ZOA
from relief to recovery

Water yard Bill of Quantity for Graiwed Basham village, Dar Alsalam Locality-North Darfur State

Item	Description	Quantity	Unit	Unit Price	Total
1	Mobilization of equipment, personnel and construction material to project site.	1	Job		
2	Provide and installation of ASTM pipe 6.5/8 inch inch's (2 m length) one m under ground with mass concrete 0.5 m x 0.5 m , at the top of the well to hanging the pump	12	ML		
3	Supply & Installation of (H.D.P.E) pipe 2 inch" diameter of 10 bar working pressure include all necessary fittings. Digging and refilling trenches as specified (40-cm width by 50-cm depth) in addition to backfilling with Sand as per ZOA engineer instruction , The connection from well to water tank and from water tank to car filling ,disruptions point and animal troughs.	91	ML		
4	Construction of Guard. Room 3m×3m and 3meter Height the front side is 2.75m height at the backside. And should have 2x2m window made from expanded metal and zinc sheet. The room should have steel door .the floor should be made by plain concrete 1:3:6 with 15cm depth.	1	Job		
5	Construction of distribution points with 8 taps 1.5 inch as per attached drawing and specifications	2	N		
6	Raising Cart filling point with 2inch pipe with control valve	2	N		
7	1.5-meter height fence made of galvanized steel chain-link wire(Gabion) fixed on 1.5 meter height (1.5 m above ground level and 0.5 m below ground level ,2 inch steel pipe, spaced at 2 meters distances with 2 mm galvanized wire (at top, bottom and the middle), the 2 inch steel pipes (posts) will be erected in a 50 * 50 * 60 cm plain concrete base, around the water yard, 1,5 inch angled ion will be welded at the top and the bottom the of galvanized steel chain-link between the steel pipes, .Fence corners should be supported with 2-inch strainer-angled ion. include 2 Meter gate with 2.5inch steel angle for frame and steel bars (12mm) as mish with 15 cm square spaces . Note:- (All fence diameter should be supported with 12mm steel bars with at least three rows as per site engineer instruction).	200	ML		
8	Installation of water flow-meter at elevated tank , the job is only for insulation (skilled labor) in addition to protection box as ZOA will provide water meter in (Fasher town).	1	No		
9	Embankments for drainage with public stand taps and cart filling point and inside water yard. This with selected graded soil with wet compaction not less than 85% density and as per supervisor instruction	30	M3		
				Sub Total	
				VAT 17%	
				TOTAL	

* All Valves should be European made and agreed sample before construction
* Any water offtake should be controlled by Valve.

Item	Description	Unit	Quantity	Unit Price	Total
1	**Pump with Solar system**				

1.1	Supply and installation of solar Pumping Unit 2 inch of discharge average 22 m3/hr. and head of 140 m , and pump setting depth of 60 m including the pipes, and solar supply system of 30 HP 22 KW including the supporting foundation using heavy square steel pipe column 8 x4 and angle of 2.5 inch and connection accessories, and footing of 50X50X50 plain concrete . Cable around 1000ML and 16mm .with Dual system to enable operating the Pump with DC (Solar power) as well. All Solar system should be with full details ,production data and Guarantee document. Including raising pipe for raising with galvanized steel 3inch with 3meter length and with 45 pipe for 135Meter length for raising .	Set	1		
2	**Fence & Gate**				
2.1	1.5-meter height fence made of galvanized steel chain-link wire(Gabion) fixed on 1.5 meter height (1.5 m above ground level and 0.5 m below ground level ,2 inch 3mm thickness steel angle, spaced at 2 meters distances (of 3 mm galvanized wire 5cmX5cm spacing) and 3 lines from 12mm steel bar(at top, bottom and the middle), the 2 inch steel angle (posts) will be erected in a 50 * 50 * 60 cm plain concrete base, around the water yard .Fence corners should be supported with 2-inch strainer-angled iron. include 2 Meter gate with I steel 14cmX7cm & 8X4 square steel pipe steel angle for frame and steel bars (12mm) as mish with 15 cm squares spaces .	ML	80		
				Sub Total	
				VAT 17%	
				Total	

Borehole information
COORDINATE WELL 1= N: 13.26414 E: 25.46607
TOTAL DEPTH = 183 M
Pump Setting DEPTH =125M
QUANTITY OF WATER = 22 M/3/H
SUBMERSIBLE PUMP= 22 KW = 30ph- 140 meter head
Electric cable= 1000m length-16mm
CASING DIAMETER= 8 inch
ENGINE Power= 33KW minimum

Note: Solar fence inside water yard itself.

Item	Description	Unit	Quantity	Unit Price	Total
1	**Elevated Water Tank**				
1.1	Supply & Installation of steel elevated water storage tank with capacity of 50 cubic meter , mounted on a 12-meters Height steel tower and resting on reinforced concrete foundation, complete with inside and outside ladder and 1m balcony. Tank Materials Shape: Cylindrical Bottom: Mild steel plates 6-mm thickness. Shell Mild steel plates 4.5-mm thickness. Roof: Mild steel plates 3-mm thickness. Roof structure Mild steel angles 2" X 2" X ¼" Footpath: Mild steel plate 3-mm thickness. Side ladder: Mild steel angles 2" X 2" X ¼", round bars 5/8". Safety cage: Mild steel angles 2" X 2" X ¼". Manhole: Mild steel plates 3-mm thickness + hinges, bolts & nuts. Pointer: Mild steel angles 1" + string wire rope + clamps & floaters. Paint: From inside & outside with non-poisonous bituminous paint. Tower materials: Base plates: 12 mm. Top plates: 2 mm. Connection plates 06 mm. Stanch ions:RS joints 20 cm or angles 4 – 3 inch and 8-12 mm thickness. Main beam: RS joints 20 cm . Grill: RS joints 14 cm. Wind bracing: Angles 2" X 2" X ¼". Ladder: Angles 2" X 2" X ¼". Ladder: Round bars 5/8". Safety cage: Angles 1" + bolts & nuts. Paint: Black paint. " Anchor bolts: ¾" X 6"	Job	1		
2	**Operation Room:**				

2.1	Construction of Guard. Room 3m×3m and 3m Height the front side is 2.75m height at the backside. And should have 1x1m window made from expanded metal and zinc sheet with 2.5 inches steel angle frame. The room should have steel door of 2mX1m with 2.5 inches steel angle frame. The floor should be made by plain concrete 1:3:6 of 15cm thickness. The room fixed to 3 inches steel angle horizontal strainer of Three rows for all 4 sides at the top, bottom and in the middle. More details in the attached drawings	Job	1		
				Sub Total	
				VAT 17%	
				Total	

Note: Total depth can reach up to 3.5 Meter according to the type of soil to reach stable soil for plain concrete.

Summary

#	Item	Total
1	Elevated tank	
2	Solar system	
3	Plumping and civil work	
	Sub Total	
	VAT 17%	
	Total	