

**GENERAL NOTES:**

1. ASME CODE REQUIRED, NATIONAL BOARD REGISTRATION IS REQUIRED
2. CONSTRUCTION IN ACCORDANCE WITH THE 2013 ASME CODE, SECTION VIII DIVISION 1 AND CLIENTS SPECIFICATIONS.
3. RADIOGRAPHY : HEAD/SHELL (CIRC SEAM) - SPOT ; SHELL (LONG SEAM) - SPOT
4. JOINT EFFICIENCY : HEAD/SHELL (CIRC SEAM) - 85% ; SHELL (LONG SEAM) - 85%
5. POSTWELD HEAT TREATMENT : NOT REQUIRED
6. MAGNETIC PARTICLE EXAMINATION : NOT REQUIRED
7. LIQUID PENETRANT EXAMINATION : REQUIRED
8. LETHAL SERVICE : NO
9. DESIGN PRESSURE 478 P.S.I.G. 475 °F.
10. MINIMUM DESIGN METAL TEMPERATURE -20 °F AT 499 P.S.I.G.
11. EXTERNAL DESIGN PRESSURE FV P.S.I. 350 °F.
12. MAXIMUM ALLOWABLE STRESS : 20000 P.S.I. AT 475 °F DESIGN TEMPERATURE.
13. CORROSION ALLOWANCE : 1/8"
14. INSULATION : 3"/HC/BTM HEAD;ST FIREPROOFING : NO
15. MAXIMUM ALLOWABLE WORKING PRESSURE 499 P.S.I.G. LIMITED BY HEAD 1
16. SHOP HYDROSTATIC TEST : 648 P.S.I.G.
17. INSPECTED BY ONE CIS COMPANY, SHOP, AND CLIENT (OTHERS) -
18. TEST HOLES SHALL BE PLUGGED WITH GREASE PRIOR TO SHIPMENT.
19. ALL FLANGE BOLT HOLES SHALL STRADDLE VESSEL CENTERLINES UNLESS OTHERWISE SHOWN OR NOTED.
20. ESTIMATED WEIGHT OF VESSEL :  
 SHIPPING : 10,900 LBS  
 EMPTY : 10,900 LBS  
 OPERATING : 13,400 LBS  
 TEST WEIGHT : 18,500 LBS
21. VESSEL SHALL BE THOROUGHLY CLEANED OF ALL SCALE, SPLATTER, FLUX, GREASE, DIRT, AND ALL LOOSE FOREIGN MATTER.
22. CLOSE ALL OPENINGS FOR SHIPMENT. PROTECT WITH PLASTIC COVERS FOR FLANGES AND PLASTIC PLUGS FOR COUPLINGS.
23. NOZZLE PROJECTIONS ARE FROM TOP OF SHELL TO FACE OF FLANGE UNLESS OTHERWISE NOTED.
24. COAT FLANGE FACES AND OTHER MACHINED SURFACES WITH STANDARD RUST PREVENTATIVE.
25. PAINTING IS REQUIRED IN ACCORDANCE WITH CUSTOMER SPECIFICATIONS : MSP-038
26. ALL TAIL DIMENSIONS ARE FROM REFERENCE WORK LINE UNLESS OTHERWISE SHOWN OR NOTED.
27. CIRCUMFERENTIAL & LONGITUDINAL WELDS USE WPS-5 UNLESS OTHERWISE NOTED.
28. ALL CARBON STEEL PIPING AND/OR VESSEL REPAIRS USE WPS-4
29. WELD ALL ATTACHMENTS AND SUPPORTS USE W045 & WPS-2 UNLESS NOTED OTHERWISE.
30. WIND CODE: ASCE 7-05 AT 90 MPH
31. SEISMIC CODE: ASCE 7-05 CATEGORY: B
32. SNOW LOAD: 20 LBS/FT<sup>2</sup>
33. WIND: SHEAR 1,142 Lb<sub>f</sub> MOMENT 21,101 Lb<sub>f</sub> FT
34. SEISMIC: SHEAR 1,144 Lb<sub>f</sub> MOMENT 27,785 Lb<sub>f</sub> FT

