BUTANE / PROPANE STORAGE TANK (T-201/202)

FOR

CRYOGENIC LPG STORAGE TERMINAL, KANDLA

Project : Cryogenic LPG Storage Terminal Kandla			**Plant/Section : Butane/ Propane Storage**		
Equipment: Butane / Propane Storage tank			**Equipment Name:** T-201,T-202		
No. Of Units: 2			**Service :** Storage of Liquid Propane/Butane/LPG		
Size: (Inner/Outer) mm ID: 47000/49000 (Inner/Outer)mm HT: 25000/26000			**Position:** Horizontal ( ) Vertical (√)		
Design Data			**Material Of Construction**		
Fluid : Liquid Propane/Butane				**Outer Tank**	**Inner Tank**
Capacity: 24000 MT **Type:** Double Wall Full Containment, Cup in Tank, Insulated with suspended deck			**Shell & Bottom**	LTCS	LTCS
	Outer Tank	**Inner Tank**	**Roof**	LTCS	
Working Pressure	1200 mmWC	Liq. Head			
Design Pressure	Liq. Head + 2000 mmWC & (-) 50 mmWC	Liq. Head			
Working Temp, °C	-43.1	-43.1			
Design Temp, °C	-45/55	-45/55			
Design Specific Gravity	Propane / Butane / LPG (0.5829 / 0.6088 / 0.6064) 1				
Corrosion Allowance, mm	Note-1	Note-1			

Nozzle Details:

Nozzles For	Name	No	Size (inch)	Rating	Remarks
Roof Manhole	N1	1	48	150#RF	With Blind Flange
Roof Manhole	N2	1	36	150#RF	With Blind Flange
Spare Nozzle	N3	1	3	300#RF	With Blind Flange
Pump Column	N4-A,B,C	3	24 1	300#RF	(NOTE-12)
Liquid Outlet from Pump Discharge	N5-A,B,C	3	10 HOLD	300#RF	(NOTE-12)
Column Purge Top	N6-A,B,C	3	2	300#RF	With Blind Flange.
Column Purge Bottom	N7-A,B,C	3	2	300#RF	With Blind Flange.
Liquid Inlet from Jetty	N8-A,B	2	16	300#RF	
Vapour Outlet(Compressor Suction)	N9	1	20 1	150#RF	

Top Spray	N10	1	2	300#RF	
Vacuum Protection (from Heater/ Condenser)	N11	1	6	300#RF	
Pump Minimum Recirculation Line (In Tank Pump & Booster Pump)	N12	1	10 (1)	300#RF	
Outer Tank Purge	N13	1	2	300#RF	To be provided with distribution pipe along whole annular space.
Level Transmitter(Radar Type)	N14	1	6	150#RF	To be provided with guide pipe of 4”.
Level Transmitter(Servo Type)	N15	1	8	150#RF	To be provided with guide pipe.
Vent Top on Roof	N16	1	2	300#RF	
Safety Valve	N17-A,B	2 HOLD	16 HOLD	150#RF	
Level Transmitter(Servo Type)	N18	1	8	150#RF	To be provided with guide pipe.
Breather Valve	N19-A,B	2 HOLD	12 HOLD	150#RF	
Pressure Transmitter	N20-A,B	2	2	300#RF	
Multipoint Temperature Element (Bulk Liquid)	N21-A,B	2	3	300#RF	To be provided with guide pipe of 3”.
Vacuum Protection by Nitrogen	N22	1	4	300#RF	
Multipoint Temperature Indicator for Bottom & Shell (Cool Down Temperature)	N23-A,B	2	6	300#RF	Location Details indicated on Sheet 5 of 5.
Vent below deck	N24	1	4 (1)	150#RF	
Vent above deck/N_2 inlet to outer tank	N25	1	4 (1)	150#RF	
N2 inlet to inner tank	N26	1	2	300#RF	To be provided with blind flange. To be extended up to bottom for puddle heating purpose.
PSV Return line to Tank	N27	1	6	300#RF	
Level Transmitter for Annular Space (Guided Wave Radar Type)	N28 A,B	2	6	150#RF	To be provided with guide pipe.

General Notes:

1. Corrosion Allowance:
   a) Shell &Bottom Plate: 1.5 mm (Inner & Outer tank)
   b) Roof & Deck: 1.0 mm

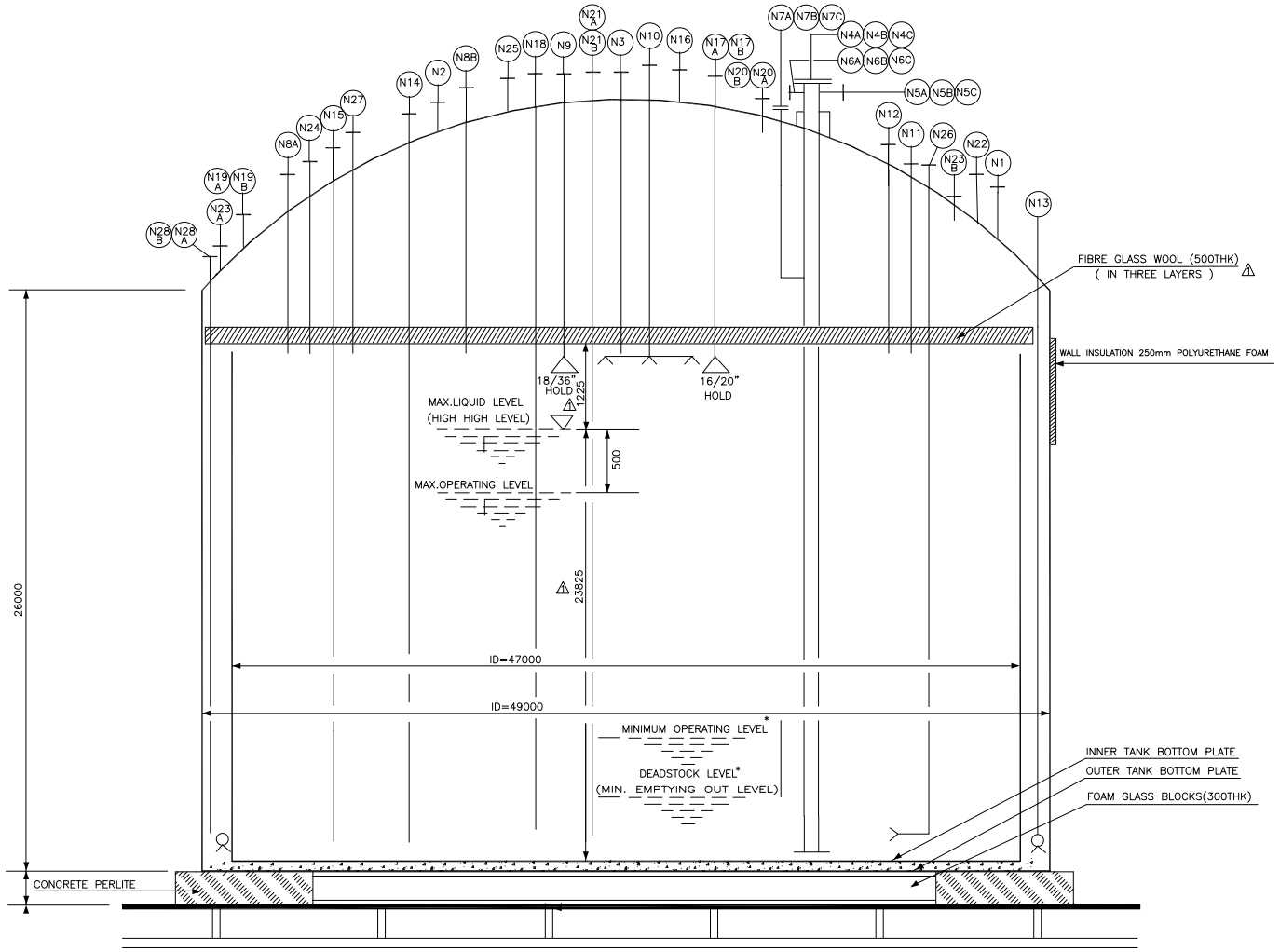
2. The storage tank should be suitable for storing Propane / Butane / LPG . 1

   The dimensions of storage tank have been specified for storing below mentioned quantity of Propane/Butane/LPG. 1

	Propane @ S.G. 0.5829	Butane @ S.G. 0.6088	LPG @ S.G. 0.6064
Bottom to Max. Liq. Level	24094 MT	25165 MT	25066 MT
Bottom to Max. Op. Level	23589 MT	24637 MT	24540 MT

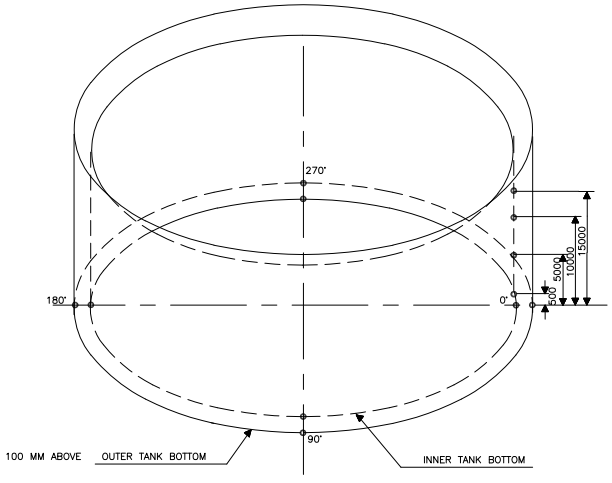
3. Minimum Liquid Level and Dead Stock of tank to be confirmed by Intank Pump Vendor
4. Operating Temperature of butane is -6.2^{0}C.
5. Insulation of all nozzles including portion of all pipe above suspended deck, to be provided. 1
6. Tank inner piping alongwith expansion loops for the same shall be taken care of.
7. **Insulation Details**: (a) Shell: 250mm Polyurethane Foam & covering of Galvalume Sheet 1 pre colour coated sheet.
   (b) Suspended Deck: 500mm 1 Fibre Glass Wool
   (c) Bottom: 300mm Foam Glass
   Maximum Thermal conductivity of insulations at 0^0 C is as follows:
   (i) Fibre Glass Wool = 0.035W/m-^{0}K
   (ii) Polyurethane Foam = 0.03 W/m-^{0}K
   (iii) Foam Glass = 0.048 W/m-^{0}K
8. Safety Valve details are as follows:
   (i) SET PRESSURE : 0.2Kg/cm2g,
   (ii) BACK PRESSURE : 0.1Kg/cm2g,
   (iii) OVER PRESSURE = 10%
   (iv) Maximum Allowable FLOW RATE = (Hold) Kg/hr
9. Maximum Liquid Pump Out Rate from Tank = 300 T/hr
10. Maximum Vapour Out Rate from Tank = (Hold) Kg/hr
11. Maximum Liquid Inlet from Jetty = 562.5 T/hr
12. Nozzle N4C & N5C to be provided with blind flange for future installation of pump.
13. All instruments nozzles size & rating should be review & confirmed by Instrument department.

