

BILL OF QUANTITIES
Construction of Water Supply and Sewerage Facilities
on the Island of Naifaru, and Sewerage Facilities on
the Island of Veymandoo

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

BILL OF QUANTITIES

SEWARAGE SYSTEM IN LH.NAIFARU

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN LH.NAIFARU

DESCRIPTION	AMOUNT (MRF)	%
Bill №: 01 - GENERAL WORKS		
Bill №: 02 - GRAVITY SEWARAGE SYSTEM		
Bill №: 03 - ADMIN BUILDING		
Subtotal of Bills		
Total for DAYWORK		
Total for PROVISIONAL SUMS		
TOTAL AMOUNT	-	

Note: Client reserves the right to remove items listed as (optional) in which case the price of the items will be deducted from the bill

SUMMARY OF BILLS OF QUANTITIES
SEWORAGE SYSTEM IN LH.NAIFARU
01 GENERAL WORKS

DESCRIPTION	AMOUNT (MRF)	%
BILL NO. 01 - GENERAL AND PRELIMINARIES		
BILL NO. 02 - SITE PREPARATION		
BILL NO. 03 - DECOMISSIONING		
TOTAL AMOUNT	-	

SEWARAGE SYSTEM IN LH.NAIFARU**01 GENERAL WORKS**

Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BILL NO. 01 - GENERAL AND PRELIMINARIES					
1.1.00	Project Management cost				
1.1.01	Allow for all on and off site management cost including costs of foreman and assistants, temporary services, telephone, fax, hoardings & similar.	1 Item			
1.2.00	Contractual Requirements				
1.2.01	Provide & Maintain all necessary Insurances, Guarantees and Securities.	1 Item			
1.3.00	Specified Requirements				
1.3.01	Provision and Erection of Notice Boards 3m x 4m size as per drawing and specification, including complete cost and conveyance of materials, labour charges, & etc.	1 Item			
1.3.02	Provision of photographs of important activities of the work during the progress of work as directed by the Engineer.	1 Item			
1.3.03	Provision of videograph of the progress of works, one video tape not more than 30 minutes duration showing the progress during every month.	1 Item			
1.3.04	Submission of detailed drawings for approval by the Engineer prior to commencement of work	1 Item			
1.3.05	Detailed survey of each plot and prepare site layout and identify household catchpit and water supply connection meter location and obtain Homeowner & Contractor agreement for each house	1 Item			
1.3.06	Provision and maintaining of adequately equipped Laboratory services as required for site control on the quality of materials and the works as required by the engineer;	1 Item			
1.3.07	Consultant Engineer's office	1 Item			
1.4.00	Temporary Works				
1.4.01	Arrange during dewatering of trenches, for pumping ground water of salinity greater than 2500 microsiemens to be pumped out to sea.	1 Item			
1.5.00	Dewatering				
1.5.01	Dewatering as required as per EPA regulation 2013/R-1697	1 Item			
1.4.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BILL NO. 02 - SITE PREPARATION					
2.1.00	Clearing grass, bushes, shrubs, saplings, uprooting rank vegetation all along the pipeline route and removal & disposal of rubbish to approved tips anywhere in the island as directed by the Engineer-in-charge		1.00	item	
2.2.00	Cutting of trees, including trunks, branching and removal of stumps, roots, stacking of serviceable materials with all lifts and up to all lead within project area and earthfilling in the depression/pit, including excavation & backfilling				
2.2.01	Girth size up to 300mm		1.00	item	
2.2.02	Girth size from 300mm to 600mm		1.00	item	
2.2.03	Girth size from 600mm to above		1.00	item	
2.3.00	Dismantling of existig structures like pillars, walls, slabs and any other structureconstructed of Brick or coral stone masonry, cement concrete, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material		1.00	item	
2.5.0	TOTAL OF BILL №: 02 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BILL NO. 03 - DECOMMISSIONING					
3.1.00	Decommissioning of existing septic tanks and small bore gravity sewers upon completion and testing and commissioning of new system. Rates shall include for removal of all the existing sludge from the septic tanks and soak wells using proper equipment such as sucker truck; and transfer the contents to STP. Once all the content has been thoroughly removed the septic tanks should be backfilled with adequate material and compacted		1.00 item		
3.2.00	TOTAL OF BILL №: 03 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWORAGE SYSTEM IN LH.NAIFARU
02 GRAVITY SEWORAGE SYSTEM

DESCRIPTION	AMOUNT (MRF)	%
BILL NO. 01 - CIVIL WORK FOR PUMP STATIONS (4 nos.)		
BILL NO. 02 - SUPPLY AND INSTALLATION OF PUMPS		
BILL NO. 03 - MECHANICAL AND ELECTRICAL WORKS		
BILL NO. 04 - GRAVITY SEWER MAINS		
BILL NO. 05 - STP		
BILL NO. 06 - SEA OUTFALL		
BILL NO. 07 - SUPPLY OF O&M EQUIPMENT AND SPARES		
BILL NO. 08 - TESTING AND COMMISSIONING		
TOTAL AMOUNT	-	

SEWORAGE SYSTEM IN LH.NAIFARU
02 GRAVITY SEWORAGE SYSTEM
Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BILL NO. 01 - CIVIL WORK FOR PUMP STATIONS (4 nos.)				
1.1.00	General Notes				
	(a) Cement for all structural works shall be Sulphate resistant portland cement to BS4027:1996 unless specified otherwise				
	(b) All structural reinforcement steel shall be epoxy coated reinforcement to ASTM A775 / A775M				
	(c) The required soil bearing pressure for the foundation is 150kn/m ² . The contractor shall carryout geotechnical testing to ensure that this is achieved and necessary ground improvements and piling shall be done if required				
	(d) rates shall include the pump sump, valve chamber, control panel cabinet and valves, fittings inside the valve chamber and vent structures				
	(e) All internal concrete surfaces shall be protected with epoxy coating of thickness 500 microns				
	(f) Bituminous coating shall be provided to all external surfaces of concrete works below ground				
1.2.00	Excavation Works				
1.2.01	Excavation for PS1	49.46	m ³		
1.2.02	Excavation for PS2	51.61	m ³		
1.2.03	Excavation for PS3	49.46	m ³		
1.2.04	Excavation for PS4	51.61	m ³		
1.3.00	Concrete Works				
1.3.01	Lean concrete for PS1	3.70	m ³		
1.3.02	Lean concrete for PS2	3.70	m ³		
1.3.03	Lean concrete for PS3	3.70	m ³		
1.3.04	Lean concrete for PS4	3.70	m ³		
1.3.05	Reinforced concrete for PS1	23.53	m ³		
1.3.06	Reinforced concrete for PS2	24.19	m ³		
1.3.07	Reinforced concrete for PS3	23.53	m ³		
1.3.08	Reinforced concrete for PS4	24.19	m ³		
1.4.00	Plastering works				
1.4.01	Plastering works for PS1	87.51	m ²		
1.4.02	Plastering works for PS2	89.83	m ²		
1.4.03	Plastering works for PS3	87.51	m ²		
1.4.04	Plastering works for PS4	89.83	m ²		
1.5.00	Internal coating (500 Micron Epoxy coating)				