	CERTIFIED BY	NB 52
	VENTECH VESSEL FABRICATORS, LLC. PASADENA, TX	
	MFG. SER. NO. <u>8000-032-T550</u>	YR. BUILT <u>2015</u>
	MAWP ( <u>35 kg/cm<sup>2</sup>g</u> ) <u>499</u> psig AT ( <u>246.1 °C</u> ) <u>475</u> °F	
	MAWP EXT ( <u>---</u> kg/cm <sup>2</sup> g ) <u>---</u> psig AT ( <u>---</u> °C ) <u>---</u> °F	
	MDMT ( <u>-28.8 °C</u> ) <u>-20</u> °F AT ( <u>35 kg/cm<sup>2</sup>g</u> ) <u>499</u> psig	
	TEST PRESSURE ( <u>45.5 kg/cm<sup>2</sup>g</u> ) <u>648</u> psig	
	CORR. ALLOW. ( <u>3 mm</u> ) <u>1/8</u> in. ( <u>3 mm</u> ) <u>1/8</u> in. ( <u>3 mm</u> ) <u>1/8</u> in.	
	INSPECTED BY: <u>ONE CIS</u> FV @ <u>350 °F (176.6 °C)</u>	
	CUSTOMER: <u>VENTECH XTL Oklahoma City, LLC</u>	
	CUSTOMER P.O. #: <u>4777010-14-03382</u>	
	<u>T-550 FT FRACTIONATOR</u>	

**CERTIFIED AS BUILT**

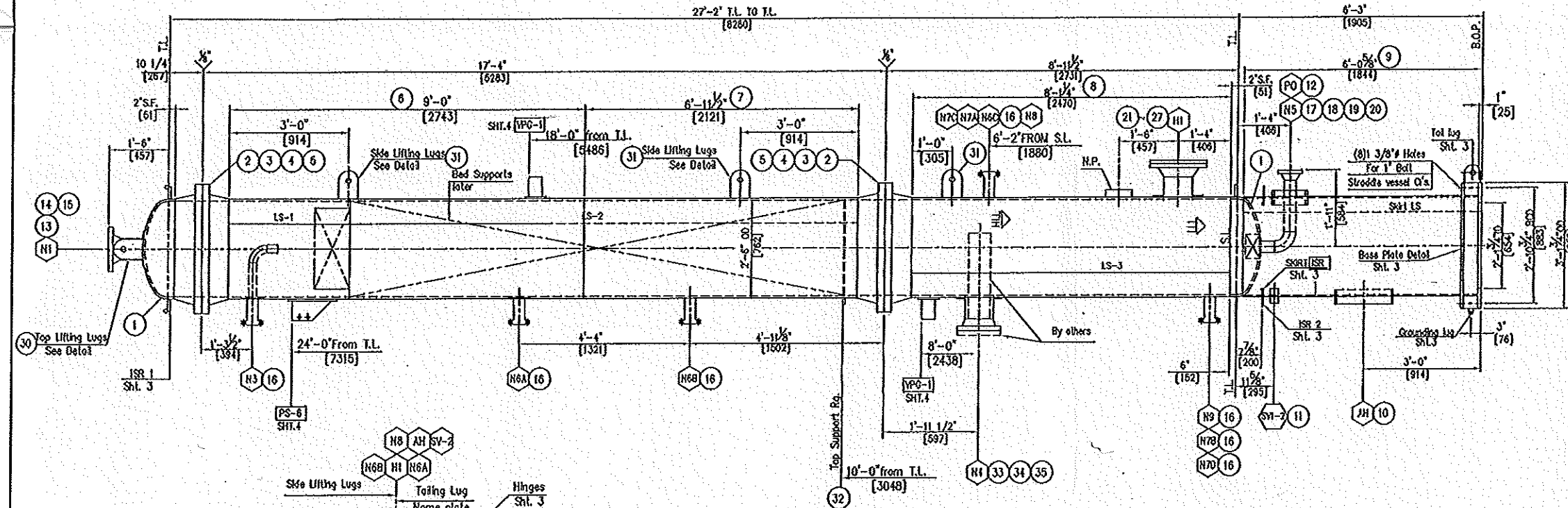
JCS 12/2/15

REV.	DATE	BY	CHKD.	DESCRIPTION
3	12-02-15	CM	JS	AS BUILT
2	03-17-15	JE	JS	REVISED AS NOTED
1	02-02-15	JE	JS	FOR CONSTRUCTION
0	01-12-15	JE	JS	FOR APPROVAL