PDIL NOIDA	TITLE: PROPANE/BUTANE STORAGE TANK PLANT: LPG TERMINAL CLIENT:	EM276-DD-9511-T201/202	
		DRAWING NO.	REV
		SHEET 5 OF 5	



T-201/202

NOTE- * TO BE PROVIDED BY IN TANK PUMP VENDOR



ORIENTATION OF TEMPERATURE ELEMENTS (N23A&B)

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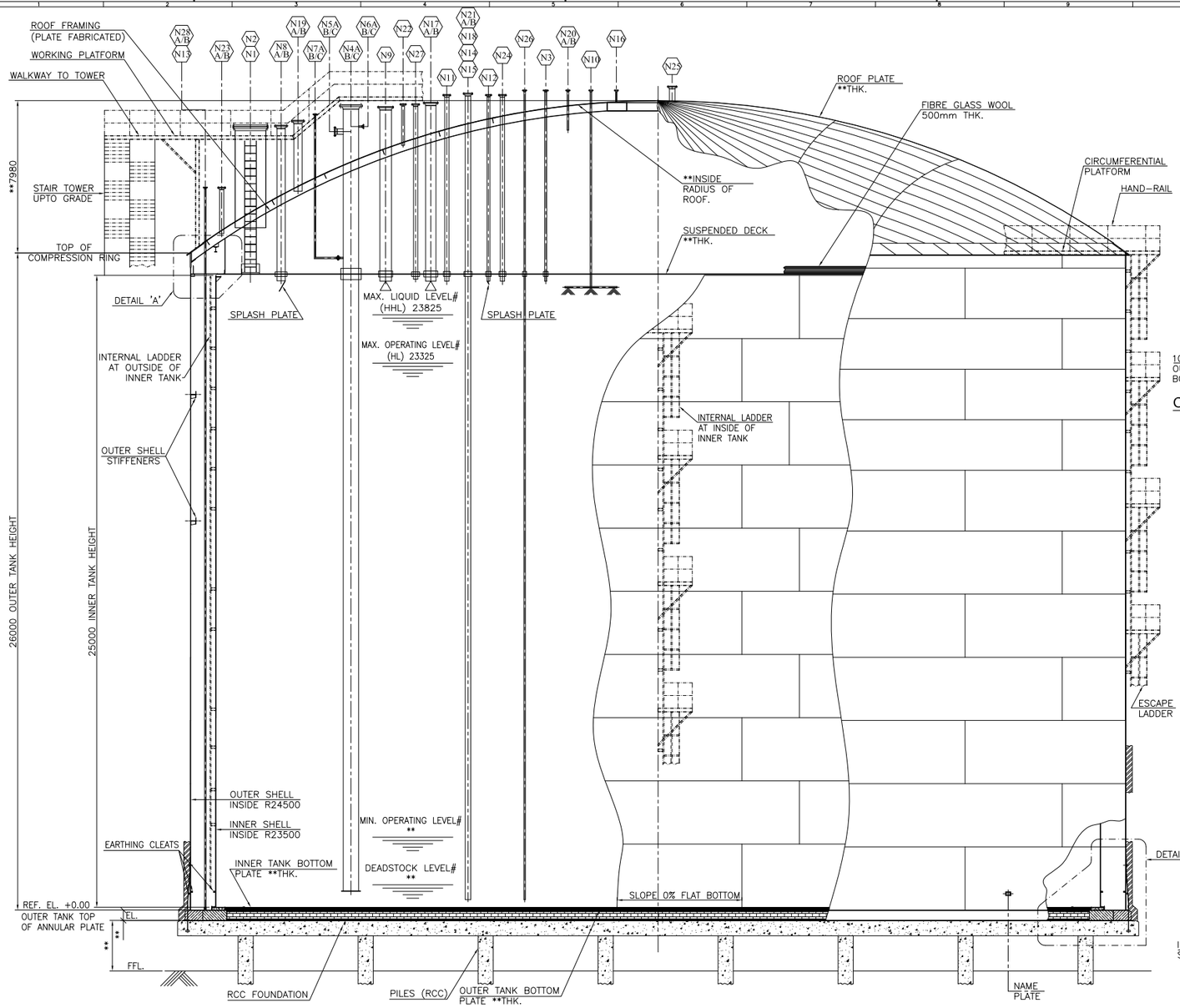
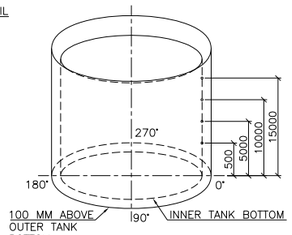
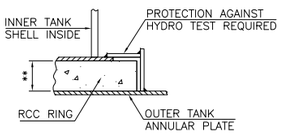