Sewarage system in Naifaru

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1.5.01	Coating for PS1	63.36	m ²		
1.5.02	Coating for PS2	65.31	m ²		
1.5.03	Coating for PS3	63.36	m ²		
1.5.04	Coating for PS4	65.31	m ²		
1.6.00	Bituminous External coating				
1.6.01	External coating for PS1	87.51	m ²		
1.6.02	External coating for PS2	89.83	m ²		
1.6.03	External coating for PS3	87.51	m ²		
1.6.04	External coating for PS4	89.83	m ²		
1.7.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 02 - SUPPLY AND INSTALLATION OF PUMPS					
2.1.00	General Notes (a) Rates shall include for supply and installation as per approved drawings and manufacturers details b) rates shall include costs for Power cable, duckfoot bend, discharge connection, guide bars and 6m of stainless steel lifting chain, level control switches as per drawing and specifications. (C) Rates shall include for all internal piping and connections as per detail				
2.2.00	Pumps				
2.2.01	Submersible Pumps 8.9kW (Pump Station 01) - Pump Capacity,Pump Capacity, Qdp=8.6 l/s, Head=16.2m each	2.00	nos.		
2.2.02	Submersible Pumps 8.9kW (Pump Station 02) - Pump Capacity,Pump Capacity, Qdp=12.4 l/s, Head=20.6m each	2.00	nos.		
2.2.03	Submersible Pumps 8.9kW (Pump Station 03) - Pump Capacity,Pump Capacity, Qdp=11.6 l/s, Head=24.6m each	2.00	nos.		
2.2.04	Submersible Pumps 8.9kW (Pump Station 04) - Pump Capacity,Pump Capacity, Qdp=8.7 l/s, Head=24.9m each	2.00	nos.		
2.3.00	Vent structures Supply and installation of vent structure with carbon filter as per the drawing	4.00	nos.		
2.4.00	Monitoring system				
2.4.01	Monitoring system for Pump stations including all necessary cabling and wiring or GSM modules.	1.00	Item		
2.5.00	Pumping Main				
2.5.01	Pumping main 110mm dia. HDPE PE100 SDR11 PN16 pipe	830.00	m		
2.5.02	Pumping main 160mm dia. HDPE PE100 SDR11 PN16 pipe	780.00	m		
2.5.03	Pumping main 250mm dia. HDPE PE100 SDR11 PN16 pipe	30.00	m		
2.6.00	TOTAL OF BILL No: 02 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 03 - MECHANICAL AND ELECTRICAL WORKS					
3.1.00	General Notes (a) The rate shall include for any necessary excavation of trenches, backfilling after laying and testing, jointing, installing house connection wyes on the main line, dewatering if absolutely necessary, and any other required accessories, including dismantling of road layers and reinstatement after works (b) The rate shall include for making good any areas affected by below works				
3.2.00	Main feeder cable from island grid to control panels (4 pump stations and admin building/STP) including , materials and accessories required for complete works				
3.2.01	25 mm ² 4-Core armoured cable (feeder to PS)	240.00	m		
3.2.02	50 mm ² 4-Core armoured cable (Power House to STP)	80.00	m		
3.3.00	Control Panels with necessary cabling and control wiring as per approved details (4 Pump stations and admin building/STP)	1.00	Item		
3.3.00	Monitoring system for STP including all necessary cabling and wiring.	1.00	Item		
3.4.00	Preparation of electrical drawings and obtaining approval from MEA	1.00	Item		
3.5.00	Testing and Commissioning of the complete electrical system.	1.00	Item		
3.6.00	TOTAL OF BILL No: 03 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 04 - GRAVITY SEWER MAINS					
4.1.00	General Notes (a) The rate for pipe laying shall comprise excavation of trenches, backfilling after laying and testing, jointing pipes, installing house connection wyes on the main line, dewatering if absolutely necessary, providing granular bedding for pipe laying, including dismantling of road layers and reinstatement after works (b) all gravity sewer pipes shall be UPVC to BS EN1401-1:2009. (c) All gravity sewer mains shall be 160mm dia UPVC of wall thickness & stiffness rated to SN4 & SDR41. (d) All gravity house laterals shall be 110mm dia UPVC of wall thickness & stiffness rated to SN4 & SDR41. (e) All gravity sewer mains shall have minimum 0.4% slope. (f) All gravity sewer pipes shall be jointed using rubber ring push fit jointing method & rubber rings comply with BS 2494 (type 2). (h) All sewer pipes shall be buried under earth cover of minimum 0.6 meters.				
4.2.00	Pipe laying All pipes are measured in linear meters on plan view. Contractor shall adjust for slopes				
4.2.01	160mm dia, uPVC gravity sewer main (SN4, SDR41)	19,044.00	m		
4.3.00	Maintenance shaft (a) Rates shall include for all connections, concrete protections and necessary ancillary items, as per drawing and technical specifications				
4.3.01	600mm dia. PE/PP Maintenance shaft with concrete protection	275.00	nos.		
4.4.00	House Connection				
4.4.01	Lateral house connection to main network, not exceeding maximum distance of 6m, including provision and installation of 315mm dia. uPVC House inspection chamber as per detail drawing	1,150.00	nos.		
4.5.00	Clean out (a) Rates shall include for all connections, concrete protections and necessary ancillary items, as per drawing and technical specifications				
4.5.01	160mm dia. uPVC clean out	255.00	nos.		
4.7.00	TOTAL OF BILL No: 04 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 05 - STP					
5.1.00	General Notes (a) Lean concrete shall be GRADE C15 and all structural concrete shall be GRADE C35A (a) Cement for all structural works shall be Sulphate resistant portland cement to BS4027:1996 unless specified otherwise (b) All structural reinforcement steel shall be epoxy coated reinforcement to ASTM A775 / A775M (a) The required soil bearing pressure for the foundation is 150kn/m ² . The contractor shall carryout geotechnical testing to ensure that this is achieved and necessary ground improvements shall be done if required (b) All internal concrete surfaces shall be protected with epoxy coating of thickness 500 microns (c) Bituminous coating shall be provided to all external surfaces of concrete works below ground (b) All GI / steel members shall be protected with universal primer and 2 coats of anti-corrosive				
5.2.00	Civil works Construction of complete STP system as per detailed drawing. Rates shall include for all piping and accessories as needed.				
5.2.01	10mm Bar screen and Grit channel - including 1800x1800 foundation pads, 400x400 columns, 400x600 beam, stainless steel gate, bar screen, walkway (25 SQ GI grating), ladder, etc Excavation for Grit channel Reinforced Concrete for Grit chanel	7.78 16.28	m ³ m ³		
5.2.02	5450x4450 oil and grease trap - including 300mm RC base and walls, 150mm RC top, SS checkered plates, etc Excavation for Oil and Grease trap Reinforced Concrete for Oil and Grease trap	26.40 33.49	m ³ m ³		
5.2.03	8000x7900x3700mm depth equalization tank - including 400mm thick RC base, 300mm thick RC walls, etc Excavation for Equalization Tank Reinforced Concrete for Equalization Tank	79.70 60.41	m ³ m ³		
5.2.04	15600x8400x5000mm depth Aeration tank (2nos) - including 475mm thick RC base, 375mm thick RC walls, 450x600mm RC bottom beams, 350x600 RC top beams, ladder, floor grating, GI pipe railing, diffusers with EPDM membrane system Excavation for Aeration Tank Reinforced Concrete for Aeration Tank	573.75 339.42	m ³ m ³		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
5.2.05	6000mm dia. x 3600mm depth clarifier (2nos) - including 450mm thick RC base, 300mm thick RC walls, 50mm dia. GI hand rail Excavation for Clarifier	109.44	m ³		
		66.62	m ³		
5.2.06	3000mm dia. x 3500mm depth Sludge Holding Tank (2nos) - 350mm thick RC base, 300mm thick RC walls, 200mm thick RC top, 800x800 SS chequered plate. etc Excavation for Sludge Holding Tank	40.40	m ³		
		28.07	m ³		
5.2.07	3600x10600x3600mm depth clear water tank - including 400mm thick RC base, 300mm thick RC walls, etc Excavation for Clear Water Tank	7.25	m ³		
		45.54	m ³		
5.2.08	25500x9600mm sludge drying beds - including 1000x350x50mm thick concrete slabs, 100mm dia. GI pipe columns, 100x150 GI RFS support beam, 50x50 GI SHS purlins, 50x100 GI RHS, translucent sheet roof covering Excavation for Sludge Drying Beds	106.80	m ³		
		89.10	m ³		
5.2.09	2950mm dia. x 2500mm depth Effluent Tank (1nos) - 350mm thick RC base, 225mm thick RC walls, 150mm thick RC top, 800x800 SS chequered plate, etc Excavation for Effluent Tank	19.63	m ³		
		6.08	m ³		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
5.2.10	Complete electrical works required for pumps, connections, and accessories as needed	1.00	item		
5.2.11	External painting on all exposed external surfaces including primer and minimum two coats of emulsion paint	1.00	item		
5.3.00	Pumps and blowers (a) Rates shall include for supply and installation as per approved manufacturers details (b) Rates shall include for all internal piping and connections as per detail (b) Rates shall include for float switches, gate valves, and all other necessary fittings and ancilleries, etc				
5.3.01	O/G Trap - EQT Pump - 2.5kw Submersible pump controlled By manual operation	2.00	no.		
5.3.02	EQT - Aerator pump - 5kw Submersible Pump controlled By Level sensors (float switch)	2.00	no.		
5.3.03	Sludge Holding Tank Pump - 2.5kw Submersible pump controlled By Level sensors (float switch)	4.00	no.		
5.3.04	Aeration Blowers - 11kw Twin lobe design controlled By manual operation	3.00	no.		
5.3.05	Effluent Tank Pump - 1.5kw Submersible pump controlled By Level sensors (float switch)	2.00	no.		
5.3.06	Sea Outfall pump - 12.6kw pump controlled By Level sensors (float switch)	2.00	no.		
5.4.00	Flow meter				
5.4.01	Flow meter between EQT tank and Aeration tank to specifications	2.00	no.		
5.4.02	Flow meter at outfall pipe	1.00	no.		
5.5.00	TOTAL OF BILL №: 05 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 06 - SEA OUTFALL					
6.1.00	Installation of outfall pipeline with concrete ballast block, anchoring and necessary concrete protection as per drawing				
7.1.01	250mm dia, HDPE sea outfall pipe (PE 100, PN16, SDR11). The minimum depth of diffuser head from MSL is 15m and away from reef edge.	605.00	m		
6.2.00	TOTAL OF BILL No: 06 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BILL NO. 07 - SUPPLY OF O&M EQUIPMENT AND SPARES				
	Spares for Admin Building and STP:				
7.1.00	Safety Tools Supply and Delivery of the following safety equipments and tools:				
7.1.01	Wooden First Aid Box	3.00	Nr.		
7.1.02	Fire Bucket sand with 3 nos. of round bottom buckets.	3.00	Nr.		
7.1.03	Rubber mat of 1.1kV grade of size 6mm thick.	3.00	Nr.		
7.1.04	Fire Safety Rules chart.	3.00	Nr.		
7.1.05	Shock Treatment Chart	3.00	Nr.		
7.2.00	Maintenance Tools Supply and Delivery of standard maintenance tools / equipments to Engineer's approval.	3.00	sets		
7.3.00	Laboratory Equipment (Optional) Supply and Delivery of laboratory equipments and related consumables for a duration of one year to Engineer's approval.	1.00	item		
7.4.00	Sewer jetting and Suction Machine/Vehicle (1500 litre tank) (Optional)	1.00	item		
7.5.00	TOTAL OF BILL No: 07 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 08 - TESTING AND COMMISSIONING					
8.1.00	Preparation of all O&M manuals, training documents and as-built drawings	1.00	item		
8.2.00	Provision of one year warranty of system including all required maintenance and provision of spare parts (including pump spares) during this period	1.00	item		
8.3.00	Training of employer's nominees in operation and maintenance as per employer's requirement	1.00	item		
8.4.00	Testing and commissioning of system	1.00	item		
8.6.00	TOTAL OF BILL No: 08 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN LH.NAIFARU
03-ADMIN BUILDING

DESCRIPTION	AMOUNT	%
Bill No: 01 - PRELIMINARIES		
Bill No: 02 - EXCAVATION AND FILLING		
Bill No: 03 - INSITU CONCRETE WORKS		
Bill No: 04 - MASONRY		
Bill No: 05 - CEILINGS		
Bill No: 06 - WINDOWS		
Bill No: 07 - STAIRS AND BALCONY		
Bill No: 08 - FINISHING		
Bill No: 09 - PAINT AND DECORATION		
Bill No: 10 - HYDRAULICS AND DRAINAGE		
Bill No: 11 - MECHANICAL AND ELECTRICAL SERVICES		
Bill No: 12- ROOFING		
TOTAL AMOUNT		

SEWARAGE SYSTEM IN LH.NAIFARU
 03 ADMINISTRATION BUILDING
 Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1.0.00	Bill No: 01 - PRELIMINARIES				
1.1.00	GENERAL NOTES				
	<u>Abbreviations</u> m - metre nr - numbers m3 - cubic metres m2 - square metres m - linear metre t - tons inc. - including mm - millimetre SS - stainless steel GI - galvanized iron				
1.2.00	PAVING				
	Rates shall include for subgrade preparation and Paving of the Pathways surrounding the STP and admin building Site	m2	535.00		
1.3.00	TOTAL OF BILL No: 01 - Carried Over To Summary				

