

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض						 شرکت تولید و ترانسپورت انرژی	
	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 HIRGAN ENERGY	
MECHANICAL DATA SHEETS FOR FIRE WATER STORAGE TANK								
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طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR FIRE WATER STORAGE TANK

نگهداشت و افزایش تولید میدان نفتی بینک

D03	JUL.2024	IFA	V.Amjadi	M.Fakharian	M.Sadeghian	
D02	MAR.2024	IFA	H.Ghadyani	M.Fakharian	S.Faramarzpour	
D01	NOV.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D00	JUN.2022	IFC	H.Adineh	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 1 CLIENT Doc. Number: F0Z-708848

- status:
- IDC: Inter-Discipline Check
 - IFC: Issued For Comment
 - IFA: Issued For Approval
 - AFD: Approved For Design
 - AFC: Approved For Construction
 - AFP: Approved For Purchase
 - AFQ: Approved For Quotation
 - IFI: Issued For Information
 - AB-R: As-Built for CLIENT Review
 - AB-A: As-Built –Approved



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General Notes

1. The asterisk * denotes information and/or confirmation required from vendor. the vendor shall be fully responsible for design and supply of the tank. the tank shall be supplied in accordance with project "Specification For Atmospheric Above Ground Welded Steel Tanks.
2. The VENDOR/BIDDER shall design and supply the storage tank in accordance with "Specification For Atmospheric Above Ground Welded Steel Tanks" , Document No.: "BK-GNRL-PEDCO-000-ME-SP-0002" and "Standard Detail Drawing For Storage Tanks",
3. Document No.: BK-GNRL-PEDCO-000-ME-DW-0002'. VENDOR/BIDDER shall provide completed datasheets with bid.
4. Tank height shall be checked based on Freeboard calculation by vendor.
5. The VENDOR/BIDDER shall be fully responsible for the complete mechanical design of the tank.
6. External and internal surface of tank shall be coated in accordance with BK-GNRL-PEDCO-000-PI-SP-0006 & BK-GNRL-PEDCO-000-PI-SP-0007 respectively.
7. All materials for pressure parts shall fulfill the impact test requirements of API-650 standard.
8. For standard detail of earth lug execution refer to the project "standard detail drawing for storage tanks Doc. NO. "BK-GNERL-PEDCO-000-ME-DW-0002" and provide minimum two earthing terminals and two cables per tank.
9. Manways shall be supplied complete with blind flange, external grab handles, internal grab handle and ladder rungs, nuts, bolting, gasket and proof load test davits. Davits shall be proof load tested on the vessel to 1.5 x Safe Working Load (SWL) and shall be marked accordingly.
10. Instrument and piping nozzle flanges shall be in accordance with ASME B 16.5.
11. Minimum width of shell courses plates shall be 1.5 m.
12. Deleted.
The angle of stairways to horizontal plane shall not exceed 45°.
13. If any imposed load (by nozzles or their connections) causes high local stress in any part of shell and roof, the subjected component shall be investigated according to appendix 'P' of API Std. 650.
14. Cone roof angle and roof plates joint shall be so selected that tank roof plate thickness will not be greater than 12mm.
15. All nozzles equal / greater than 2" shall have reinforcement pad.
16. All nozzles connection weld to tank shall be with full penetration.
17. Necessity of wind girder and stiffening ring will be finalized by vendor.
18. Allowable stress of anchor bolts shall not be greater than those are recommended in API 650 standard.
19. The requirement of internal and external cathodic protection shall be considered by VENDOR.
20. Seal materials shall have enough resistance against temperature changes, expansion & contraction, fluid weight changes and etc.
21. All dimensions are in "mm" unless otherwise specified.
22. Vent size and quantity shall be specified/verified by vendor according to API 2000.
23. Projection of Horizontal and Vertical nozzles are specified from tank centerline and top of top angle (roof line) respectively.
24. For standard detail of earth lug execution refer to the project "standard detail drawing for storage tanks DOC. NO. "BK-GNRL-PEDCO-000-ME-DW-0002" and provide minimum two earthing lugs and two cables per tank.
25. All nozzle loads shall not be less than specified values in the "Specification For Atmospheric Above Ground Welded Steel Tanks" , Document No.: "BK-GNRL-PEDCO-000-ME-SP-0002"



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GENERAL INFORMATION (TO BE COMPLETED BY PURCHASER)

