طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR FIRE WATER STORAGE TANK

نگهداشت و افزایش تولید میدان نفتی بینک

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: 2 **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

REVISION RECORD SHEET

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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-GNRAL-PEDCO-000-ME-SP-0002" and "Standard Detail Drawing For Storage Tanks",
3. Document No.: BK-GNRAL-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-GNRAL-PEDCO-000-PI-SP-0006 & BK-GNRAL-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. Stairways shall meet the requirements of for IPS-G-ME-100 (Sec. 3.8.10), IPS-D-CE-141 & IPS-D-CE-142 and IPS-E-SF-400. 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-GNRAL-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" , Welded Steel Tanks" , Document No.: "BK-GNRAL-PEDCO-000-ME-SP-0002"
26. Will be Finalized later.

Rev.

GENERAL INFORMATION (TO BE COMPLETED BY PURCHASER)

1. PURCHASER / AGENT: *NISOC*
   ADDRESS:
   CITY: *Bushehr* PROV.: POSTAL CODE: PHONE:
2. USER:
3. ERECTION SITE: NAME OF PLANT: Binak
   LOCATION: *BINAK, 20 km NORTHWEST of GENAVEH CITY*
4. TANK NO. *TK-2301 A / B* NOMINAL CAPACITY: *1260* m^3 NET WORKING CAPACITY: *1,040.00* m^3
   QTY. REQ'D: *2 Sets* OVERFILL PROTECTION (API RP 2350): m
5. PUMPING RATES: IN *(Note(26)* m^3/hr OUT *(Note(26)* m^3/hr
6. MIN./MAX. OPERATING TEMPERATURE: *AMB.* °C
7. PRODUCT STORED: *Fire Water Tank* DESIGN SPEC. GRAVITY: *1* AT *163* °C
   DESIGN TEMPERATURE: *85* °C VAPOR PRESSURE: kPa
8. CORROSION ALLOWANCE:
   SHELL: *1.6* mm ROOF: *1.6* mm
   BOTTOM: *1.6* mm STRUCTURALS: *-* mm
9. SHELL DESIGN: BASIC STANDARD API 650 *YES* APPENDIX A *YES* APPENDIX F *YES* IPS-G-ME-100 *YES* IPS-G-ME-110
   DESIGN PRESSURE : ATM+Full water kPa (g)
10. ROOF DESIGN:BASIC STANDARD API 650 *YES* IPS-G-ME-100 *YES* IPS-G-ME-110 *NO*
    APPENDIX G (ALUMINUM DOME) *NO*
    FRANGIBLE ROOF JOINT *NO*
11. ROOF DESIGN INFORMATION:
    UNIFORM LIVE LOAD: *1.2* kPa (g)
    SPECIAL LOADS (PROVIDE SKETCH): kPa (g)
    INSULATION LOAD: *-* kPa (g)
    MAXIMUM DESIGN ROOF TEMPERATURE: °C
    GASES IN THE VAPOUR SPACE:
12. EARTHQUAKE DESIGN : (APPENDIX E) ROOF TIE RODS (5.10.4.5) :
    SEISMIC ZONE: *(ASCE7-10)* IMPORTANCE FACTOR *1.25* *Fa : 1* *Fv : 1.5*
    SITE CLASS: *D* SITE COEFFICIENT: *1.2* *Ss : 1.25* *S1 : 0.58*
13. WIND LOAD:
    VELOCITY: 120 km/hr (DIRECTION: NW TO SE)
    PROVIDE INTERMEDIATE WIND GIRDER (5.9.7) :
14. ENVIRONMENTAL EFFECTS:
    MAXIMUM RAINFALL mm/year TOTAL SNOW ACCUMULATION mm
15. SIZE RESTRICTIONS:
    MAXIMUM DIAMETER *13000* mm MAXIMUM HEIGHT *9500* mm
16. FOUNDATION TYPE: CONCRETE RINGWALL YES
    EARTH OTHER
17. APPLICABLE STANDARDS:
    API 650 & *IPS-G-ME-100 (1)*
17. SERVICE TYPE
    SOUR *NO* NON-SOUR *NO*
    LETHAL NON-LETHAL
18. NACE REQUIREMENT
    SSC *NO* HIC *NO*

REMARKS:

Rev.

CONSTRUCTION DETAILS (TO BE COMPLETED BY MANUFACTURER AND/OR PURCHASER)

1. MANUFACTURER
   ADDRESS:
   CITY: PROV.: POSTAL CODE: PHONE:
SERIAL NUMBER:
2. FABRICATOR:
   ADDRESS:
   CITY: PROV.: POSTAL CODE: PHONE:
SERIAL NUMBER:
3. MATERIAL SPECIFICATIONS:

SHELL :	*A-283 GR.C*	PIPE :	*A-106 GR.B*
ROOF :	*A-283 GR.C*	FLANGE :	*A-105*
BOTTOM / ANNULAR BOTTOM :	*A-283 GR.C*	EXT. BOLT / NUT :	*A-193 GR.B7 / A-194 GR.2H*
FIXED INTERNALS :	*C.S.*	INT. BOLT / NUT :	*S.S.*
REMOVABLE INTERNALS :	-		
STRUCTURALS :	*A-36*		

4. NO. OF SHELL COURSES
5. PLATE WIDTHS AND THICKNESSES (INCLUDING CORROSION ALLOWANCE) *(NOTE 11)*

1.	*1500*	4.	*1500*	7.	*1500*	10.	
2.	*1500*	5.	*1500*	8.		11.	
3.	*1500*	6.	*500*	9.		12.	