2.0.00	Bill No: 02 - EXCAVATION AND FILLING				
2.1.00	<u>GENERAL</u>				
	(a)	Rates shall include for: leveling, grading, trimming, compacting to faces of excavation, keep sides plumb, backfilling, consolidating, and disposing surplus soil.			
2.2.00	<u>SITE CLEARING</u>				
2.2.01		Clear the area of site from rubbish and vegetable matters, stumps, roots. Rates shall include for removal of trees and tree stumps	m ²	130.00	
2.3.00	<u>EXCAVATION</u>				
		Excavation quantities are measured to the faces of concrete members. Rates shall include for all the additional excavation required to place the formwork. Rates shall include for backfilling.			
2.3.01		Excavation for Foundation beams and tie beams	m ³	31.82	
2.3.02		Excavation for Foundation Pads	m ³	4.46	
2.4.00	<u>DAMP-PROOF MEMBRANE</u>				
		Rate shall include for: dressing around and sealing to all penetrations.			
2.4.01		Bituminous waterproofing membrane	m ²	108.00	
2.5.00	<u>DE-WATERING</u>				
2.5.01		De-watering the excavation until completion of concrete work as required	item	1.00	
2.6.00	TOTAL OF BILL No: 02 - Carried Over To Summary				

3.0.00	Bill No: 03 - INSITU CONCRETE WORKS				
3.1.00	GENERAL				
	(a)	Rates shall include for: placing in position, making good after removal of formwork, mortar touch up to all concrete and casting in all required items; additional concrete required to conform to structural and excavated tolerances			
	(b)	Mix ratio for reinforced concrete shall be 1:2:3 and lean concrete shall be 1:2:6.			
	(d)	Rates shall include for: concrete, formwork, reinforcement, cleaning, fabrication, placing, the provision for all necessary temporary fixings and supports including tie wires and chair supports, laps, distribution bars and wastage.			
	(e)	Rates shall include for: all necessary boarding, supports, erecting, framing, temporary cambering, cutting, perforations for reinforcing bars, bolts, straps, ties, hangers, pipes and removal of formwork.			
	(f)	Rates shall include for: cleaning, fabrication, placing the provision for all necessary temporary fixings and supports including tie wires and chair supports, laps, distribution bars and wastage.			
	(g)	All reinforcing bars shall be high strength bars.			
	(h)	Slab soffits to be finished fairfaced, use plasteciser and formwork with reducing agent.			
	(i)	Waterproofing shall be added to all areas specified.			
3.1.01		Allow for Concrete Testing.	item	1.00	
3.2.00	MASS CONCRETE				
		Quantity is measured to the edges of concrete foundation members. Rates shall be inclusive for any additional concrete required to place the formwork.			
3.2.01		75 mm Lean Concrete (Foundations and bases)	m ³	2.72	
3.3.00	REINFORCED INSITU CONCRETE				
	SUB-STRUCTURE				
	FOUNDATION BEAMS				
3.3.01	300	x 250 mm Foundation beam, FB1	m ³	6.61	
3.3.02	225	x 225 mm Foundation beam (Boundary Wall)	m ³	7.49	
	FOUNDATION PADS-250MM				
3.3.03	600	x 600 mm Foundation Pad F1/C1	m ³	1.35	
3.4.00	GROUND FLOOR				
	Ground Floor Slab				
3.4.01		100 mm Thick slab	m ³	8.20	
	200 mm Concrete slab				
3.4.02		Pump Blower Room	m ³	2.91	
3.4.03		Generator Room	m ³	2.78	
	Generator & Pumps Concrete Base				
3.4.05		400 Concrete base	m ³	3.53	
	COLUMNS				
3.4.06	200	x 200 mm Concrete columns C1	m ³	1.83	
3.4.07	200	x 200 mm Concrete columns (Boundary Wall)	m ³	2.64	
	ROOF BEAM				
3.4.08	300	x 200 mm Roof beam	m ³	5.29	
3.4.09	125	x 125 mm Beam (Boundary Wall)	m ³	2.27	
3.5.09		RAMP	m ²	8.10	
3.6.00	TOTAL OF BILL No: 03 - Carried Over To Summary				

4.0.00	Bill №: 04 - MASONRY				
4.1.00	<u>GENERAL</u>				
	<p>Rates shall include for: cleaning out cavities, forming rebated reveals and pointing and cleaning down to reveals where necessary; fractional size blocks, all necessary machine cutting, cutting or forming chases or edges of floor slabs, cutting or leavingholes and openings as recesses for and building in pipes, conduits, sleeves and similar as required for all trades; leaving surfaces rough or raking out joints for plastering and flashing, bedding frames or plates, building in joists, bearers or similar, temporary supports to openings, templates, reinforcement in walls and for all necessary making good.</p>				
	(a)				
4.2.00	<u>BLOCK WORK</u>				
	<p>Cement block wall, bricks laid to form alternate courses of headers and stretchers, laid on and inc. mortar. (INTERNAL & EXTERNAL WALLS)</p>				
	150 mm thk full height				
4.2.01	GROUND FLOOR	m ²	237.42		
4.2.02	GROUND FLOOR (BOUNDARY WALL)	m ²	294.96		
4.2.03	ABOVE ROOF BEAM LEVEL	m ²	36.49		
4.3.00	TOTAL OF BILL №: 04 - Carried Over To Summary				

5.0.00	Bill No: 05 - CEILING				
5.1.00	GENERAL	(a) Rates shall include for: all labour in framing, notching and fitting around projections, pipes, light fittings, hatches, grilles and similar and complete with cleats, packers, wedges and similar and all nails and screws.			
5.2.00	CEILING				
5.2.01	False Flat Ceiling with 9mm Thick Gypsum Board under 50x38mm Timber framing with Emulsion Paint Finish Ground Floor		m ²	50.36	
5.2.02	Exposed Wooden Roof Members Covered with PVC net Ground Floor		m ²	63.09	
5.2.03	6mm Cement Board Eave Ceiling with Exterior Paint Ground Floor		m ²	26.06	
5.3.00	TOTAL OF BILL No: 05 - Carried Over To Summary				

6.0.00			Bill №: 06 - DOORS AND WINDOWS				
6.1.00	GENERAL						
			(a) Rates shall include for locks, latches, closers, push plates, pull handles, bolts, kick plates, hinges and all door & window hardware.				
			Rates shall include for door frames, mullions, transoms, trims, glazing, tinting, timber panels, boardings, framing, lining, fastenings and all fixings.				
			(b) Sizes are given overall outside dimensions of actual doors and windows.				
			(c) Thickness and sizes of glass panels are shown on the Drawings and doors and windows schedule				
			(d) Rates shall include for all painting as specified				
			(e) Rates shall include all items specified in the door schedule and specification.				
			(f) Frames and sashes to be 25-60 micron black powder coated aluminium other wise specified.				
			(g)				
6.2.00	DOOR & WINDOWS						
			GROUND FLOOR				
6.2.01	<u>5010</u>	x 1700	50x50mm GI Box Bar Frame Gate Finished With Anti-corossive 2 coats and selected paint finished	nr	1.00		
6.2.02	1400	x 2100	D1-Aluminum Framed Doors With Aluminium Panels	nr	1.00		
6.2.03	1200	x 2100	D2-Aluminum Framed Doors With Aluminium Panels	nr	1.00		
6.2.04	900	x 2100	D3-Aluminum Framed Doors With Aluminium Panels	nr	4.00		
6.2.05	900	x 2100	D3a-Aluminum Framed Doors With Aluminium Panels	nr	1.00		
6.2.06	900	x 2100	D3b-Aluminum Framed Doors With Aluminium Panels and Louvers	nr	2.00		
6.2.07	2400	x 1200	W1-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	1.00		
6.2.08	1200	x 1200	W2-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	3.00		
6.2.09	1800	x 1200	W3-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	1.00		
6.2.10	1200	x 1200	W4-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	1.00		
6.2.11	600	x 700	V1-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	2.00		
6.3.00			TOTAL OF BILL №: 06 - Carried Over To Summary				

7.0.00	Bill №: 07 - RAILINGS				
7.1.00	<u>GENERAL</u>				
	(a) Rates shall include for: all fabrication work, welding, marking, drilling for bolts incl. those securing timbers, steel plates, bolts, nuts and any type of washer, riveted work, counter sinking and tapping for bolts or machine screws.				
	(b) Rates shall include for fabrication and erection and temporary supports and fixing into position.				
7.2.00	<u>Boundary wall's barb wire</u>				
	3 Rows Barb wire				
7.2.01	GROUND FLOOR (BOUNDARY WALL)	m	142.20		
7.3.00	TOTAL OF BILL №: 07 - Carried Over To Summary				

8.0.00	Bill No: 08 - FINISHING				
8.1.00	GENERAL	Rates shall include for: fixing, bedding, grouting, and pointing (a) materials; making good around pipes, sanitary fixtures, and similar; cleaning down and polishing.			
8.2.00	PLASTERING	EXTERNAL PLASTERING 16MM 20 mm thk cement plaster on internal surface as specified on the drawing			
8.2.01		GROUND FLOOR	m ²	703.15	
		INTERNAL PLASTERING 16MM 16 mm thk cement plaster on internal surface as specified on the drawing			
8.2.02		GROUND FLOOR	m ²	355.59	
8.3.00	CEMENT SCREED	35 mm thick cement screed			
8.3.01		GROUND FLOOR	m ²	117.56	
8.4.00	FLOOR TILING				
8.4.01	300 x 300	Ceramic tiles GROUND FLOOR	m ²	42.52	
		Toilets floor			
8.4.02	300 x 300	Ceramic Non-Slip tiles GROUND FLOOR	m ²	6.24	
		toilet wall			
8.4.03	300 x 300	Ceramic Non-Slip tiles GROUND FLOOR	m ²	38.11	
8.5.00	TOTAL OF BILL No: 08 - Carried Over To Summary				

9.0.00	Bill №: 09 - PAINTING & DECORATIONS				
9.1.00	GENERAL				
		Rates shall include for: the provision, erection and removal of scaffolding, preparation, wall putty application, rubbing down			
		(a) between coats and similar work, the protection and/or masking floors, fittings and similar work, removing and replacing door & window furniture.			
		(b) All painting work shall be carried in accordance with the Specifications.			
9.2.00	PAINTING				
		WALL PAINTING			
		Emulsion paint finish including putty application on brick walls as specified (EXTERNAL SURFACES)			
9.2.01		GROUND FLOOR	m ²	703.15	
		Emulsion paint finish including putty application on brick walls as specified (INTERNAL SURFACES)			
9.2.03		GROUND FLOOR	m ²	355.59	
		CEILING PAINTING			
		Emulsion paint finish including putty application on brick walls as specified (INTERNAL & EXTERNAL SURFACES)			
9.2.04		GROUND FLOOR	m ²	76.42	
9.3.00	TOTAL OF BILL №: 09 - Carried Over To Summary				