1	1. PURCHASER / AGENT: <i>NISOC</i>									
2	ADDRESS:									
3	CITY: <i>Bushehr</i>		PROV.:		POSTAL CODE:		PHONE:			
4	2. USER:									
5	3. ERECTION SITE:		NAME OF PLANT: <i>Binak</i>							
6	LOCATION: <i>BINAK, 20 km NORTHWEST of GENAVEH CITY</i>									
7	4. TANK NO.: <i>TK-2301 A / B</i>		NOMINAL CAPACITY: <i>1260</i>		m ³		NET WORKING CAPACITY: <i>1,040.00</i>		m ³	
8	QTY. REQ'D: <i>2 Sets</i>		OVERFILL PROTECTION (API RP 2350):							
9	5. PUMPING RATES:		IN		m ³ /hr		OUT		m ³ /hr	
10	6. MIN./MAX. OPERATING TEMPERATURE: <i>AMB.</i>									
11	7. PRODUCT STORED: <i>Fire Water Tank</i>									
12	DESIGN TEMPERATURE: <i>85</i>		°C		DESIGN SPEC. GRAVITY: <i>1</i>		AT <i>163</i>		°C	
13	8. CORROSION ALLOWANCE:		°C		VAPOR PRESSURE:		kPa			
14	SHELL:		<i>1.6</i>		mm		ROOF:		<i>1.6</i> mm	
15	BOTTOM:		<i>1.6</i>		mm		STRUCTURALS:		<i>-</i> mm	
16	9. SHELL DESIGN: BASIC STANDARD API 650		<i>YES</i>		APPENDIX A		<i>NO</i>		APPENDIX F <i>NO</i>	
17	DESIGN PRESSURE :		<i>ATM+Full water +50 mm H₂O</i>		kPa (g)		IPS-G-ME-100 <i>YES</i>		IPS-G-ME-110 <i>NO</i>	
18	10. ROOF DESIGN: BASIC STANDARD API 650		<i>YES</i>		APPENDIX G (ALUMINUM DOME)		<i>NO</i>		IPS-G-ME-110 <i>NO</i>	
19	FRANGIBLE ROOF JOINT		<i>NO</i>							
20	11. ROOF DESIGN INFORMATION:									
21	UNIFORM LIVE LOAD:		<i>1.2</i>		kPa (g)					
22	SPECIAL LOADS (PROVIDE SKETCH):				kPa (g)					
23	INSULATION LOAD:		<i>-</i>		kPa (g)					
24	MAXIMUM DESIGN ROOF TEMPERATURE:				°C					
25	GASES IN THE VAPOUR SPACE:									
26										
27										
28	12. EARTHQUAKE DESIGN :		(APPENDIX E)		ROOF TIE RODS (5.10.4.5) :					
29	SEISMIC CODE:		<i>(ASCE7-10)</i>		IMPORTANCE FACTOR		<i>1.25</i>		<i>Fa : 1</i>	
30	SITE CLASS:		<i>D</i>						<i>Fv : 1.33</i>	
31	13. WIND LOAD:		WIND CODE:		<i>(ASCE7-10)</i>				<i>Ss : 1.125</i>	
32	VELOCITY:		<i>232</i>		km/hr		(DIRECTION: NW TO SE)		<i>S1 : 0.46</i>	
33	PROVIDE INTERMEDIATE WIND GIRDER (5.9.7) :									
34	14. ENVIRONMENTAL EFFECTS:									
35	MAXIMUM RAINFALL				mm/year		TOTAL SNOW ACCUMULATION		mm	
36										
37	15. SIZE RESTRICTIONS:									
38	MAXIMUM DIAMETER		<i>13000</i>		mm		MAXIMUM HEIGHT		<i>9500</i> mm	
39	16. FOUNDATION TYPE:		CONCRETE RINGWALL		<i>YES</i>					
40	EARTH						OTHER			
41	17. APPLICABLE STANDARDS:									
42	<i>API 650</i>		&		<i>IPS-G-ME-100 (1)</i>					
43	17. SERVICE TYPE									
44	SOUR		<i>NO</i>		NON-SOUR		<i>NO</i>			
45	LETHAL				NON-LETHAL					
46	18. NACE REQUIREMENT									
47	SSC		<i>NO</i>		HIC		<i>NO</i>			
48	REMARKS:									
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CONSTRUCTION DETAILS (TO BE COMPLETED BY MANUFACTURER AND/OR PURCHASER)

