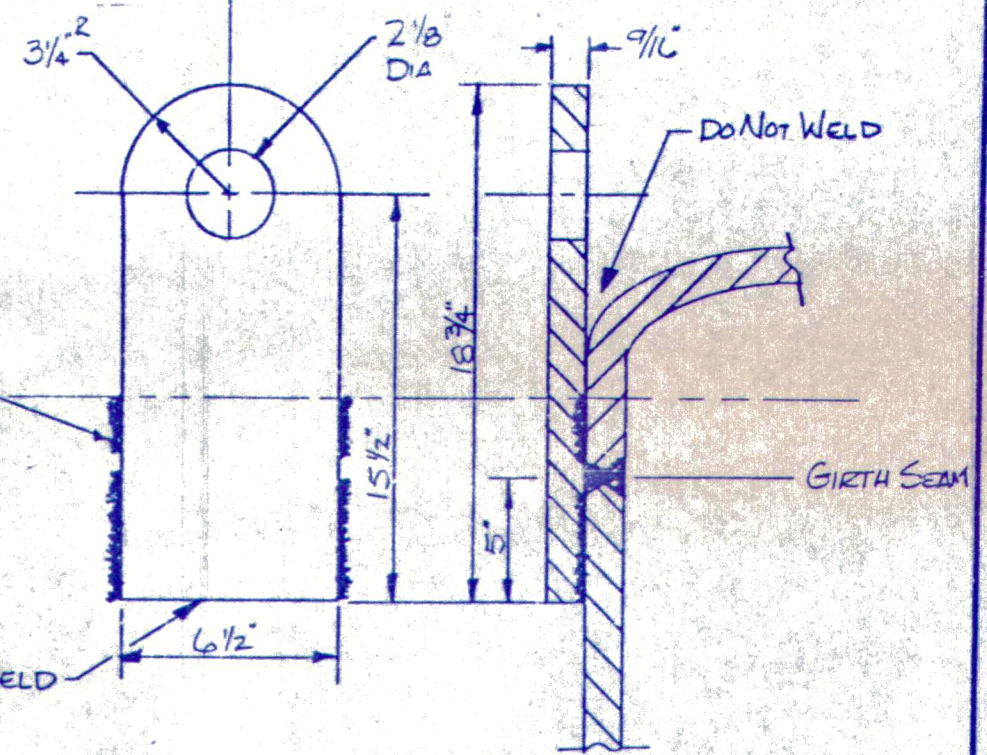
REV.	DESCRIPTION	BY	CHK	APP	DATE	SCALE	MADE	CK	APP	QA	DATE	DRAWING NO.	REV.
1	REV. SHELLSIDE MATERIAL.				10/26/10	FULL	HASU	JG	FM	RM	10/18/10	D-21384	1

