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) – FULL ; SHELL (LONG SEAM) – N/A
4. JOINT EFFICIENCY : HEAD/SHELL (CIRC SEAM) – 100% ; SHELL (LONG SEAM) – SEAMLESS
5. POSTWELD HEAT TREATMENT : REQUIRED
6. MAGNETIC PARTICLE EXAMINATION : NOT REQUIRED
7. LIQUID PENETRANT EXAMINATION : REQUIRED
8. LETHAL SERVICE : NO
9. DESIGN PRESSURE 230 P.S.I.G. 350 °F.
10. MINIMUM DESIGN METAL TEMPERATURE -20 °F AT 501 P.S.I.G.
11. EXTERNAL DESIGN PRESSURE FV P.S.I. 350 °F.
12. MAXIMUM ALLOWABLE STRESS : 17100 P.S.I. AT 350 °F DESIGN TEMPERATURE.
13. CORROSION ALLOWANCE : 1/8"
14. INSULATION : 1 1/2"/HC FIREPROOFING : NO
15. MAXIMUM ALLOWABLE WORKING PRESSURE 501 P.S.I.G. LIMITED BY NOZZLE
16. SHOP HYDROSTATIC TEST : 652 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 : 1,900 LBS
    EMPTY : 1,900 LBS
    OPERATING : 11,400 LBS
    TEST WEIGHT : 2,500 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-5P UNLESS OTHERWISE NOTED.
28. ALL CARBON STEEL PIPING AND/OR VESSEL REPAIRS USE WPS-4P .
29. WELD ALL ATTACHMENTS AND SUPPORTS USE WPS-2P 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^2

CERTIFIED BY | NB 57

VENTECH VESSEL FABRICATORS, LLC. PASADENA, TX

U W RT-1 HT

MFG. SER. NO. 8000-032-PK301-V1 YR. BUILT 2015

MAWP	(35.2 kg/cm²g) 501 psig	AT	(176.6 °C) 350 °F
MAWP EXT	(--- kg/cm²g) --- psig	AT	(--- °C) --- °F
MDMT	(-28.9 °C) -20 °F	AT	(35.2 kg/cm²g) 501 psig

TEST PRESSURE (45.8 kg/cm²g) 652 psig

CORR. ALLOW.	HEAD	SHELL	NOZZLES
	(3 mm) 1/8 in.	(3 mm) 1/8 in.	(3 mm) 1/8 in.

INSPECTED BY: ONE CIS FV @ 350 °F (176.6 °C)

CUSTOMER: VENTECH XTL Oklahoma City, LLC

CUSTOMER P.O. #: 4777010-15-00112

PK-301-V1 HYDROGEN MEMBRANE VESSELS

NAMEPLATES FOR: PK-301-V2 HYDROGEN MEMBRANE VESSELS – NB 58
PK-301-V3 HYDROGEN MEMBRANE VESSELS – NB 59
PK-301-V4 HYDROGEN MEMBRANE VESSELS – NB 60
PK-301-V5 HYDROGEN MEMBRANE VESSELS – NB 61

CERTIFIED AS BUILT
JCS 9/28/15

REV.	DATE	BY	CKD.	DESCRIPTION
3	09-28-15	CM	JS	AS BUILT
2	03-04-15	JE	DAN	REVISED AS NOTED
1	02-17-15	JE	DAN	FOR CONSTRUCTION
0	01-28-15	JE	DAN	FOR APPROVAL