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1	1. MANUFACTURER									
2	ADDRESS:									
3	CITY:		PROV.:			POSTAL CODE:			PHONE:	
4	SERIAL NUMBER:									
5	2. FABRICATOR:									
6	ADDRESS:									
7	CITY:		PROV.:			POSTAL CODE:			PHONE:	
8	SERIAL NUMBER:									
9	3. MATERIAL SPECIFICATIONS:									
10	SHELL :		A-283 GR.C			PIPE :		A-106 GR.B		
11	ROOF :		A-283 GR.C			FLANGE :		A-105		
12	BOTTOM / ANNULAR BOTTOM :		A-283 GR.C			EXT. BOLT / NUT :		A-193 GR.B7 / A-194 GR.2H		
13	FIXED INTERNALS :		C.S.			INT. BOLT / NUT :		S.S.		
14	REMOVABLE INTERNALS :		-							
15	STRUCTURALS :		A-36							
16	4. NO. OF SHELL COURSES									
17	5. PLATE WIDTHS AND THICKNESSES (INCLUDING CORROSION ALLOWANCE) : (NOTE 11 & NOTE 1)									
18	1.	2000 / VTS	4.	2000 / VTS	7.		10.			
19	2.	2000 / VTS	5.	1500 / VTS	8.		11.			
20	3.	2000 / VTS	6.		9.		12.			
21										
22	6. TANK BOTTOM:	PLATE THICKNESS	VTS	mm	(Note 1)	YES	LAP	BUTT	SEAMS	
23		SLOPE	1 : 120	mm per meter			TO YES	FROM	CENTER	
24	7. MINIMUM WIDTH AND THICKNESS OF BOTTOM ANNULAR PLATES (5.5) :	658 / VTS		mm	(Note 1)					
25	8. ROOF-TO SHELL DETAIL (FIGURE F-2 'API-650') :	Detail B		(Note 14)						
26	9. INTERMEDIATE WIND GIRDER (Note 18)	NO		TOP WIND GIRDER FOR USE AS WALKWAY :	NO					
27										
28	10. ROOF TYPE :	CONE (Supported by Rafter)		DOME	SPHERE					
29		SLOPE OR RADIUS :		1 : 10	(Note 14)					
30	11. ROOF PLATE: THICKNESS	(Note 1)	VTS	mm	YES LAP	BUTT	JOINT			
31	12. PAINT:	(Note 6)								
32	SHELL :	EXTERIOR		YES	INTERIOR	YES				
33	SURFACE PREPARATION									
34	BOTTOM :	UNDERSIDE		YES	INTERIOR	YES				
35	SURFACE PREPARATION									
36	ROOF :	EXTERIOR			INTERIOR	YES				
37	SURFACE PREPARATION									
38	STRUCTURAL STEEL :	EXTERIOR		YES	INTERIOR	-				
39	SPECIFICATION :									
40	13. TANK BOTTOM COATING:	INTERIOR		YES	MATERIAL					
41	APPLICATION SPECIFICATION									
42	14. INSPECTION BY:	SHOP		FILED						
43	15. WELD EXAMINATION:	Radiograph (extent of radiography as per IPS-G-ME-100)								
44		Supplementary liquid penetrant or ultrasonic								
45	JOINT EFFICIENCY:	As Per Code								
46	16. FILMS :	PROPERTY OF								
47	17. LEAK TESTING:									
48		BOTTOM	YES	ROOF	YES	SHELL	YES			
49	18. MILL TEST REPORTS:	REQUIRED								
50		PLATE	STRUCTURAL SHAPES							
51	19. PURCHASER'S REFERENCE DRAWING :									
52	20. TANK SIZE :	DIAMETER		13000	mm	HEIGHT	9500	mm		
53	DATE OF STANDARD 650 EDITION/REVISION :	12th Edition Aug 2018								
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SHELL NOZZLES LIST (Notes 1,15,16, 22)

MARK	QTY.	DESCRIPTION	PIPE			FLANGE			PROJ. (mm)	REINF.		REMARKS
			Size(in.)	Thk.	Sch.	Type	Rate.	Face		Thk.	O.D.	
A1	1	Inlet	3			WN	150 #	RF	6686			
B1	1	Outlet	12			WN	150 #	RF	6736			
TL	1	Test Line	12			WN	150 #	RF	6736			
A3	1	Inlet	3			WN	150 #	RF	6736			
LS	1	Level Switch	2			WN	300 #	RF	6658			
B2	1	Over Flow	3			WN	150 #	RF	6686			
D	1	Drain	4			WN	150 #	RF	6680			
M1/2	2	Manhole	24			WN	150 #	RF	6808			
LT1	1	Level Transmitter	2			WN	300 #	RF	6658			

ROOF NOZZLES LIST (Notes 1, 23)