**VENTECH VESSEL FABRICATORS, LLC**

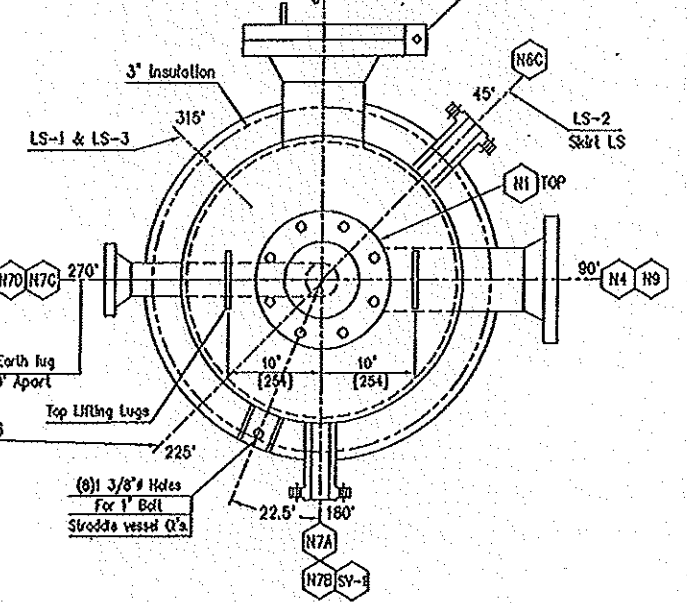
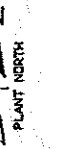
1107 BROADWAY PASADENA, TEXAS

DRAWING TITLE <u>FT FRACTIONATOR</u>	
DESIGN DATA & GENERAL INFORMATION	
CUSTOMER: <u>VENTECH XTL Oklahoma City, LLC</u>	ITEM NO. <u>T-550</u>
FOR: <u>GTL JOINT VENTURE, LLC</u>	TAG NO.
LOCATION: <u>OKLAHOMA CITY, OK</u>	CUST. P.O. <u>4777010-14-03382</u>
DRN. BY: <u>J. ELIZONDO</u> DATE: <u>01-12-15</u>	DWG. NO. <u>D-8000-032-T550</u>
CHKD: <u>J. SANTOS</u> DATE: <u>01-12-15</u>	<u>8000-032-T550</u>
CERTIFIED FOR	REV. <u>3</u>

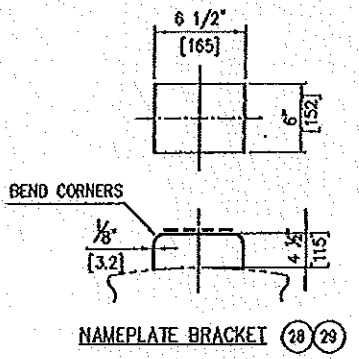


TOWER ELEVATIONS

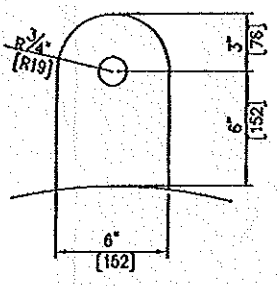
INTERNALS:  
INTERNAL RO, DETAILS & INTERNAL  
PIPE DISTRIBUTION FOR N3 & N4  
WILL BE PROVIDED LATER



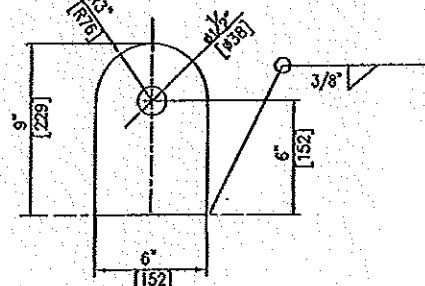
NOZZLE ORIENTATIONS



NAMEPLATE BRACKET (28) (29)