VENTECH VESSEL FABRICATORS, LLC

1107 BROADWAY PASADENA, TEXAS

DRAWING TITLE HYDROGEN MEMBRANE VESSELS

DESIGN DATA

CUSTOMER: VENTECH XTL Oklahoma City, LLC | ITEM NO. PK-301

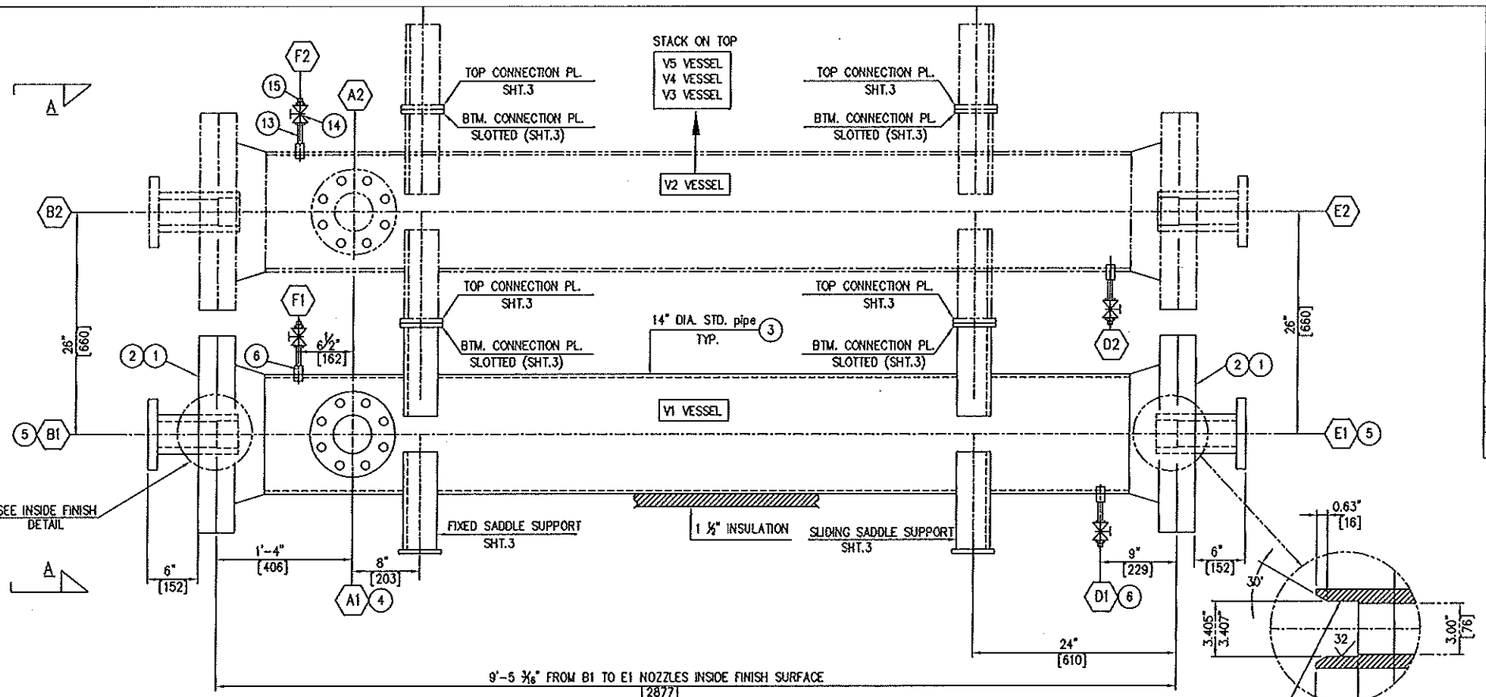
FOR: GTL JOINT VENTURE, LLC | TAG NO.

LOCATION: OKLAHOMA CITY, OK | CUST. P.O. 4777010-15-00112

DRN. BY: J. ELIZONDO DATE: 01-28-15 | S/O | DWG. NO. D-8000-032-PK301

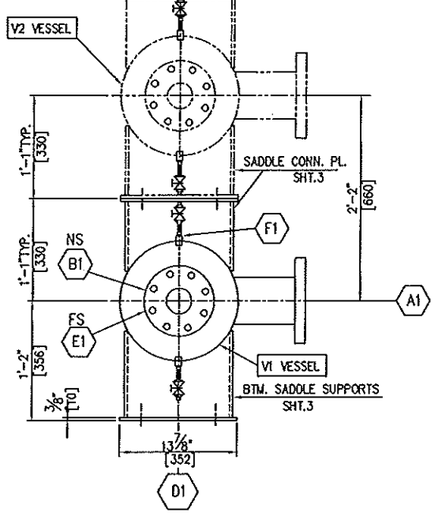
CHKD: D. NASAB DATE: 01-28-15 | 8000-032-PK301V1-V5

CERTIFIED FOR FABRICATION DATE: | SHT 1 OF 3 | REV. 3

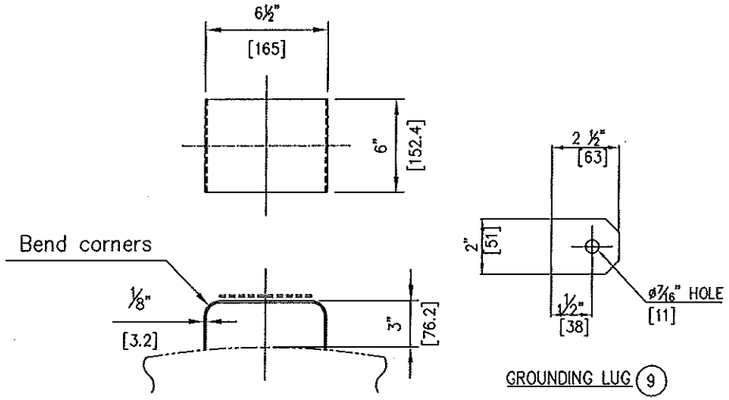


PK-301 V1-V5

E1 & B1 INSIDE FINISH DETAIL
FOR V1-V5 VESSELS



VIEW A-A



NAMEPLATE BRACKET (7) (8)

GROUNDING LUG (9)