SCALE VERIFICATION BY: _____

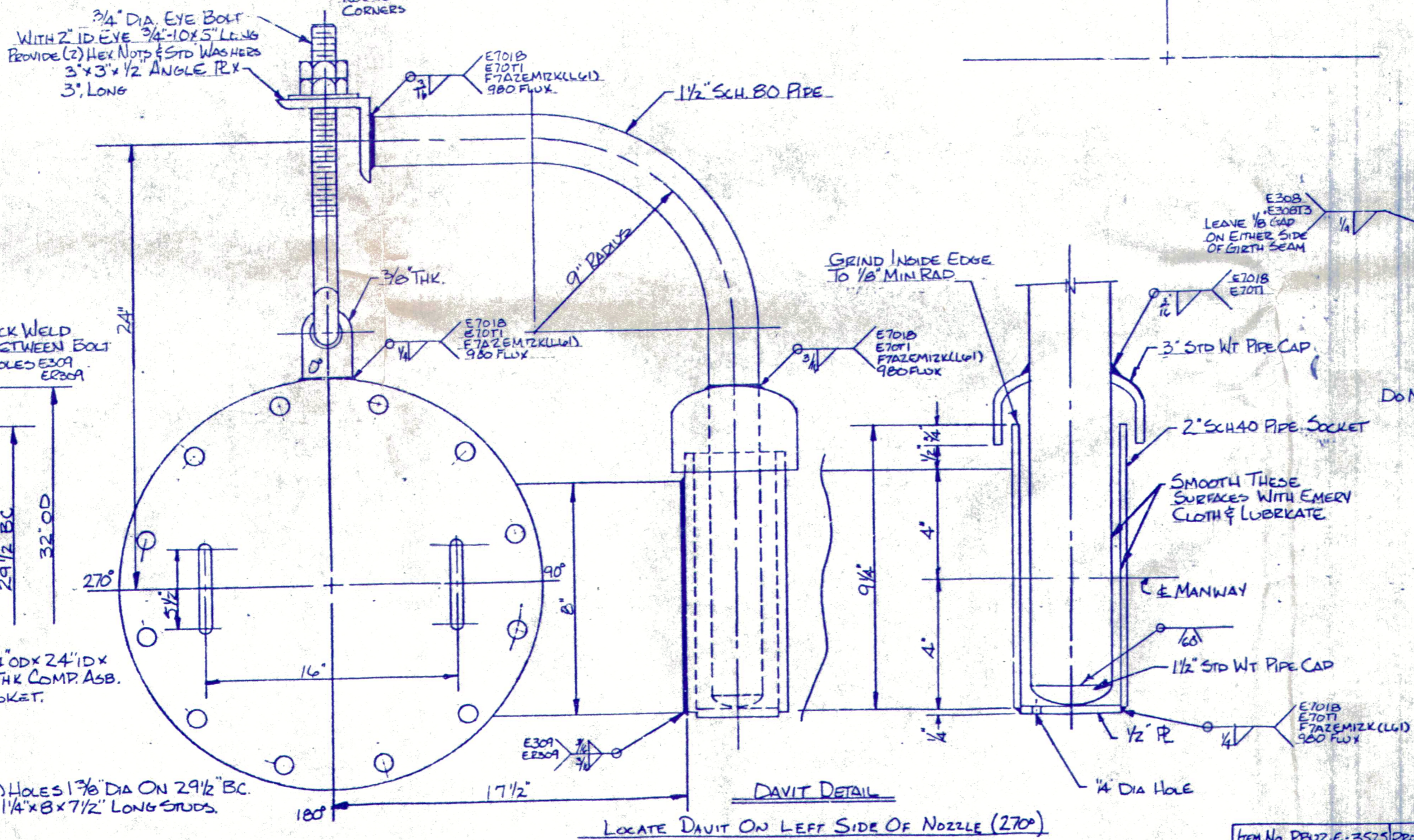


MARK	SIZE	T	F	O	R	W
A	2.4"	3/8"	3/8"	2.4"	2.7 1/4"	5/16"
B	2"	0.344	3/8"	2.375	3.5/8"	5/16"
C	1 1/2"	0.281	5/16"	1.900	2.7/8"	1/4"
D	1 1/2"	0.281	5/16"	1.900	2.7/8"	1/4"
E	1 1/2"	0.281	5/16"	1.900	2.7/8"	1/4"
F	2.4"	1/4"	1/4"	2.4"	2.7 1/4"	3/16"
G	1 1/2"	0.281	5/16"	1.900	2.7/8"	1/4"
H	1 1/2"	0.281	5/16"	1.900	2.7/8"	1/4"
J	3"	0.300	5/16"	3.5"	5"	1/4"
K	3"	0.300	5/16"	3.5"	5"	1/4"

LAP JOINT NOZZLE DETAIL



LIFT LUGS (2) REAR
LUGS TO FIT CONTOUR OF VESSEL



DAVIT DETAIL

LOCATE DAVIT ON LEFT SIDE OF NOZZLE (270°)

304
C.S.T.

ISSUED FOR INSULATION ONLY
TRANS. 4-PBUZ-ZGM

SOUTHERN HEAT EXCHANGER CORP
P.O. BOX 5906 TUSCALOOSA, AL. 35405
DATE: 8-26-82 ORD. NO. 82-102 DWG. NO. SM 1921-1
BY: A. WEST SHEET 3 OF 3
ITEM NO. PBUZ-C-3525

ITEM No PBUZ-E-3525 PROJ No 6476-40027