6. TANK BOTTOM: PLATE THICKNESS mm *(Note 1)* *YES* LAP BUTT SEAMS
   SLOPE *1 :120* mm per meter TO *YES* FROM CENTER
7. MINIMUM WIDTH AND THICKNESS OF BOTTOM ANNULAR PLATES (5.5) : - mm *(Note 1)*
8. ROOF-TO SHELL DETAIL (FIGURE F-2 'API-650') : *Detail B* *(Note 14)*
9. INTERMEDIATE WIND GIRDER *(Note 18)* NO TOP WIND GIRDER FOR USE AS WALKWAY :
10. ROOF TYPE : *YES* CONE (Supported) DOME SPHERE
    SLOPE OR RADIUS : 1 : 5 *(Note 14)*
11. ROOF PLATE: THICKNESS *(Note 1)* mm *YES* LAP BUTT JOINT
12. PAINT: *(Note 6)*

SHELL :	EXTERIOR	*YES*	INTERIOR	*YES*	
	SURFACE PREPARATION				
BOTTOM :	UNDERSIDE	*YES*	INTERIOR	*YES*	
	SURFACE PREPARATION				
ROOF :	EXTERIOR		INTERIOR	*YES*	
	SURFACE PREPARATION				
STRUCTURAL STEEL :	EXTERIOR	*YES*	INTERIOR	-	
	SPECIFICATION :				

13. TANK BOTTOM COATING: INTERIOR *YES* MATERIAL
    APPLICATION SPECIFICATION
14. INSPECTION BY: SHOP FILED
15. WELD EXAMINATION: *Radiograph (extent of radiography as per IPS-G-ME-100)*
    Supplementary liquid penetrant or ultrasonic
    JOINT EFFICIENCY: *As Per Code*
16. FILMS : PROPERTY OF
17. LEAK TESTING:
    BOTTOM *YES* ROOF *YES* SHELL *YES*
18. MILL TEST REPORTS: REQUIRED
    PLATE STRUCTURAL SHAPES
19. PURCHASER'S REFERENCE DRAWING :
20. TANK SIZE : DIAMETER *13000* mm HEIGHT *9500* mm

DATE OF STANDARD 650 EDITION/REVISION : *12th Edition Aug 2018*

APPURTENANCES (TO BE COMPLETED BY MANUFACTURER AND/OR PURCHASER)

1. STAIRWAY STYLE *(Note 12)*	*YES*	CIRCULAR	STRAIGHT	ANGLE TO HORIZONTAL		DEGREES
		ROLLING LADDER				
2. WALKWAY:		WIDTH	mm	LENGTH		mm
3. DRAW -OFF SUMP:	*YES*	STANDARD	SPECIAL			
4. BOLTED DOOR SHEET :	*NO*		(APPENDIX A TANKS ONLY)	RAISED	FLUSH	
5. SCAFFOLD HITCH						
6. INTERNAL PIPING:		SWING LINE	SUCTION LINE			
		HEATING COIL SURFACE AREA		m^2		
7. ROOF DRAIN:		HOSE	JOINTED			
		SIPHON				
8. NO. AND SIZE OF SHELL MANHOLES	*2 x 24"*					
9. NO. AND SIZE OF ROOF MANHOLES	*1 x 24"*					

SHELL NOZZLES LIST *(Notes 1,15,16, 22)*

MARK	QTY.	DESCRIPTION	PIPE			FLANGE			PROJ.	REINF.		REMARKS
			Size(in.)	Thk.	Sch.	Type	Rate.	Face	(mm)	Thk.	O.D.	
A	*1*	*Inlet*	*3*			*WN*	*150 #*	*RF*	*6650*			
B1	*1*	*Outlet*	*12*			*WN*	*150 #*	*RF*	*6750*			
TL	*1*	*Test Line*	*10*			*WN*	*150 #*	*RF*	*6750*			
PSV	*1*	*Pressure Safty Valve*	*10*			*WN*	*150 #*	*RF*	*6750*			
LS	*2*	*Level Switch*	*2*			*WN*	*300 #*	*RF*	*6650*			
B2	*1*	*Over Flow*	*3*			*WN*	*150 #*	*RF*	*6650*			
D	*1*	*Drain*	*3*			*WN*	*150 #*	*RF*	*6650*			
M1	*2*	*Manhole*	*24*			*WN*	*150 #*	*RF*	*6800*			
LT	*2*	*Level Transmitter*	*2*			*WN*	*300 #*	*RF*	*6650*			