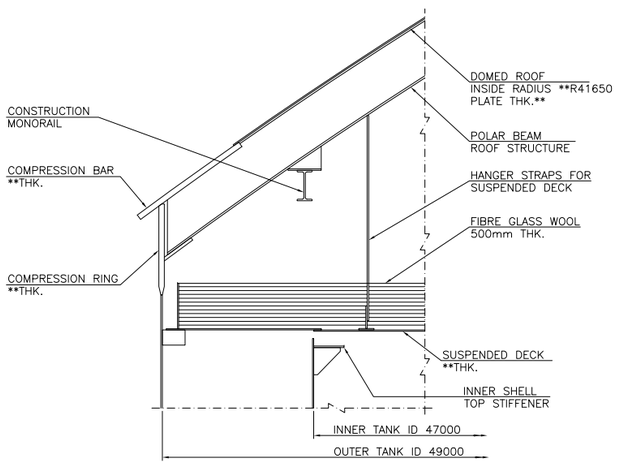
SECTIONAL ELEVATION



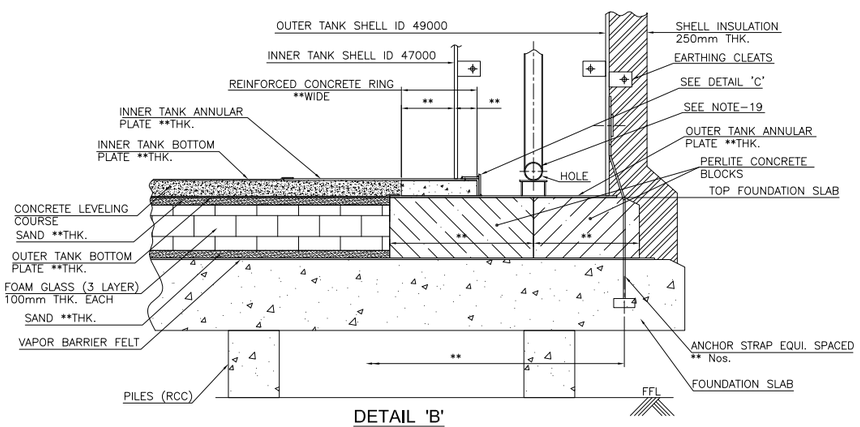
ORIENTATION OF TEMPERATURE ELEMENT N23-A/B



DETAIL 'C'



DETAIL 'A'



DETAIL 'B'

DESIGN CODE		
SHELL & BOTTOM	API 620 ANNEX. 'R' 12th EDITION 2013, ADD. 1 (LATEST)	
ROOF STRUCTURE	BASIC ENGINEERING + DIN 4119 (Ed. 1961)	
COMPRESSION RING & ROOF PLATE	API 620 12th EDITION 2013, ADD. 1 (LATEST)	
WIND DESIGN	IS 875 (PART-III) + API 620	
SEISMIC DESIGN	IS 1893 + API 620 ANNEX. 'L' & API 650	
MANUFACTURING CODE	API 620 12th EDITION 2013, ADD. 1 (LATEST)	