MARK	QTY.	DESCRIPTION	PIPE			FLANGE			PROJ. (mm)	REINF.		REMARKS
			Size(in.)	Thk.	Sch.	Type	Rate.	Face		Thk.	O.D.	
V	1	Vent	8			WN	150 #	RF	SEE DWG			
L1	1	Level Indicator	6			WN	300 #	RF	SEE DWG			
M3	1	Roof Manhole	24			WN	150 #	RF	SEE DWG			
LT2	1	Level Transmitter	2			WN	300 #	RF	SEE DWG			
A2	1	Pressure Relief Valve	10			WN	150#	RF	SEE DWG			

TOTAL WEIGHT (kg) (Note 26)

FABRICATION	OPERATION	HYDROSTATIC TEST	REMOVABLE STANDARD	LADDER & PLATFORM
45283	1085283	1305283	200	1500

LOADING (Note 26)

WINDSHEAR (KG)	WIND OVERTURNING MOMENT (KG.M)	EARTHQUAKE SHEAR (KG)	EARTHQUAKE OVERTURNING MOMENT(Ring Wall/Slab) (KG.M)
11272.3	73149.1	117511.6	375446.9
			584605.7



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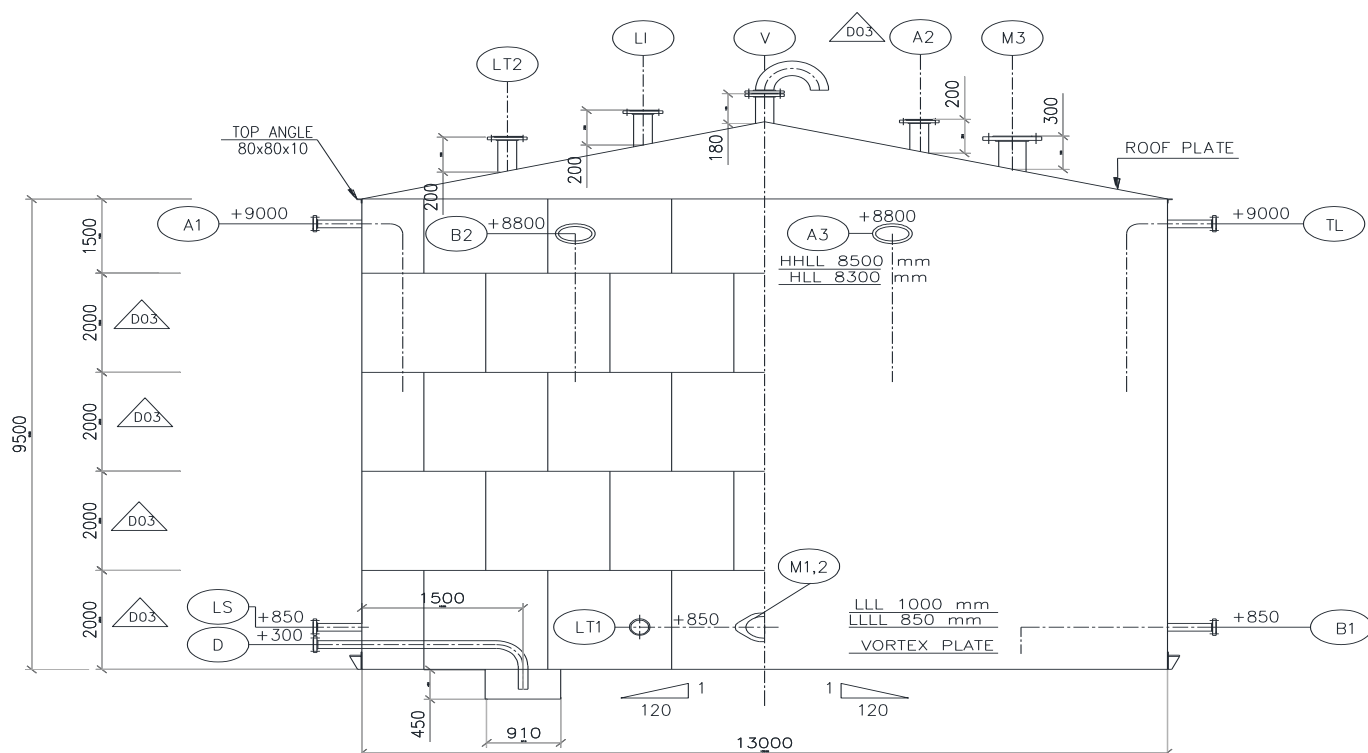
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GENERAL ARRANGEMENT VIEW



ELEVATION VIEW

NOZZLES ELEVATION WILL BE FINALIZED LATER.