ROOF NOZZLES LIST *(Notes 1, 23)*

MARK	QTY.	DESCRIPTION	PIPE			FLANGE			PROJ.	REINF.		REMARKS
			Size(in.)	Thk.	Sch.	Type	Rate.	Face	(mm)	Thk.	O.D.	
V	*1*	*Vent*	*8*			*WN*	*150 #*	*RF*	*SEE DWG*			
L1	*1*	*Level Indicator*	*2*			*WN*	*300 #*	*RF*	*SEE DWG*			
M2	*1*	*Roof Manhole*	*24*			*WN*	*150 #*	*RF*	*SEE DWG*			

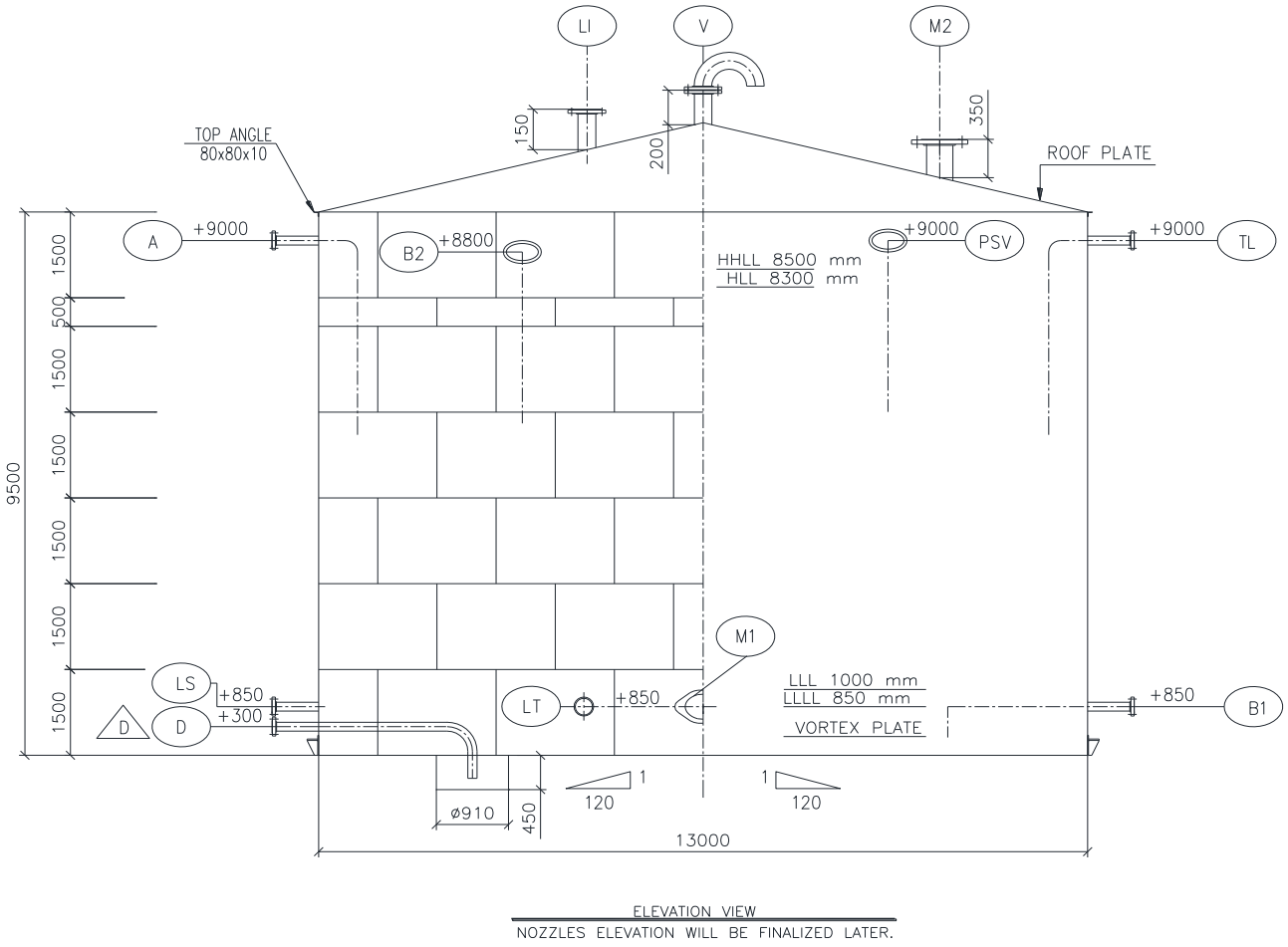
TOTAL WEIGHT (kg) *(Note 26)*

FABRICATION	OPERATION	HYDROSTATIC TEST	REMOVABLE STANDARD	LADDER & PLATFORM

LOADING *(Note 26)*

WINDSHEAR (KG)	WIND OVERTURNING MOMENT (KG.M)	EARTHQUAKE SHEAR (KG)	EARTHQUAKE OVERTURNING MOMENT (KG.M)

GENERAL ARRANGEMENT VIEW



ELEVATION VIEW

NOZZLES ELEVATION WILL BE FINALIZED LATER.