10.0.00	Bill No: 10 - HYDRAULICS AND DRAINAGE					
10.1.00	GENERAL					
	Rates shall include for: sockets, running joints, connectors, elbows, junctions, valves, reducers, expansion joints; backnuts and similar;					
	(a) incidental fittings, clips, saddles, brackets, straps, hangers, screws, nails and fixing complete including cutting and forming holes; excavating, laying pipes and backfilling trenches.					
	(b) All pipe work and fittings shall be uPVC.					
10.2.00	COLD WATER SUPPLY					
	GROUND FLOOR					
	<u>Rain Water Supply</u>					
10.2.01	25 mm Dia Cold water supply PVC pipe		m	34.12		
10.2.02	16 mm CWS to Basin Faucet		nr	5.00		
10.2.03	16 mm CWS to Cistern		nr	2.00		
10.3.00	SANITARY FITTINGS					
	GROUND FLOOR					
10.3.01	No. of toilets		nr	2.00		
10.3.02	Water Closet		nr	2.00		
10.3.03	Wash basin		nr	2.00		
10.3.04	Wash basin tap		nr	2.00		
10.3.05	Mirror		nr	2.00		
10.3.06	Toilet paper holder		nr	2.00		
10.3.07	Soap holder		nr	2.00		
10.3.08	Muslim Shower		nr	2.00		
10.3.09	Gate Valve		nr	3.00		
10.4.00	SEWER AND WASTE WATER DRAINAGE SYSTEM					
	GROUND FLOOR					
	<u>WASTE PIPE</u>					
10.4.01	40 mm Dia. uPVC pipe		m	18.15		
10.4.02	82 mm Dia. uPVC pipe		m	10.02		
	<u>SOIL PIPE</u>					
10.4.03	110 mm Dia uPVC pipe		m	11.91		
	<u>RAIN WATER PIPE</u>					
10.4.04	82 mm Dia.uPVC pipe		m	32.36		
10.5.00	TOTAL OF BILL No: 10 - Carried Over To Summary					

11.0.00	Bill No: 11 - MECHANICAL & ELECTRICAL SERVICES				
11.1.00	GENERAL	<p>Design, provide and install electrical network for the entire building complete in accordance to standards set by the local governing authority.</p> <p>The cost shall include for: screws, nails, bolts, nuts, standard cable</p> <p>(a) fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories.</p> <p>(c) Rates for electrical isolators, conduits, fittings, equipment and similar items shall include for: all fixings to various building surfaces.</p> <p>(d) A light fixture is measured as one point; switch end of wire is not included in the quantity.</p> <p>(e) A point wiring for power points is measured (regardless of 1 gang, 2 gang etc) as one point for each socket outlet; other end of wire is not included in the quantity.</p> <p>All under ground cables directly buried in ground/run in trenches to be properly laid and covered with cable tiles/trench covers. Rate for under ground cables shall include for all necessary excavation, sand layers, concrete tiles, warning strips and back filling with approved quality earth properly compacted, hot dipped galvanized brackets for trenches, accessories, etc as applicable.</p> <p>(f)</p> <p>The contractor shall provide a schedule of all builder's work in connection with details of such items as necessary, along with the tender.</p> <p>(g)</p> <p>Rates for materials/ plants/ equipments not approved for duty free facilities to be quoted on duty paid basis.</p> <p>(h)</p> <p>All equipments shall be guaranteed for a period of 12 months from the date of commissioning or date of practical completion of the project which ever later</p> <p>(i)</p> <p>The rate shall include for insurance during handling, rehandling, transport, storage until ready for installation, delivery of equipments up to the point of installation and until handing over.</p> <p>(j)</p> <p>The rates shall include for comprehensive maintenance during defects liability period of 12 months from the date of handing over</p> <p>(k)</p> <p>Rate shall include for supply, installation, maintaining, testing and commissioning of the system for power and lighting according to drawings and specifications to working order.</p> <p>(l)</p> <p>All materials, equipment wiring shall confirm to local codes, specifications, standards/latest I.E.E. regulations (BS 7671).</p> <p>(m)</p>			
11.2.00	ELECTRICAL BOARDS				
11.2.01	DISTRIBUTION BOX GROUND FLOOR			1.00	
11.3.00	POINT WIRING AND FITTINGS				
11.3.01	Rate shall include for supply & installation of cable, conduits for point wiring in concealed installations including switches, power outlet, isolators, etc, all as specified				
11.3.01	Supply and Installation of 2 x 1C 1.5mm ² PVC/PVC/Cu + 2.5mm ² PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for light point wiring	nr		57.00	
11.3.02	Supply and Installation of 2 x 1C 2.5mm ² PVC/PVC/Cu + 2.5mm ² PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for following Socket outlet/isolator point wiring	nr		62.00	
	Wiring points				
11.4.00	SOCKETS				
	GROUND FLOOR				
11.4.01	13 A Twin socket Outlet 1200	nr		5.00	
11.4.02	13 A Twin socket Outlet 300	nr		26.00	
11.4.03	15 A SWITCHED/SPUR UNIT@H.L	nr		5.00	
11.4.04	Computer Network Outlet (RJ 45 Connectors)	nr		7.00	
11.4.05	Telephone Outlet (RJ11,Connector)	nr		5.00	
11.4.06	TPN Isolator	nr		10.00	
11.4.07	TV Points	nr		4.00	

11.5.00	<u>SWITCHES AND LIGHTING</u>				
	GROUND FLOOR				
11.5.01	Gate Lamp	nr	2.00		
11.5.02	Ceiling Down Light(18W)	nr	16.00		
11.5.03	Recessed Down Light(13W)	nr	4.00		
11.5.04	Ceiling Light	nr	2.00		
11.5.05	2 FT Tube Light	nr	14.00		
11.5.06	Ceiling Fan	nr	2.00		
11.5.07	Emergency Light	nr	3.00		
11.5.08	Flex Power Outlet	nr	3.00		
11.5.09	1 Gang Light Switch	nr	5.00		
11.5.10	2 Gang Light Switch	nr	2.00		
11.5.11	3 Gang Light Switch	nr	4.00		
11.5.12	Ceiling Fan switch with Dimmer	nr	2.00		
11.6.00	<u>AIR CONDITIONERS</u>				
	GROUND FLOOR				
11.6.01	Single Split AC 9000BTU	nr	2.00		
	Single Split AC 14000BTU	nr	3.00		
11.7.00	<u>OTHERS</u>				
	GROUND FLOOR				
11.7.01	Ceiling Mounted Exhaust Fan 90M3	nr	2.00		
	Wall mounted Exhaust Fan	nr	1.00		
11.8.00	TOTAL OF BILL №: 06 - Carried Over To Summary				

12.0.00	Bill No: 12 - ROOFING						
12.1.00	<u>GENERAL</u>	(a) Rates shall include for: fair edges, dressing over angel fillets, roof sealant, turning into grooves, all other labours, circular edges, nails, screws and other fixings and laps.					
12.2.00	<u>MAIN ROOF COVERING</u>						
12.2.01		Lysaght Roofing	m ²	146.40			
12.2.02		Mineral Wool Insulation in between Purlins	m ²	146.40			
	<u>ROOF TRUSS</u>						
12.2.03		50x150mm Timber Rafters @900c/c	m ²	146.40			
12.2.04		50x38mm Timber Purlins @ 600 c/c	m ²	146.40			
12.2.05		25x250mm Timber Fascia Board	m	28.35			
	<u>Gutter</u>						
12.2.06		25x250mm Lysaght Gutter	m	28.35			
12.3.00	TOTAL OF BILL No: 12 - Carried Over To Summary						

SEWARAGE SYSTEM IN LH.NAIFARU
04 PROVISIONAL SUMS
Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROVISIONAL SUMS				
1.1.00	A Maximum of MVR 1,000,000.00 Provisional Sums in 01 General Works				
1.2.00	Provisional Sums in 02 Gravity Sewerage System				
1.3.00	Provisional Sums in 03 Admin Building				
1.2.00	TOTAL OF PROVISIONAL SUMS - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN LH.NAIFARU
DAYWORKS

DESCRIPTION	AMOUNT (MRF)	%
DAYWORK 01 - LABOUR		
DAYWORK 02 - MATERIALS		
DAYWORK 03 - CONSTRUCTION PLANT AND EQUIPMENT		
TOTAL AMOUNT	-	

**SEWARAGE SYSTEM IN LH.NAIFARU
DAYWORKS**

Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
DAYWORK 01 - LABOUR					
1.1.00	Labourer	Hr	100.00		
1.2.00	Dresser	Hr	100.00		
1.3.00	Mason	Hr	100.00		
1.4.00	Carpenter	Hr	100.00		
1.5.00	Plumber	Hr	100.00		
1.6.00	Electrician	Hr	100.00		
1.7.00	Plumber	Hr	100.00		
1.8.00	Electrician	Hr	100.00		
1.9.00	Steel reinforcement erector	Hr	100.00		
1.10.00	Driver for vehicle up to 10 tons	Hr	100.00		
1.11.00	Driver for 10 ton dump truck	Hr	100.00		
1.12.00	Operator for excavator shovel	Hr	100.00		
1.13.00	Operator for tractor, (tracked) with dozer blade or ripper	Hr	100.00		
1.14.00	Operator for Mixer Machine/Lift Machine	Hr	100.00		
1.15.00	Helper for heavy machinery	Hr	100.00		
1.16.00	Skilled labour for the Engineer's use	Hr	100.00		
1.17..00	Unskilled labour for the Engineer's use	Hr	100.00		
				Subtotal	
1.18.00	Allow 10 percent of Subtotal for Contractor's overhead, profit, etc				
1.19.00	TOTAL OF DAYWORK 01 LABOUR - Carried Over To Summary				

DAYWORK 02 - MATERIALS					
2.1.00	Cement, Ordinary Portland in bags	Tonne	1.00		
2.2.00	Cement, SRC Portland in bags	Tonne	1.00		
2.3.00	Epoxy Coated Steel reinforcement Bars (High Yield)	Tonne	1.00		
2.4.00	Steel reinforcement Bars (High Yield)	Tonne	1.00		
2.5.00	Steel reinforcement Bars (Mild)	Tonne	1.00		
2.6.00	Fine aggregate for concrete as specified.	Tonne	1.00		
2.7.00	Coarse aggregate for concrete as specified	Tonne	1.00		
2.8.00	TOTAL OF DAYWORK 02 MATERIALS - Carried Over To Summary				