TOP LIFTING LUGS (30)  
(2) REQ'D

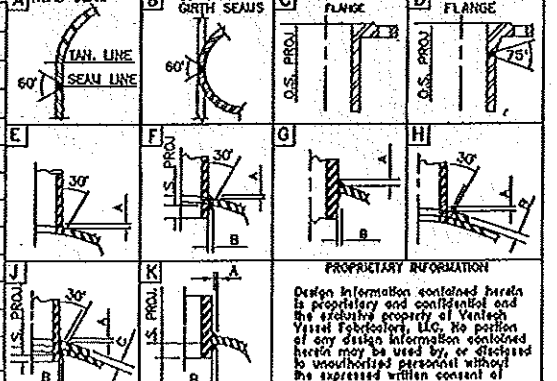


SIDE LIFT LUGS (31)  
(3) REQ'D

TOWER LIQUID LEVELS  
H.L.L. = 72'  
L.L.L. = 12'

MARK	REQ'D	SIZE	RATING	NECK O.D.	SERVICE	NECK PL. OR SCH.	O.S. PROJECTION	I.S. PROJECTION	TYPE CONNECTION	WELD SIZE	REMARKS			
PO	1	10"	PIPE	10 3/4"	PIPE OPENING	120	2"	2"	-	F	3/8"	3/8"	-	
SV1/2	2	2"	PIPE	2 3/8"	SKIRT VENTS	160	2"	2"	-	F	1/4"	1/4"	-	
AH	1	16"	PIPE	16"	ACCESS HOLE	XS	2"	2"	-	F	3/8"	3/8"	-	
HI	1	8"	300# RFLWH	8 5/8"	HAND HOLE	XS	10"	1/2" ± 1/2"	D	J	3/8"	1/4"	3/8"	W/ Repod
N9	1	2"	300# RFLWH	3 5/16"	STEAM CUT	-	8"	1/2" ± 1/2"	C	F	3/8"	1/4"	-	
N8	1	2"	300# RFLWH	3 5/16"	PRESSURE GAUGE	-	8"	1/2" ± 1/2"	C	F	3/8"	1/4"	-	
N7A-D	4	2"	300# RFLWH	3 5/16"	LIQUID LEVEL GAUGE	-	8"	1/2" ± 1/2"	C	F	3/8"	1/4"	-	
N6A-C	3	2"	300# RFLWH	3 5/16"	THERMOWELL	-	8"	1/2" ± 1/2"	C	F	3/8"	1/4"	-	N6A/B FIT FLUSH
N5	1	3"	300# RFLWH	3 1/2"	BTM DRAWOFF	XS	SEE DWG.	FLUSH	D	E	3/8"	-	-	W/ Vortex Breaker, SHL 3
N4	1	8"	300# RFLWH	8 5/8"	FEED INLET	120	10"	1/2" ± 1/2"	D	J	3/8"	1/4"	3/8"	W/ Internd pipe (by others)
N3	1	2"	300# RFLWH	3 5/16"	TOP REFLUX RETURN	-	8"	1/2" ± 1/2"	C	F	3/8"	1/4"	-	W/ Internd pipe (by others)
N1	1	6"	300# RFLWH	6 5/8"	VAPOR OUTLET	XS	SEE DWG.	1/2" ± 1/2"	D	J	3/8"	1/4"	3/8"	

NOTE:  
NOZZLE NOTES:  
(1) DRILL AND TAP 1/4" TELLTALE HOLE IN REINFORCING PAD. (2) INSIDE EDGES OF NOZZLE NECKS SHALL BE ROUNDED TO 1/8" MIN. OR HALF THE WALL THICKNESS IF LESS THAN 1/4". (3) GAUGE, GRIND, OR CHIP INSIDE TO SOUND METAL AND WELD TO "B". (4) COUPLING PROJECTIONS ARE FROM SHIRT SIDE.