DESIGN DATA			
		INNER TANK	**OUTER TANK**
TYPE OF EQUIPMENT		DOUBLE WALL FULL CONTAINMENT, CUP IN TANK, INSULATED WITH SUSPENDED DECK	
QUANTITY		2 Nos.	
SERVICE		STORAGE OF LIQUID PROPANE / BUTANE / LPG	
PLANT / SECTION		PROPANE / BUTANE STORAGE	
TANK DIAMETER	mm	47000	49000
TANK HEIGHT	mm	25000	26000
ROOF RADIUS	mm	–	
DESIGN PRESSURE		LIQUID HEAD	LIQUID HEAD + 2000 mmWC
DESIGN VACUUM		–	−50 mm WC
DESIGN TEMPERATURE (MIN./MAX.)	°C	−45/55	−45/55
MDMT	°C	−45	
OPERATING PRESSURE		LIQUID HEAD	1200 mmWC
OPERATING TEMPERATURE	°C	−43.1	−43.1
CORROSION ALLOWANCE IN mm	SHELL	1.5	1.5
	BOTTOM	1.5	1.5
	DECK & ROOF	–	1
	ANCHOR STRAP	–	–
JOINT EFFIIENCY		1	1
PROCESS FLUID		PROPANE / BUTANE	
DESIGN SPECIFIC GRAVITY		PROPANE 0.5829 / BUTANE 0.6088 / LPG 0.6064	
CAPACITY	MT	24000	
DESIGN LIQUID LEVEL	mm	23825	**
MAX. LIQUID LEVEL	mm	23825	–
MIN. LIQUID LEVEL	mm	REFER NOTE-3 OF PROCESS DATA SHEET	–
DEADSTOCK LEVEL	mm	REFER NOTE-3 OF PROCESS DATA SHEET	–
MAX. OPERATING LEVEL	mm	23225	–
PUMP OUT RATE	T/hr.	300	
PUMP IN RATE (PROPANE/BUTANE)	m^3/hr.	**	
INSULATION THK. (COLD) & (REFER PROCESS DATA SHEET NOTE-7)		POLYURETHANE FOAM & COVERING OF GALVALUME SHEET PRE COLOUR COATED SHEET 250 mm THK. – OUTER SHELL	
		FIBRE GLASS WOOL 500 mm THK. – SUSPENDED DECK	
		FOAM GLASS 300 mm THK. – OUTER TANK BOTTOM	
		PERLITE CONCRETE BLOCK **THK. – OUTER TANK ANNULAR	
DESIGN WIND VELOCITY	m/s	50	
SEISMIC ZONE		ZONE-V	
LIVE LOAD	Kg/m^2	200	
PAINTING		NOTE-36	

TANK WEIGHT	
APPOX. WT. PER TANK	
EMPTY	** MT
OPERATING	** MT
HYDROTEST	** MT

TESTING AND INSPECTION	
TESTING OF TANK	API 620 12th EDITION 2013, ADD. 1 (2014)
INSPECTION OF TANK BY	THIRD PARTY/ CLIENT
TEST PRESSURE	INNER TANK WATER UP TO DESIGN LIQUID LEVEL + OUTER TANK FILLED WITH WATER 2500mmWC pneumatic pressure, NOTE 30
RADIOGRAPHY	REFER NOTE 32
IMPACT TESTING	API 620 12th EDITION 2013, ADD. 1 (LATEST)

**TO BE FURNISHED BY VENDOR

REV	DATE	DESCRIPTION	PPD.	CKD.	APPD.
0	03.07.19	ISSUED FOR ENQUIRY	AP	VB/AKG	GC

PROJECT: CRYOGENIC LPG STORAGE TERMINAL, KANDLA

REV 0 | SHEET 1 OF 2 | A1 | SCALE-: 1:1 | SHEET

TITLE: TENTATIVE OUTLINE SKETCH OF PROPANE / BUTANE STORAGE TANK (T-201 / 202)

DRG. No. EM0276-PNMV-DD-9511-T201/202

FILE: -

PDIL PROJECTS & DEVELOPMENT INDIA LTD. NOIDA

GENERAL NOTES-:

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
2. ** TO BE FURNISHED BY VENDOR.
3. TANK SHALL BE PROPERLY EARTHED.
4. FOR STORING OF LIQUID PROPANE/BUTANE/LPG (REFER PROCESS DATA SHEET NOTE-2).
5. MINIMUM & DEADSTOCK LIQUID LEVELS OF TANK TO BE CONFIRMED BY INTANK PUMP VENDOR.
6. OPERATING TEMPERATURE OF BUTANE IS -6.2 °C.
7. DELETED.
8. DELETED.
9. SAFETY VALVE DETAILS ARE AS FOLLOWS & REFER PROCESS DATA SHEET
   - SET PRESSURE : 0.2 Kg/cm²g
   - BACK PRESSURE : 0.1 Kg/cm²g
   - OVER PRESSURE : 10%
   - MAXIMUM ALLOWABLE FLOW RATE : (HOLD) Kg/hr
10. MAXIMUM VAPOUR OUT RATE FROM TANK : (HOLD) Kg/hr.

10A MAXIMUM LIQUID INLET FOM JETTY : 562.5 T/hr.

11. FOUNDATION SHALL BE INSPECTED BY THE TANK FABRICATOR TO ENSURE COMPLIANCE WITH TOLERANCE SPECIFIED IN API 620.
12. SPECIFIED THICKNESS FOR PLATES ARE WITHOUT UNDER TOLERANCE.
13. PROVISION FOR INSTALLATION OF AIR TERMINALS SHALL BE PROVIDED ON EACH TANK FOR THE AUGMENTATION OF THE LIGHTING PROTECTION AS PER OISD STD.-180 .