DAYWORK 03 - CONSTRUCTION PLANT AND EQUIPMENT					
3.1.00	Excavator, face shovel Up to and including 1 Cu. M.	Hr	100.00		
3.2.00	Excavator, face shovel over 1 Cu. M. to 2 Cu. M.	Hr	100.00		
3.3.00	Tractor (tracked) including bull or angle dozer: Up to and including 150 HP	Hr	200.00		
3.4.00	Tractor (tracked) including bull or angle dozer: Up to and including 150 HP	Hr	100.00		
3.5.00	Tractor (tracked) including bull or angle dozer: Over 150 150 HP to 200 HP	Hr	50.00		
3.6.00	Tractor (tracked) with ripper up to and including 200 HP	Hr	75.00		
3.7.00	Vibratory roller 10 tons.	Hr	75.00		
3.8.00	Smooth drum roller 10-12 Tons	Hr	200.00		
3.9.00	Motor grader	Hr	200.00		
3.10.00	10 Ton dump truck	Hr	75.00		
3.11.00	Transit Mixer 4 Cu.M.	Hr	50.00		
3.12.00	P.T.R. (9-Wheeler) 18 Tons	Hr	50.00		
3.13.00	Paver 4m wide	Hr	50.00		
3.14.00	Concrete Mixer/Concrete Lift Machine	Hr	25.00		
3.15.00	Vibrator 1-1/2" Dia	Hr	200.00		
3.16.00	Water Bowser	Hr	150.00		
3.17.00	Plate Compactor	Hr	100.00		
3.18.00	Compressor 300 cfm	Hr	100.00		
3.19.00	TOTAL OF DAYWORK 03 - CONSTRUCTION PLANT AND EQUIPMENT Carried Over To Summary				

BILL OF QUANTITIES

SEWARAGE SYSTEM IN TH.VEYMANDHOO

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN TH.VEYMANDHOO

DESCRIPTION	AMOUNT (MRF)	%
Bill №: 01 - GENERAL WORKS		
Bill №: 02 - GRAVITY SEWARAGE SYSTEM		
Bill №: 03 - ADMIN BUILDING		
Subtotal of Bills		
Total for DAYWORK		
Total for PROVISIONAL SUMS		
TOTAL AMOUNT	-	

Note: Client reserves the right to remove items listed as (optional) in which case the price of the items will be deducted from the bill

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN TH.VEYMANDHOO
01 GENERAL WORKS

DESCRIPTION	AMOUNT (MRF)	%
BILL NO. 01 - GENERAL AND PRELIMINARIES		
BILL NO. 02 - SITE PREPARATION		
BILL NO. 03 - DECOMISSIONING		
TOTAL AMOUNT	-	

SEWARAGE SYSTEM IN TH.VEYMANDHOO

01 GENERAL WORKS

Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BILL NO. 01 - GENERAL AND PRELIMINARIES					
1.1.00	Project Management cost				
1.1.01	Allow for all on and off site management cost including costs of foreman and assistants, temporary services, telephone, fax, hoardings & similar.	1 Item			
1.2.00	Contractual Requirements				
1.2.01	Provide & Maintain all necessary Insurances, Guarantees and Securities.	1 Item			
1.3.00	Specified Requirements				
1.3.01	Provision and Erection of Notice Boards 3m x 4m size as per drawing and specification, including complete cost and conveyance of materials, labour charges, & etc.	1 Item			
1.3.02	Provision of photographs of important activities of the work during the progress of work as directed by the Engineer.	1 Item			
1.3.03	Provision of videograph of the progress of works, one video tape not more than 30 minutes duration showing the progress during every month.	1 Item			
1.3.04	Submission of detailed drawings for approval by the Engineer prior to commencement of work	1 Item			
1.3.05	Detailed survey of each plot and prepare site layout and identify household catchpit and water supply connection meter location and obtain Homeowner & Contractor agreement for each house	1 Item			
1.3.06	Provision and maintaining of adequately equipped Laboratory services as required for site control on the quality of materials and the works as required by the engineer;	1 Item			
1.3.07	Consultant Engineer's office	1 Item			
1.4.00	Temporary Works				
1.4.01	Arrange during dewatering of trenches, for pumping ground water of salinity greater than 2500 microsiemens to be pumped out to sea.	1 Item			
1.5.00	Dewatering				
1.5.01	Dewatering as required as per EPA regulation 2013/R-1697	1 Item			
1.4.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BILL NO. 02 - SITE PREPARATION					
2.1.00	Clearing grass, bushes, shrubs, saplings, uprooting rank vegetation all along the pipeline route and removal & disposal of rubbish to approved tips anywhere in the island as directed by the Engineer-in-charge		1.00	item	
2.2.00	Cutting of trees, including trunks, branching and removal of stumps, roots, stacking of serviceable materials with all lifts and up to all lead within project area and earthfilling in the depression/pit, including excavation & backfilling				
2.2.01	Girth size up to 300mm		1.00	item	
2.2.02	Girth size from 300mm to 600mm		1.00	item	
2.2.03	Girth size from 600mm to above		1.00	item	
2.3.00	Dismantling of existig structures like pillars, walls, slabs and any other structureconstructed of Brick or coral stone masonry, cement concrete, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material		1.00	item	
2.5.0	TOTAL OF BILL №: 02 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
BILL NO. 03 - DECOMMISSIONING					
3.1.00	Decommissioning of existing septic tanks and small bore gravity sewers upon completion and testing and commissioning of new system. Rates shall include for removal of all the existing sludge from the septic tanks and soak wells using proper equipment such as sucker truck; and transfer the contents to STP. Once all the content has been thoroughly removed the septic tanks should be backfilled with adequate material and compacted		1.00 item		
3.2.00	TOTAL OF BILL №: 03 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN TH.VEYMANDHOO
02 GRAVITY SEWARAGE SYSTEM

DESCRIPTION	AMOUNT (MRF)	%
BILL NO. 01 - CIVIL WORK FOR PUMP STATIONS (3 nos.)		
BILL NO. 02 - SUPPLY AND INSTALLATION OF PUMPS		
BILL NO. 03 - MECHANICAL AND ELECTRICAL WORKS		
BILL NO. 04 - GRAVITY SEWER MAINS		
BILL NO. 05 - STP		
BILL NO. 06 - SEA OUTFALL		
BILL NO. 07 - SUPPLY OF O&M EQUIPMENT AND SPARES		
BILL NO. 08 - TESTING AND COMMISSIONING		
TOTAL AMOUNT	-	