BILL OF MATERIALS				
ITEM	QTY	DESCRIPTION	MATERIAL	
1	2	2:1 ELLIPTICAL HEAD 30" .5625" MIN THK W/2" SF.	SA-516 Gr.70	
2	4	30" 300# RFLWH SCRES A FLANGE W/28 3/4" LD. BORE	SA-105	
3	55 + 22	FLANGE CONN.-STUD BOLTS 1 3/4" x 11 1/2" LONG PLATED	SA-193 GR.B7	
4	112 + 44	FLANGE CONN.-NUTS 1 3/4" HEX HEAD PLATED	SA-194 Gr.2H	
5	2 + 4	FLG CONN.-GASKET 30" 300# RF SPRAL WOUND GRAPHITE FILLED	304 SS	
6	1	SHELL 5/8" THK x 108" W.O. x 92 1/4" LG. ROLL TO 30" OD	SA-516 Gr.70	
7	1	SHELL 5/8" THK x 83 1/2" W.O. x 92 1/4" LG. ROLL TO 30" OD	SA-516 Gr.70	
8	1	SHELL 5/8" THK x 97 1/4" W.O. x 92 1/4" LG. ROLL TO 30" OD	SA-516 Gr.70	
9	1	SKIRT FL 3/8" THK x 75" W.O. x 93" LG. ROLL TO 30" OD	SA-516 Gr.70	
10	1	AH-PIPE 16" SCH XS x 6 3/4" LONG	SA-106 B	
11	2	SV1/2-PIPE 2" SCH XS x 15 1/2" LONG	SA-106 B	
12	1	PO-PIPE 10" SCH 120 x 5 3/8" LONG	SA-106 B	
13	1	HI-6" 300# RFLWH SCH. XS FLANGE	SA-105	
14	1	HI-PIPE 6" SCH XS x 8" LONG (TRM TO FIT)	SA-106 B	
15	1	HI-Repod 3/8" THK x 6 5/8" ID x 10 5/8" OD (FIT RAD.)	SA-516 Gr.70	
16	10	N3, N6A/B/C, N7A/B/C/D, N8, N9-2" 300# RFLWH x 9" LG.	SA-105	
17	1	N5-3" 300# RFLWH FLANGE SCH. XS	SA-105	
18	1	N5-PIPE 3" SCH XS x 15 3/8" LONG (TRM TO FIT)	SA-106 B	
19	1	N5-ELBOW 3" 90° LR. SCH XS	SA-234 WFB	
20	1	N5-PIPE 3" SCH XS x 4 3/4" LONG (TRM TO FIT)	SA-106 B	
21	1	HI-8" 300# RFLWH SCH. XS FLANGE	SA-105	
22	1	HI-PIPE 8" SCH XS x 8" LONG (TRM TO FIT)	SA-106 B	
23	1	HI-Repod 3/8" THK x 8 5/8" ID x 13 5/8" OD (ROLL TO RAD.)	SA-516 Gr.70	
24	1	HI-8" 300# RFLWH ELBID FLANGE	SA-105	
25	12 + 6	HI-STUD BOLTS 7/8" x 5 1/2" LONG PLATED	SA-193 GR.B7	
26	24 + 12	HI-NUTS 7/8" HEX HEAD PLATED	SA-194 Gr.2H	
27	1 + 2	HI-GASKET 8" 300# RF SPRAL WOUND GRAPHITE FILLED	304 SS	
28	1	VFAB HANGPLATE BRACKET	SA-516 Gr.70	
29	1	VFAB HANGPLATE	SS	
30	2	LIFT LUGS 1/2" THK x 6" W.D x 9" LG.	SA-516 Gr.70	
31	3	LIFT LUGS 1/2" THK x 6" W.D x 9" LG.	SA-516 Gr.70	
32	1	RHG PL. 0.5" THK x 1.5" W.D x 28 3/4" OD	SA-516 Gr.70	
33	1	N4-8" 300# RFLWH SCH. 120 FLANGE	SA-105	
34	1	N4-PIPE 8" SCH 120 x 8" LONG (TRM TO FIT)	SA-106 B	
35	1	N4-Repod 3/8" THK x 8 5/8" ID x 12 5/8" OD (FIT RAD.)	SA-516 Gr.70	

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JCS 12/2/15

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VENTECH VESSEL FABRICATORS, LLC  
1107 BROADWAY PASADENA, TEXAS

DRAWING TITLE: FT FRACTIONATOR  
GENERAL ARRANGEMENT

CUSTOMER: VENTECH XTL Oklahoma City, LLC  
FOR: GTL JOINT VENTURE, LLC  
LOCATION: OKLAHOMA CITY, OK

ITEM NO. T-550  
TAG NO.  
CUST. P.O. 4777010-14-03382

DRN. BY: J. ELUZONDO DATE: 01-12-15  
CHKD: J. SANTOS DATE: 01-12-15

DWG. NO. D-8000-032-1550  
8000-032-1550

CERTIFIED FOR: [Signature]  
CUT 2 OF 4