NOZZLE

14. ALL NOZZLE BOLTS TO STRADDLE TANK CENTERLINE, UNLESS OTHERWISE STATED.
15. FLANGES LESS THEN 24" NB IN SIZE SHALL BE AS PER ASME B16.5 (LATEST ED.) FLANGES. ABOVE 24" NB IN SIZE SHALL BE AS PER ASME B16.47 SERIES-B (LATEST ED.)
16. ALL NOZZLES UP TO 8" NB IN SIZE SHALL BE IN SEAMLESS CONDITION, NOZZLES GREATER THAN 8" NB IN SIZE SHALL BE PLATE FABRICATED.
17. INSULATION OF ALL NOZZLES INCLUDING PORTION OF ALL PIPE ABOVE SUSPENDED DECK, TO BE PROVIDED.
18. FOR NOZZLES N21 A/B AND N23 A/B, THE SUPPLIER SHALL GIVE THE DETAILS OF WALL CLEATS & WALL BRACKET, AS REQUIRED. THE ERECTION OF MULTI-POINT ASSEMBLY SHALL BE IN TANK VENDOR'S SCOPE.
19. NOZZLE N13 (OUTER TANK PURGE) TO BE PROVIDED WITH DISTRIBUTION PIPE ALONG WHOLE ANNULAR SPACE.
20. 6" NOZZLE & 4" PERFORATED STILL WELL WITH MOUNTING BRACKET, AT THE BOTTOM.
21. 8" NOZZLE & 8" PERFORATED STILL WELL WITH MOUNTING BRACKET, AT THE BOTTOM.

21A. TO BE EXTENDED UP TO BOTTOM FOR PUDDLE HEATING PURPOSE.

21B. 6" NOZZLE & 6" PERFORATED STILL WELL WITH MOUNTING BRACKET, AT THE BOTTOM.

MATERIALS

22. ALL LTCS MATERIAL SHALL BE FULLY KILLED, NORMALISED & IMPACT TESTED AS PER SUPPLEMENTARY REQUIREMENT S5 OF ASTM A20.
23. ALL PLATES FOR SHELL, BOTTOM & ROOF SHALL BE PROCURED IN UT TESTED CONDITION EXCEPT FOR SUSPENDED DECK.
24. ALL FORGINGS SHALL BE EXAMINED FOR SURFACE DEFECT BY MP/DP AFTER MACHINING.
25. COPPER & COPPER BASED ALLOYS SHALL NOT BE USED IN PROPANE / BUTANE STORAGE TANK.

FABRICATION

26. ALL SHARP CORNERS SHALL BE ROUNDED OFF WITH SMOOTH RADIUS OF 3mm MIN. UNLESS OTHERWISE STATED.
27. ALL SINGLE BUTT WELDED SEAMS WITHOUT BACKING STRIPS & ALL DOUBLE BUTT WELDED SEAMS SHALL BE CHIPPED BACK TO SOUND METAL & RE-WELDED FROM OTHER SIDE, UNLESS OTHERWISE SPECIFIED.
28. ALL ERECTION LUGS/CLEATS AND ANY OTHER TEMPORARY ATTACHMENTS SHALL BE OF THE SAME MATERIAL AS THE BASE MATERIAL TO WHICH THEY ARE WELDED AND WELDING SHALL BE PERFORMED ACCORDING TO THE QUALIFIED PROCEDURE.
29. ALL ERECTION LUGS SHALL BE REMOVED BEFORE HYDRO/PNEUMATIC TESTING. ALL OTHER TEMPORARY ATTACHMENTS MAY BE ALLOWED TO REMAIN ONLY AFTER ATTACHMENT WELD IS INSPECTED WITH MP EXAMINATION AS PER API-620.

INSPECTION & TESTING

30. INNER TANK SHELL BE HYDROTESTED WITH WATER FILLED UP TO OPERATING HEIGHT OF 23.825M & OUTER TANK SHALL BE FILLED WITH WATER LEVEL EQUALIZED ON INNER SHELL AND SHALL BE AIR TESTED TO A PRESSURE OF 2500mm WC & VACCUM TESTING OF ROOF & CONNECTION NOZZLE ROOF PAD AT 50mm WC .
31. ALL NOZZLE R.F PADS SHALL BE TESTED PNEUMATICALLY AT 0.5 Kg/cm²g PRESSURE WITH SOAP SOLUTION ON ATTACHMENT WELDS.
32. RADIOGRAPHY OF BUTT WELDED JOINTS :
   - ALL LONGITUDINAL & CIRCUMFERENTIAL BUTT WELD SEAMS, ON INNER & OUTER TANKS SHELL, SHALL BE 100% RADIOGRAPHED.
   - 25% OF THE BUTT-WELDED ANNULAR PLATE RADIAL JOINTS SHALL BE SPOT EXAMINED FOR A MIN. LENGTH OF 6 INCH. THE LOCATION SHALL BE UNDER TANK SHELL, AT THE OUTER EDGE OF THE JOINT.
   - ALL BUTT WELD JOINT OF INTERNAL NOZZLES IN VAPOUR ZONE SHALL BE 100% RADIOGRAPHED.
   - ALL NOZZLES NECK TO FLANGE BUTT WELDS SHALL BE 100% RADIOGRAPHED.
   - ALL REMAINING BUTT WELDED 'T' JOINTS SHALL BE SPOT RADIOGRAPHED.
   - DISHED END CAP FOR INNER AND OUTER SHELL.
33. VACCUM BOX TEST :
   - ALL FILLET WELDS ON BOTTOM PLATES (INNER & OUTER)
   - SHELL TO BOTTOM WELDS OF INNER AND OUTER TANK.
   - BOTTOM & ANNULAR PLATE JOINTS SHALL BE VACUUM BOX TESTED
34. MAGNETIC PARTICLE EXAMINATION SHALL BE CARRIED OUT ON THE FOLLOWING WELDMENTS
   BEFORE HYDROTESTING : WELD JOINTS B/T SHELL ANNULAR PLATE.
   - FINAL LAYER OF ALL BUTT WELDS.
   - ALL LAP JOINTS OF BOTTOM & ROOF PLATES.
   - ALL WELDS ON CONNECTIONS/ATTACHMENT AFTER STRESS RELIEVING, IF ANY.
   - ALL BUTT WELD JOINT WHICH ARE NOT RADIOGRAPHED SHALL BE EXAMINED INSIDE & OUTSIDE.
   - DISH END CAPS FOR INNER & OUTER SHALL MANHOLES.