SEWARAGE SYSTEM IN TH.VEYMANDHOO**02 GRAVITY SEWARAGE SYSTEM**

Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 01 - CIVIL WORK FOR PUMP STATIONS (3 nos.)					
1.1.00	General Notes (a) Cement for all structural works shall be Sulphate resistant portland cement to BS4027:1996 unless specified otherwise (b) All structural reinforcement steel shall be epoxy coated reinforcement to ASTM A775 / A775M (c) The required soil bearing pressure for the foundation is 150kn/m ² . The contractor shall carryout geotechnical testing to ensure that this is achieved and necessary ground improvements and piling shall be done if required (d) rates shall include the pump sump, valve chamber, control panel cabinet and valves, fittings inside the valve chamber and vent structures (e) All internal concrete surfaces shall be protected with epoxy coating of thickness 500 microns (f) Bituminous coating shall be provided to all external surfaces of concrete works below ground (g) Ground work shall include backfilling and compaction,levelling etc..				
1.2.00	Excavation Works				
1.2.01	Excavation for PS1	58.00	m3		
1.2.02	Excavation for PS2	59.53	m3		
1.2.03	Excavation for PS3	61.04	m3		
1.3.00	Concrete Works				
1.3.01	Lean concrete for PS1	2.79	m3		
1.3.02	Lean concrete for PS2	2.79	m3		
1.3.03	Lean concrete for PS3	2.79	m3		
1.3.05	Reinforced concrete for PS1	6.15	m3		
1.3.06	Reinforced concrete for PS2	6.15	m3		
1.3.07	Reinforced concrete for PS3	6.15	m3		
1.4.00	Plastering works				
1.4.01	Plastering works for PS1	14.21	m2		
1.4.02	Plastering works for PS2	14.21	m2		
1.4.03	Plastering works for PS3	14.21	m2		
1.5.00	Internal coating (500 Micron Epoxy coating)				
1.5.01	Coating works for PS1	15.10	m2		
1.5.02	Coating works for PS2	15.10	m2		
1.5.03	Coating works for PS3	15.10	m2		
1.6.00	Bituminous External coating				
1.6.01	Coating works for PS1	3.21	m2		
1.6.02	Coating works for PS2	3.21	m2		
1.6.03	Coating works for PS3	3.21	m2		
1.7.00	TOTAL OF BILL No: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 02 - SUPPLY AND INSTALLATION OF PUMPS					
2.1.00	General Notes (a) Rates shall include for supply and installation as per approved drawings and manufacturers details b) rates shall include costs for Power cable, duckfoot bend, discharge connection, guide bars and 6m of stainless steel lifting chain, level control switches as per drawing and specifications. (C) Rates shall include for all internal piping and connections as per detail				
2.2.00	Pumps				
2.2.01	Submersible Pumps 8.9kW (Pump Station 01) - Pump Capacity,Pump Capacity, Qdp=6.8 l/s, Head=19.9m each	2.00	nos.		
2.2.02	Submersible Pumps 8.9kW (Pump Station 02) - Pump Capacity,Pump Capacity, Qdp=5.8 l/s, Head=17.5m each	2.00	nos.		
2.2.03	Submersible Pumps 8.9kW (Pump Station 03) - Pump Capacity,Pump Capacity, Qdp=8.5 l/s, Head=23.9m each	2.00	nos.		
2.3.00	Vent structures Supply and installation of vent structure with carbon filter as per the drawing				
		3.00	nos.		
2.4.00	Monitoring system				
2.4.01	Monitoring system for Pump stations including all necessary cabling and wiring or GSM modules.	1.00	Item		
2.5.00	Pumping Main				
2.5.01	Pumping main 110mm dia. HDPE PE100 SDR11 PN16 pipe	766.00	m		
2.5.02	Pumping main 160mm dia. HDPE PE100 SDR11 PN16 pipe	377.00	m		
2.6.00	TOTAL OF BILL No: 02 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 03 - MECHANICAL AND ELECTRICAL WORKS					
3.1.00	General Notes (a) The rate shall include for any necessary excavation of trenches, backfilling after laying and testing, jointing, installing house connection wyes on the main line, dewatering if absolutely necessary, and any other required accessories, including dismantling of road layers and reinstatement after works (b) The rate shall include for making good any areas affected by below works				
3.2.00	Main feeder cable from island grid to control panels (3 pump stations and admin building/STP) including , materials and accessories required for complete works	1.00	Item		
3.2.01	25 mm2 4-Core armoured cable (feeder to PS)	180.00	m		
3.2.02	95 mm2 4-Core armoured cable (Power House to STP)	350.00	m		
3.3.00	Control Panels with necessary cabling and control wiring as per approved details (3 Pump stations and admin building/STP)	1.00	Item		
3.3.00	Monitoring system for STP including all necessary cabling and wiring.	1.00	Item		
3.4.00	Preparation of electrical drawings and obtaining approval from MEA	1.00	Item		
3.5.00	Testing and Commissioning of the complete electrical system.	1.00	Item		
3.6.00	TOTAL OF BILL No: 03 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 04 - GRAVITY SEWER MAINS					
4.1.00	General Notes (a) The rate for pipe laying shall comprise excavation of trenches, backfilling after laying and testing, jointing pipes, installing house connection wyes on the main line, dewatering if absolutely necessary, providing granular bedding for pipe laying, including dismantling of road layers and reinstatement after works (b) all gravity sewer pipes shall be UPVC to BS EN1401-1:2009. (c) All gravity sewer mains shall be 160mm dia UPVC of wall thickness & stiffness rated to SN4 & SDR41. (d) All gravity house laterals shall be 110mm dia UPVC of wall thickness & stiffness rated to SN4 & SDR41. (e) All gravity sewer mains shall have minimum 0.4% slope unless mentioned otherwise.. (f) All gravity sewer pipes shall be jointed using rubber ring push fit jointing method & rubber rings comply with BS 2494 (tvpe2). (h) All sewer pipes shall be buried under earth cover of minimum 0.6 meters.				
4.2.00	Pipe laying All pipes are measured in linear meters on plan veiw. Contractor shall adjust for slopes				
4.2.01	160mm dia, uPVC gravity sewer main (SN4, SDR41)	9,733.00	m		
4.3.00	Maintenance shaft (a) Rates shall include for all connections, concrete protections and necessary ancillary items, as per drawing and technical specifications				
4.3.01	600mm dia. PE/PP Maintenance shaft with concrete protection	122.00	nos.		
4.4.00	House Connection				
4.4.01	Lateral house connection to main network, not exceeding maximum distance of 6m, including provision and installation of 315mm dia. uPVC House inspection chamber as per detail drawing	362.00	nos.		
4.5.00	Clean out (a) Rates shall include for all connections, concrete protections and necessary ancillary items, as per drawing and technical specifications				
4.5.01	160mm dia. uPVC clean out	102.00	nos.		
4.7.00	TOTAL OF BILL №: 04 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 05 - STP					
5.1.00	General Notes (a) Lean concrete is to be included in the rates and shall be GRADE C15 while all structural concrete shall be GRADE C35A (a) Cement for all structural works shall be Sulphate resistant portland cement to BS4027:1996 unless specified otherwise (b) All structural reinforcement steel shall be epoxy coated reinforcement to ASTM A775 / A775M (a) The required soil bearing pressure for the foundation is 150kn/m ² . The contractor shall carryout geotechnical testing to ensure that this is achieved and necessary ground improvements shall be done if required (b) All internal concrete surfaces shall be protected with epoxy coating of thickness 500 microns (c) Bituminous coating shall be provided to all external surfaces of concrete works below ground (b) All GI / steel members shall be protected with universal primer and 2 coats of anti-corrosive				
5.2.00	Civil works Construction of complete STP system as per detailed drawing. Rates shall include for all piping and accessories as needed.				
5.2.01	10mm Bar screen and Grit channel - including 1800x1800 foundation pads, 400x400 columns, 400x600 beam, stainless steel gate, bar screen, walkway (25 SQ GI grating), ladder, etc Excavation for Foundation Pad Reinforced Concrete for Grit channel	7.78	m ³		
		13.81	m ³		
5.2.02	5450x3450 oil and grease trap - including 300mm RC base and walls, 150mm RC top, SS checkered plates, etc Excavation for Oil and grease trap Reinforced Concrete for Oil and grease trap	10.34	m ³		
		23.51	m ³		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
5.2.03	5600x6900x2000mm depth equalization tank - including 400mm thick RC base, 300mm thick RC walls, etc Excavation for Equalization tank	45.24	m ³		
		39.74	m ³		
5.2.04	8750x5900x4000mm depth Aeration tank (2nos) - including 475mm thick RC base, 375mm thick RC walls, 450x600mm RC bottom beams, 350x600 RC top beams, ladder, floor grating, GI pipe railing, diffusers with EPDM membrane system Excavation for Aeration Tank	206.76	m ³		
		165.52	m ³		
5.2.05	3000mm dia. x 3600mm depth clarifier (2nos) - including 450mm thick RC base, 300mm thick RC walls, 50mm dia. GI hand rail Excavation for clarifier	73.28	m ³		
		62.34	m ³		
5.2.06	2000mm dia. x 2000mm depth Sludge Holding Tank (2nos) - 350mm thick RC base, 300mm thick RC walls, 200mm thick RC top. 800x800 SS chequered plate. etc Excavation for Sludge Holding Tank	16.60	m ³		
		15.41	m ³		
5.2.07	2600x5600x3600mm depth clear water tank - including 400mm thick RC base, 300mm thick RC walls, etc Excavation for Clear Water Tank	7.25	m ³		
		24.80	m ³		
5.2.08	16750x5800mm sludge drying beds - including 1000x350x50mm thick concrete slabs, 100mm dia. GI pipe columns, 100x150 GI RFS support beam, 50x50 GI SHS purlins, 50x100 GI RHS, translucent sheet roof covering Excavation for sludge Drying Beds	106.80	m ³		
		54.49	m ³		
5.2.09	2950mm dia. x 2500mm depth Effluent Tank (1nos) - 350mm thick RC base, 225mm thick RC walls, 150mm thick RC top. 800x800 SS chequered plate. etc Excavation for Effluent Tank	19.63	m ³		
		6.08	m ³		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
5.2.10	Complete electrical works required for pumps, connections, and accessories as needed	1.00	item		
5.2.11	External painting on all exposed external surfaces including primer and minimum two coats of emulsion paint	1.00	item		
5.3.00	Pumps and blowers (a) Rates shall include for supply and installation as per approved manufacturers details (b) Rates shall include for all internal piping and connections as per detail (b) Rates shall include for float switches, gate valves, and all other necessary fittings and ancilleries, etc				
5.3.01	O/G Trap - EQT Pump - 2.0kw Submersible pump controlled By manual operation	2.00	no.		
5.3.02	EQT - Aerator pump - 3.5kw Submersible Pump controlled By Level sensors (float switch)	2.00	no.		
5.3.03	Sludge Holding Tank Pump - 2.0kw Submersible pump controlled By Level sensors (float switch)	4.00	no.		
5.3.04	Aeration Blowers - 7.5kw Twin lobe design controlled By manual operation	3.00	no.		
5.3.05	Effluent Tank Pump - 1.5kw Submersible pump controlled By Level sensors (float switch)	2.00	no.		
5.3.06	Sea Outfall pump - 12.6kw pump controlled By Level sensors (float switch)	2.00	no.		
5.4.00	Flow meter				
5.4.01	Flow meter between EQT tank and Aeration tank to specifications	2.00	no.		
5.4.02	Flow meter at outfall pipe	1.00	no.		
5.5.00	TOTAL OF BILL №: 05 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 06 - SEA OUTFALL					
6.1.00	Installation of outfall pipeline with concrete ballast block,				
6.1.01	anchoring and necessary concrete protection as per drawing 250mm dia, HDPE sea outfall pipe (PE 100, PN16, SDR11). The minimum depth of diffuser head from MSL is 15m and away from reef edge.	280.00	m		
6.2.00	TOTAL OF BILL №: 06 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BILL NO. 07 - SUPPLY OF O&M EQUIPMENT AND SPARES				
	Spares for Admin Building and STP:				
7.1.00	Safety Tools Supply and Delivery of the following safety equipments and tools:				
7.1.01	Wooden First Aid Box	3.00	Nr.		
7.1.02	Fire Bucket sand with 3 nos. of round bottom buckets.	3.00	Nr.		
7.1.03	Rubber mat of 1.1kV grade of size 6mm thick.	3.00	Nr.		
7.1.04	Fire Safety Rules chart.	3.00	Nr.		
7.1.05	Shock Treatment Chart	3.00	Nr.		
7.2.00	Maintenance Tools Supply and Delivery of standard maintenance tools / equipments to Engineer's approval.	3.00	sets		
7.3.00	Laboratory Equipment (Optional) Supply and Delivery of laboratory equipments and related consumables for a duration of one year to Engineer's approval.	1.00	item		
7.4.00	Sewer jetting and Suction Machine/Vehicle (1500 litre tank) (Optional)	1.00	item		
7.5.00	TOTAL OF BILL No: 07 - Carried Over To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
BILL NO. 08 - TESTING AND COMMISSIONING					
8.1.00	Preparation of all O&M manuals, training documents and as-built drawings	1.00	item		
8.2.00	Provision of one year warranty of system including all required maintenance and provision of spare parts (including pump spares) during this period	1.00	item		
8.3.00	Training of employer's nominees in operation and maintenance as per employer's requirement	1.00	Item		
8.4.00	Testing and commissioning of system	1.00	item		
8.6.00	TOTAL OF BILL No: 08 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN TH.VEYMANDHOO
03-ADMIN BUILDING

DESCRIPTION	AMOUNT	%
Bill No: 01 - PRELIMINARIES		
Bill No: 02 - EXCAVATION AND FILLING		
Bill No: 03 - INSITU CONCRETE WORKS		
Bill No: 04 - MASONRY		
Bill No: 05 - CEILINGS		
Bill No: 06 - WINDOWS		
Bill No: 07 - STAIRS AND BALCONY		
Bill No: 08 - FINISHING		
Bill No: 09 -PAINT AND DECORATION		
Bill No: 10 - HYDRAULICS AND DRAINAGE		
Bill No: 11 - MECHANICAL AND ELECTRICAL SERVICES		
Bill No: 12- ROOFING		
TOTAL AMOUNT		