BILL OF MATERIALS

ITEM	* QTY	DESCRIPTION	MATERIAL
1	10	14" 300# RFWN FLANGE SCH.STD	SA-105
2	10	14" 300# RF BLIND FLANGE	SA-105
3	5	PIPE 14" SCH STD. X 102" LONG	SA-106 GR. B
4	5	A1-A5- 4" 300# RF LWN x 9" LG.	SA-105
5	10	(B1-B5)(E1-E5)- 3" 300# RF LWN x 10 5/8" LG.	SA-105
6	10	(D1-D5)(F1-F5)- 1" 3000# SOCKET WELD COUPLING	SA-105
7	5	V-FAB NAMEPLATE	SS
8	5	V-FAB NAMEPLATE BRACKET	SS
9	1	GROUNDING LUG 1/2"THK. x 2" x 2 1/2"	SS
10	10 + 20	GASKET 14" 300# RF SPIRAL WOUND GRAPHITE FILLED	SS
11	200 + 80	STUD BOLTS 1 1/8" X 7" LONG PLATED	SA-193 GR. B7
12	400 + 160	NUTS 1 1/8" HEAVY HEX PLATED	SA-194 GR. 2H
13	10	1" PIPE NIPPLE S/XS SMLS PBE 3" LG	SA-106 GR. B
14	10	1" VALVE GATE 800# SW X THRD	CS
15	10	1" PLUG THRD SOLID ROUND HEAD	SA-105

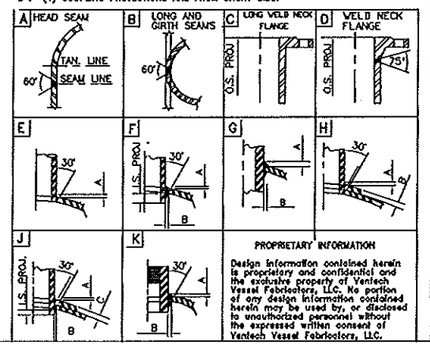
*QUANTITIES ARE FOR FIVE VESSELS

CERTIFIED AS BUILT
JCS 9/28/15

MARK	REQ'D	SIZE	RATING	NECK O.D.	SERVICE	NECK PL OR SCH.	PROJECTION O.S.	PROJECTION I.S.	REINFORCING PAD SIZE THK.	REINFORCING PAD SIZE I.D.	REINFORCING PAD SIZE O.D.	CONNECTION TYPE	CONNECTION STYLE	WELD SIZE A	WELD SIZE B	WELD SIZE C
F1-F5	5	1"	3000#SW-CPLG.	1 3/4"	VENT	-	5/8"	½"±½"	-	-	-	K	-	3/8"	1/4"	-
E1-E5	5	3"	300# RFLWN	4 5/8"	RESIDUE	-	SEE DWG.	SEE DWG.	-	-	-	C	E	3/8"	1/4"	-
D1-D5	5	1"	3000#SW-CPLG.	1 3/4"	DRAIN	-	5/8"	½"±½"	-	-	-	K	F	3/8"	1/4"	-
B1-B5	5	3"	300# RFLWN	4 5/8"	PERMEATE	-	SEE DWG.	SEE DWG.	-	-	-	C	F	3/8"	1/4"	-
A1-A5	5	4"	300# RFLWN	5 1/2"	INLET	-	8"	½"±½"	-	-	-	C	F	3/8"	1/4"	-

NOZZLE SCHEDULE (INSIDE PROJECTION IS FROM THE LOWEST POINT, OUTSIDE PROJECTION IS FROM THE HIGHEST POINT LINE OF VESSEL)

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) GOUGE, GRIND, OR CHIP INSIDE TO SOUND METAL AND WELD "b". (4) COUPLING PROJECTIONS ARE FROM SHORT SIDE.



REV.	DATE	BY	CKD.	DESCRIPTION
5	09-28-15	CM	JS	AS BUILT
4	07-27-15	DAN	JS	REVISED AS NOTED
3	03-24-15	JE	DAN	REVISED AS NOTED
2	03-04-15	JE	DAN	REVISED AS NOTED
1	02-17-15	JE	DAN	FOR CONSTRUCTION

VENTECH VESSEL FABRICATORS, LLC.
1107 BROADWAY PASADENA, TEXAS

DRAWING TITLE: HYDROGEN MEMBRANE VESSELS
GENERAL ARRANGEMENT

CUSTOMER: VENTECH XTL Oklahoma City, LLC — ITEM NO. PK-301V1-V5
FOR: GTL JOINT VENTURE, LLC — TAG NO.
LOCATION: OKLAHOMA CITY, OK — CUST. P.O. 4777010-15-00112

DRN. BY: D NASAB DATE: 08-13-15
CHKD: J. SANTOS DATE: 08-13-15
CERTIFIED FOR FABRICATION DATE:

S/O 8000-032-PK301V1-V5

DWG. NO. D-8000-032-PK301V1-V5
REV. 5
SHT 2 OF 3