   AFTER HYDROTESTING :
   - ANNULAR PLATE.
   - L-SEAMS OF BOTTOM MOST TWO COURSES.
   - COMPRESSION PLATE TO ROOF PLATE.
   - ALL JOINTS OF ANNULAR PLATE BOTTOM.
   - DISH END CAP FOR INNER & OUTER SHELL MANHOLES.

MATERIAL OF CONSTRUCTION

	INNER TANK	OUTER TANK
SHELL PLATE/COMPRESSION RING	ASTM 537 CL.1 + SA 20 S5	ASTM 537 CL.1 + SA 20 S5
SHELL STIFFENERS	ASTM 537 CL.1 + SA 20 S5	ASTM 537 CL.1 + SA 20 S5
BOTTOM PLATE	ASTM 537 CL.1 + SA 20 S5	ASTM 537 CL.1 + SA 20 S5
BOTTOM ANNULAR PLATE	ASTM 537 CL.1 + SA 20 S5	ASTM 537 CL.1 + SA 20 S5
SUSPENDED DECK PLATE	ASTM 537 CL.1 + SA 20 S5	ASTM 537 CL.1 + SA 20 S5
SUSPENDED DECK STIFFENERS	ASTM 537 CL.1 + SA 20 S5	ASTM 537 CL.1 + SA 20 S5
SUSPENDED DECK HANGERS	-	ASTM 537 CL.1 + SA 20 S5
DOME ROOF PLATE/COMPRESSION BAR	-	ASTM 537 CL.1 + SA 20 S5
DOME ROOF STRUCTURE		ASTM 537 CL.1 + SA 20 S5
FLANGE	ASTM A350 LF2	
PLATE FABRICATED FLANGE/COVER	ASTM A537 CL.1 + SA 20 S5	
NOZZLE NECK/INTERNAL PIPING	ASTM A333 Gr. 6	
NOZZLE NECK PLATE FABRICATED	ASTM 537 CL.1 + SA 20 S5	
GASKET	SPIRAL WOUND SS 304	SPIRAL WOUND SS 304
FITTINGS	ASTM A420 WPL-6	ASTM A420 WPL-6
BOLTS/NUTS (INTERNAL/EXTERNAL)	ASTM A320 L7/ ASTM A194 Gr. 4	ASTM A320 L7/ ASTM A194 Gr. 4
EARTHING CLEATS	SS 304	SS 304
NAME PLATE/SCREW FOR NAME PLATE	-	SS 304
NAME PLATE BRACKET	-	ASTM 537 CL.1 + SA 20 S5
INSULATION PROTECTION RING	-	ASTM 537 CL.1 + SA 20 S5
EXTERNAL LUGS	-	ASTM 537 CL.1 + SA 20 S5
ANCHOR STRAPS	-	SS 304
SATIRWAY/LADDER/PLATFORM/HANDRAIL	LTCS	CS

35. D.P. EXAMINATION
   - AFTER BACK GAUGING OF ROOT RUN.
   - ALL LAP JOINTS IN THE BOTTOM PLATE & ROOF.
   - RAFTER SPLICE JOINTS.
36. PAINTING.
   -OUTER SURFACE OF OUTER SHELL & ROOF : IN ADDITION TO MILL PAINT, 50-60MICRONS DFT OF ETHYLSILICATE INORGANIC ZINC RICH PRIMER TO BE APPLIED, SUCH THAT TOTAL PRIMER THK OF 75MICRONS IS ACHIEVED.
   -INTERMEDIATE COAT 75MICRONS DFT OF MI
   -FINISH COAT: TWO COAT OF TWO PACK POLY AMIDE CURED EPOXY PAINT OF 40MICRONS DFT PER COAT.
37. ALLOWABLE FOUNDATION SETTLEMENT = 25 mm BETWEEN CENTER OF TANK TO OUTSIDE RADIUS OF FOUNDATION.
38. PERMISSIBLE TOLERANCE IN ANCHOR STRAP.
   a) SETTING RADIUS +15 mm / -0 mm.
   b) PLUMB OF EMBEDDED PORTION + / -3 mm.
   c) CHORD DIMENSIONS + / -6 mm.
39. TANK INNER PIPING ALONG WITH EXPANSION LOOPS FOR THE SAME SHALL BE TAKEN CARE OF.