SEWARAGE SYSTEM IN TH.VEYMANDHOO
 03 ADMINISTRATION BUILDING
 Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1.0.00	Bill №: 01 - PRELIMINARIES				
1.1.00	GENERAL NOTES				
	<u>Abbreviations</u> m - metre nr - numbers m3 - cubic metres m2 - square metres m - linear metre t - tons inc. - including mm - millimetre SS - stainless steel GI - galvanized iron				
1.2.00	PAVING				
	Rates shall include for subgrade preparation and Paving of the Pathways sourrounding the STP and admin buiilding Site	m2	270.00		
1.6.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

2.0.00	Bill No: 02 - EXCAVATION AND FILLING				
2.1.00	<u>GENERAL</u>				
	(a)	Rates shall include for: leveling, grading, trimming, compacting to faces of excavation, keep sides plumb, backfilling, consolidating, and disposing surplus soil.			
2.2.00	<u>SITE CLEARING</u>				
2.2.01		Clear the area of site from rubbish and vegetable matters, stumps, roots. Rates shall include for removal of trees and tree stumps	m ²	130.00	
2.3.00	<u>EXCAVATION</u>				
		Excavation quantities are measured to the faces of concrete members. Rates shall include for all the additional excavation required to place the formwork. Rates shall include for backfilling.			
2.3.01		Excavation for Foundation beams and tie beams	m ³	31.82	
2.3.02		Excavation for Foundation Pads	m ³	4.46	
2.4.00	<u>DAMP-PROOF MEMBRANE</u>				
		Rate shall include for: dressing around and sealing to all penetrations.			
2.4.01		Bituminous waterproofing membrane	m ²	108.00	
2.5.00	<u>DE-WATERING</u>				
2.5.01		De-watering the excavation until completion of concrete work as required	item	1.00	
2.6.00	TOTAL OF BILL No: 02 - Carried Over To Summary				

3.0.00	Bill No: 03 - INSITU CONCRETE WORKS				
3.1.00	GENERAL				
	(a)	Rates shall include for: placing in position, making good after removal of formwork, mortar touch up to all concrete and casting in all required items; additional concrete required to conform to structural and excavated tolerances			
	(b)	Mix ratio for reinforced concrete shall be 1:2:3 and lean concrete shall be 1:2:6.			
	(d)	Rates shall include for: concrete, formwork, reinforcement, cleaning, fabrication, placing, the provision for all necessary temporary fixings and supports including tie wires and chair supports, laps, distribution bars and wastage.			
	(e)	Rates shall include for: all necessary boarding, supports, erecting, framing, temporary cambering, cutting, perforations for reinforcing bars, bolts, straps, ties, hangers, pipes and removal of formwork.			
	(f)	Rates shall include for: cleaning, fabrication, placing the provision for all necessary temporary fixings and supports including tie wires and chair supports, laps, distribution bars and wastage.			
	(g)	All reinforcing bars shall be high strength bars.			
	(h)	Slab soffits to be finished fairfaced, use plasteciser and formwork with reducing agent.			
	(i)	Waterproofing shall be added to all areas specified.			
3.1.01		Allow for Concrete Testing.	item	1.00	
3.2.00	MASS CONCRETE				
		Quantity is measured to the edges of concrete foundation members. Rates shall be inclusive for any additional concrete required to place the formwork.			
3.2.01		75 mm Lean Concrete (Foundations and bases)	m ³	2.72	
3.3.00	REINFORCED INSITU CONCRETE				
	SUB-STRUCTURE				
	FOUNDATION BEAMS				
3.3.01	300	x 250 mm Foundation beam, FB1	m ³	6.61	
3.3.02	225	x 225 mm Foundation beam (Boundary Wall)	m ³	7.49	
	FOUNDATION PADS-250MM				
3.3.03	600	x 600 mm Foundation Pad F1/C1	m ³	1.35	
3.4.00	GROUND FLOOR				
	Ground Floor Slab				
3.4.01		100 mm Thick slab	m ³	8.20	
	200 mm Concrete slab				
3.4.02		Pump Blower Room	m ³	2.91	
3.4.03		Generator Room	m ³	2.78	
	Generator & Pumps Concrete Base				
3.4.05		400 Concrete base	m ³	3.53	
	COLUMNS				
3.4.06	200	x 200 mm Concrete columns C1	m ³	1.83	
3.4.07	200	x 200 mm Concrete columns (Boundary Wall)	m ³	2.64	
	ROOF BEAM				
3.4.08	300	x 200 mm Roof beam	m ³	5.29	
3.4.09	125	x 125 mm Beam (Boundary Wall)	m ³	2.27	
3.5.09		RAMP	m ²	8.10	
3.6.00	TOTAL OF BILL No: 03 - Carried Over To Summary				

4.0.00	Bill №: 04 - MASONRY				
4.1.00	<u>GENERAL</u>				
	<p>Rates shall include for: cleaning out cavities, forming rebated reveals and pointing and cleaning down to reveals where necessary; fractional size blocks, all necessary machine cutting, cutting or forming chases or edges of floor slabs, cutting or leavingholes and openings as recesses for and building in pipes, conduits, sleeves and similar as required for all trades; leaving surfaces rough or raking out joints for plastering and flashing, bedding frames or plates, building in joists, bearers or similar, temporary supports to openings, templates, reinforcement in walls and for all necessary making good.</p>				
	(a)				
4.2.00	<u>BLOCK WORK</u>				
	<p>Cement block wall, bricks laid to form alternate courses of headers and stretchers, laid on and inc. mortar. (INTERNAL & EXTERNAL WALLS)</p>				
	150 mm thk full height				
4.2.01	GROUND FLOOR	m ²	237.42		
4.2.02	GROUND FLOOR (BOUNDARY WALL)	m ²	294.96		
4.2.03	ABOVE ROOF BEAM LEVEL	m ²	36.49		
4.3.00	TOTAL OF BILL №: 04 - Carried Over To Summary				

5.0.00	Bill No: 05 - CEILING				
5.1.00	GENERAL	(a) Rates shall include for: all labour in framing, notching and fitting around projections, pipes, light fittings, hatches, grilles and similar and complete with cleats, packers, wedges and similar and all nails and screws.			
5.2.00	CEILING				
5.2.01	False Flat Ceiling with 9mm Thick Gypsum Board under 50x38mm Timber framing with Emulsion Paint Finish	Ground Floor	m ²	50.36	
5.2.02	Exposed Wooden Roof Members Covered with PVC net	Ground Floor	m ²	63.09	
5.2.03	6mm Cement Board Eave Ceiling with Exterior Paint	Ground Floor	m ²	26.06	
5.3.00	TOTAL OF BILL No: 05 - Carried Over To Summary				

6.0.00			Bill №: 06 - DOORS AND WINDOWS				
6.1.00	GENERAL						
			(a) Rates shall include for locks, latches, closers, push plates, pull handles, bolts, kick plates, hinges and all door & window hardware.				
			Rates shall include for door frames, mullions, transoms, trims, glazing, tinting, timber panels, boardings, framing, lining, fastenings and all fixings.				
			(b) Sizes are given overall outside dimensions of actual doors and windows.				
			(c) Thickness and sizes of glass panels are shown on the Drawings and doors and windows schedule				
			(d) Rates shall include for all painting as specified				
			(e) Rates shall include all items specified in the door schedule and specification.				
			(f) Frames and sashes to be 25-60 micron black powder coated aluminium other wise specified.				
			(g)				
6.2.00	DOOR & WINDOWS						
			GROUND FLOOR				
6.2.01	<u>5010</u>	x 1700	50x50mm GI Box Bar Frame Gate Finished With Anti-corossive 2 coats and selected paint finished	nr	1.00		
6.2.02	1400	x 2100	D1-Aluminum Framed Doors With Aluminium Panels	nr	1.00		
6.2.03	1200	x 2100	D2-Aluminum Framed Doors With Aluminium Panels	nr	1.00		
6.2.04	900	x 2100	D3-Aluminum Framed Doors With Aluminium Panels	nr	4.00		
6.2.05	900	x 2100	D3a-Aluminum Framed Doors With Aluminium Panels	nr	1.00		
6.2.06	900	x 2100	D3b-Aluminum Framed Doors With Aluminium Panels and Louvers	nr	2.00		
6.2.07	2400	x 1200	W1-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	1.00		
6.2.08	1200	x 1200	W2-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	3.00		
6.2.09	1800	x 1200	W3-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	1.00		
6.2.10	1200	x 1200	W4-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	1.00		
6.2.11	600	x 700	V1-White Powder Coated Aluminium Door With Reflective Double Glazed Glass Panels	nr	2.00		
6.3.00			TOTAL OF BILL №: 06 - Carried Over To Summary				

7.0.00	Bill №: 07 - RAILINGS				
7.1.00	<u>GENERAL</u>				
	(a) Rates shall include for: all fabrication work, welding, marking, drilling for bolts incl. those securing timbers, steel plates, bolts, nuts and any type of washer, riveted work, counter sinking and tapping for bolts or machine screws.				
	(b) Rates shall include for fabrication and erection and temporary supports and fixing into position.				
7.2.00	<u>Boundary wall's barb wire</u>				
	3 Rows Barb wire				
7.2.01	GROUND FLOOR (BOUNDARY WALL)	m	142.20		
7.3.00	TOTAL OF BILL №: 07 - Carried Over To Summary				

8.0.00	Bill No: 08 - FINISHING				
8.1.00	GENERAL	Rates shall include for: fixing, bedding, grouting, and pointing (a) materials; making good around pipes, sanitary fixtures, and similar; cleaning down and polishing.			
8.2.00	PLASTERING	EXTERNAL PLASTERING 16MM 20 mm thk cement plaster on internal surface as specified on the drawing			
8.2.01		GROUND FLOOR	m ²	703.15	
		INTERNAL PLASTERING 16MM 16 mm thk cement plaster on internal surface as specified on the drawing			
8.2.02		GROUND FLOOR	m ²	355.59	
8.3.00	CEMENT SCREED	35 mm thick cement screed			
8.3.01		GROUND FLOOR	m ²	117.56	
8.4.00	FLOOR TILING				
8.4.01	300 x 300	Ceramic tiles GROUND FLOOR	m ²	42.52	
8.4.02	300 x 300	Toilets floor Ceramic Non-Slip tiles GROUND FLOOR	m ²	6.24	
8.4.03	300 x 300	toilet wall Ceramic Non-Slip tiles GROUND FLOOR	m ²	38.11	
8.5.00	TOTAL OF BILL No: 08 - Carried Over To Summary				