NOZZLE DATA

NOZZLE MARK	QTY. REQD	NOZZLE SIZE (NPS)	NOZZLE PROJ.	SERVICE	FLANGE (NOTE-12)				R.F PAD		REMARKS
					RATING	TYPE	FACE	SCH./THK.	OD (mm)	THK. (mm)	
N1	1	48"	-	ROOF MANHOLE	150#	WN	RF	**	**	**	WITH B/F & DAVIT
N2	1	36"	-	ROOF MANHOLE	150#	WN	RF	**	**	**	WITH B/F & DAVIT
N3	1	3"	-	SPARE NOZZLE	300#	WN	RF	**	**	**	WITH B/F
N4 (A,B,C)	3	24"	-	PUMP COLUMN	300#	WN	RF	**	**	**	4C WITH B/F
N5 (A,B,C)	3	10" (HOLD)	-	LIQUID OUTLET FROM PUMP DISCHARGE	300#	WN	RF	**	**	**	5C WITH B/F
N6 (A,B,C)	3	2"	-	COLUMN PURGE TOP	300#	WN	RF	**	**	**	WITH B/F
N7 (A,B,C)	3	2"	-	COLUMN PURGE BOTTOM	300#	WN	RF	**	**	**	WITH B/F
N8 (A,B)	2	16"	-	LIQUID INLET FROM JETTY	300#	WN	RF	**	**	**	NOTE-10A
N9	1	20"	-	VAPOUR OUTLET (COMPRESSOR SUCTION)	150#	WN	RF	**	**	**	-
N10	1	2"	-	TOP SPRAY	300#	WN	RF	**	**	**	-
N11	1	6"	-	VACCUM PROTECTION (FROM HEATER/CONDENSER)	300#	WN	RF	**	**	**	-
N12	1	10"	-	PUMP MIN. RECIRCULATION LINE (IN TANK PUMP & BOOSTER PUMP)	300#	WN	RF	**	**	**	WITH B/F & DAVIT
N13	1	2"	-	OUTER TANK PURGE	300#	WN	RF	**	**	**	NOTE-19
N14	1	6"	-	LEVEL TRANSMITTER (RADAR TYPE)	150#	WN	RF	**	**	**	NOTE-20
N15	1	8"	-	LEVEL TRANSMITTER (SERVO TYPE)	150#	WN	RF	**	**	**	NOTE-21
N16	1	2"	-	VENT TOP ON ROOF	300#	WN	RF	**	**	**	-
N17 (A,B)	2 (HOLD)	16" (HOLD)	-	SAFETY VALVE	150#	WN	RF	**	**	**	-
N18	1	8"	-	LEVEL TRANSMITTER (SERVO TYPE)	150#	WN	RF	**	**	**	NOTE-21
N19 (A,B)	2 (HOLD)	12" (HOLD)	-	BREATHER VALVE	150#	WN	RF	**	**	**	WITH B/F
N20 (A,B)	2	2"	-	PRESSURE TRANSMITTER	300#	WN	RF	**	**	**	-
N21 (A,B)	2	3"	-	MULTIPOINT TEMPERATURE ELEMENT (BULK LIQUID)	300#	WN	RF	**	**	**	NOTE-18
N22	1	4"	-	VACCUM PROTECTION BY NITROGEN	300#	WN	RF	**	**	**	-
N23 (A,B)	2	6"	-	MULTIPOINT TEMPERATURE INDICATOR FOR BOTTOM, SHELL (COOL DOWN TEMP.)	300#	WN	RF	**	**	**	NOTE-18
N24	1	4"	-	VENT BELOW DECK	150#	WN	RF	**	**	**	WITH B/F
N25	1	4"	-	VENT ABOVE DECK/ N2 INLET TO OUTER TANK	150#	WN	RF	**	**	**	WITH B/F
N26	1	2"	-	N2 INLET TO INNER TANK	300#	WN	RF	**	**	**	WITH B/F NOTE-21A
N27	1	6"	-	PSV RETURN LINE TO TANK	300#	WN	RF	**	**	**	-
N28 (A,B)	2	6"	-	LEVEL TRANSMITTER FOR ANNULAR SPACE (GUIDE WAVE RADAR TYPE)	150#	WN	RF	**	**	**	NOTE-21B

REFERENCE DOCUMENTS

SR. No.	DOCUMENT NUMBER	DOCUMENT TITLE
1	EM0276-DD-9511-T201/202 REV. 1	PDIL PROCESS DATA SHEET PROPANE / BUTANE STORAGE TANK

REV	DATE	DESCRIPTION	PPD.	CKD.	APPD.
0	03.07.19	ISSUED FOR ENQUIRY	AP	VB/AKG	GC

PROJECT: CRYOGENIC LPG STORAGE TERMINAL, KANDLA

REV 0 | SHEET 2 OF 2 | A1 | SCALE-: 1:1 | SHEET

TITLE: TENTATIVE OUTLINE SKETCH OF PROPANE / BUTANE STORAGE TANK (T-201 / 202)

DRG. No. EM0276-PNMV-DD-9511-T201/202

FILE: -

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