9.0.00	Bill No: 09 - PAINTING & DECORATIONS				
9.1.00	GENERAL				
		Rates shall include for: the provision, erection and removal of scaffolding, preparation, wall putty application, rubbing down			
		(a) between coats and similar work, the protection and/or masking floors, fittings and similar work, removing and replacing door & window furniture.			
		(b) All painting work shall be carried in accordance with the Specifications.			
9.2.00	PAINTING				
		WALL PAINTING			
		Emulsion paint finish including putty application on brick walls as specified (EXTERNAL SURFACES)			
9.2.01		GROUND FLOOR	m ²	703.15	
		Emulsion paint finish including putty application on brick walls as specified (INTERNAL SURFACES)			
9.2.03		GROUND FLOOR	m ²	355.59	
		CEILING PAINTING			
		Emulsion paint finish including putty application on brick walls as specified (INTERNAL & EXTERNAL SURFACES)			
9.2.04		GROUND FLOOR	m ²	76.42	
9.3.00	TOTAL OF BILL No: 09 - Carried Over To Summary				

10.0.00	Bill №: 10 - HYDRAULICS AND DRAINAGE					
10.1.00	GENERAL					
	Rates shall include for: sockets, running joints, connectors, elbows, junctions, valves, reducers, expansion joints; backnuts and similar;					
	(a) incidental fittings, clips, saddles, brackets, straps, hangers, screws, nails and fixing complete including cutting and forming holes; excavating, laying pipes and backfilling trenches.					
	(b) All pipe work and fittings shall be uPVC.					
10.2.00	COLD WATER SUPPLY					
	GROUND FLOOR					
	<u>Rain Water Supply</u>					
10.2.01	25 mm Dia Cold water supply PVC pipe		m	34.12		
10.2.02	16 mm CWS to Basin Faucet		nr	5.00		
10.2.03	16 mm CWS to Cistern		nr	2.00		
10.3.00	SANITARY FITTINGS					
	GROUND FLOOR					
10.3.01	No. of toilets		nr	2.00		
10.3.02	Water Closet		nr	2.00		
10.3.03	Wash basin		nr	2.00		
10.3.04	Wash basin tap		nr	2.00		
10.3.05	Mirror		nr	2.00		
10.3.06	Toilet paper holder		nr	2.00		
10.3.07	Soap holder		nr	2.00		
10.3.08	Muslim Shower		nr	2.00		
10.3.09	Gate Valve		nr	3.00		
10.4.00	SEWER AND WASTE WATER DRAINAGE SYSTEM					
	GROUND FLOOR					
	<u>WASTE PIPE</u>					
10.4.01	40 mm Dia. uPVC pipe		m	18.15		
10.4.02	82 mm Dia. uPVC pipe		m	10.02		
	<u>SOIL PIPE</u>					
10.4.03	110 mm Dia uPVC pipe		m	11.91		
	<u>RAIN WATER PIPE</u>					
10.4.04	82 mm Dia.uPVC pipe		m	32.36		
10.5.00	TOTAL OF BILL №: 10 - Carried Over To Summary					

11.0.00	Bill No: 11 - MECHANICAL & ELECTRICAL SERVICES					
11.1.00	GENERAL	<p>Design, provide and install electrical network for the entire building complete in accordance to standards set by the local governing authority.</p> <p>The cost shall include for: screws, nails, bolts, nuts, standard cable</p> <p>(a) fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories.</p> <p>(b) Rates for electrical isolators, conduits, fittings, equipment and similar items shall include for: all fixings to various building surfaces.</p> <p>(c) A light fixture is measured as one point; switch end of wire is not included in the quantity.</p> <p>(d) A point wiring for power points is measured (regardless of 1 gang, 2 gang etc) as one point for each socket outlet; other end of wire is not included in the quantity.</p> <p>(e) All under ground cables directly buried in ground/run in trenches to be properly laid and covered with cable tiles/trench covers. Rate for under ground cables shall include for all necessary excavation, sand layers, concrete tiles, warning strips and back filling with approved quality earth properly compacted, hot dipped galvanized brackets for trenches, accessories, etc as applicable.</p> <p>(f) The contractor shall provide a schedule of all builder's work in connection with details of such items as necessary, along with the tender.</p> <p>(g) Rates for materials/ plants/ equipments not approved for duty free facilities to be quoted on duty paid basis.</p> <p>(h) All equipments shall be guaranteed for a period of 12 months from the date of commissioning or date of practical completion of the project which ever later</p> <p>(i) The rate shall include for insurance during handling, rehandling, transport, storage until ready for installation, delivery of equipments up to the point of installation and until handing over.</p> <p>(j) The rates shall include for comprehensive maintenance during defects liability period of 12 months from the date of handing over</p> <p>(k) Rate shall include for supply, installation, maintaining, testing and commissioning of the system for power and lighting according to drawings and specifications to working order.</p> <p>(l) All materials, equipment wiring shall confirm to local codes, specifications, standards/latest I.E.E. regulations (BS 7671).</p> <p>(m)</p>				
11.2.00	ELECTRICAL BOARDS	DISTRIBUTION BOX				
11.2.01		GROUND FLOOR			1.00	
11.3.00	POINT WIRING AND FITTINGS	<p>Rate shall include for supply & installation of cable, conduits for point wiring in concealed installations including switches, power outlet, isolators, etc, all as specified</p> <p>Supply and Installation of 2 x 1C 1.5mm² PVC/PVC/Cu + 2.5mm² PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for light point wiring</p> <p>Supply and Installation of 2 x 1C 2.5mm² PVC/PVC/Cu + 2.5mm² PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for following Socket outlet/isolator point wiring</p> <p>Wiring points</p>				
11.3.01			nr		57.00	
11.3.02			nr		62.00	
11.4.00	SOCKETS	GROUND FLOOR				
11.4.01		13 A Twin socket Outlet 1200	nr		5.00	
11.4.02		13 A Twin socket Outlet 300	nr		26.00	
11.4.03		15 A SWITCHED/SPUR UNIT@H.L	nr		5.00	
11.4.04		Computer Network Outlet (RJ 45 Connectors)	nr		7.00	
11.4.05		Telephone Outlet (RJ11,Connector)	nr		5.00	
11.4.06		TPN Isolator	nr		10.00	
11.4.07		TV Points	nr		4.00	

11.5.00	<u>SWITCHES AND LIGHTING</u>				
	GROUND FLOOR				
11.5.01	Gate Lamp	nr	2.00		
11.5.02	Ceiling Down Light(18W)	nr	16.00		
11.5.03	Recessed Down Light(13W)	nr	4.00		
11.5.04	Ceiling Light	nr	2.00		
11.5.05	2 FT Tube Light	nr	14.00		
11.5.06	Ceiling Fan	nr	2.00		
11.5.07	Emergency Light	nr	3.00		
11.5.08	Flex Power Outlet	nr	3.00		
11.5.09	1 Gang Light Switch	nr	5.00		
11.5.10	2 Gang Light Switch	nr	2.00		
11.5.11	3 Gang Light Switch	nr	4.00		
11.5.12	Ceiling Fan switch with Dimmer	nr	2.00		
11.6.00	<u>AIR CONDITIONERS</u>				
	GROUND FLOOR				
11.6.01	Single Split AC 9000BTU	nr	2.00		
	Single Split AC 14000BTU	nr	3.00		
11.7.00	<u>OTHERS</u>				
	GROUND FLOOR				
11.7.01	Ceiling Mounted Exhaust Fan 90M3	nr	2.00		
	Wall mounted Exhaust Fan	nr	1.00		
11.8.00	TOTAL OF BILL No: 06 - Carried Over To Summary				

12.0.00	Bill No: 12 - ROOFING						
12.1.00	<u>GENERAL</u>	(a) Rates shall include for: fair edges, dressing over angel fillets, roof sealant, turning into grooves, all other labours, circular edges, nails, screws and other fixings and laps.					
12.2.00	<u>MAIN ROOF COVERING</u>						
12.2.01		Lysaght Roofing	m ²	146.40			
12.2.02		Mineral Wool Insulation in between Purlins	m ²	146.40			
	<u>ROOF TRUSS</u>						
12.2.03		50x150mm Timber Rafters @900c/c	m ²	146.40			
12.2.04		50x38mm Timber Purlins @ 600 c/c	m ²	146.40			
12.2.05		25x250mm Timber Fascia Board	m	28.35			
	<u>Gutter</u>						
12.2.06		25x250mm Lysaght Gutter	m	28.35			
12.3.00	TOTAL OF BILL No: 12 - Carried Over To Summary						

SEWARAGE SYSTEM IN TH.VEYMANDHOO

04 PROVISIONAL SUMS

Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROVISIONAL SUMS				
1.1.00	A Maximum of MVR 1,000,000.00 Provisional Sums in 01 General Works				
1.2.00	Provisional Sums in 02 Gravity Sewerage System				
1.3.00	Provisional Sums in 03 Admin Building				
1.2.00	TOTAL OF PROVISIONAL SUMS - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN TH.VEYMANDHOO
DAYWORKS

DESCRIPTION	AMOUNT (MRF)	%
DAYWORK 01 - LABOUR		
DAYWORK 02 - MATERIALS		
DAYWORK 03 - CONSTRUCTION PLANT AND EQUIPMENT		
TOTAL AMOUNT	-	

SEWORAGE SYSTEM IN TH.VEYMANDHOO
DAYWORKS
Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
DAYWORK 01 - LABOUR					
1.1.00	Labourer	Hr	100.00		
1.2.00	Dresser	Hr	100.00		
1.3.00	Mason	Hr	100.00		
1.4.00	Carpenter	Hr	100.00		
1.5.00	Plumber	Hr	100.00		
1.6.00	Electrician	Hr	100.00		
1.7.00	Plumber	Hr	100.00		
1.8.00	Electrician	Hr	100.00		
1.9.00	Steel reinforcement erector	Hr	100.00		
1.10.00	Driver for vehicle up to 10 tons	Hr	100.00		
1.11.00	Driver for 10 ton dump truck	Hr	100.00		
1.12.00	Operator for excavator shovel	Hr	100.00		
1.13.00	Operator for tractor, (tracked) with dozer blade or ripper	Hr	100.00		
1.14.00	Operator for Mixer Machine/Lift Machine	Hr	100.00		
1.15.00	Helper for heavy machinery	Hr	100.00		
1.16.00	Skilled labour for the Engineer's use	Hr	100.00		
1.17..00	Unskilled labour for the Engineer's use	Hr	100.00		
		Subtotal			
1.18.00	Allow 10 percent of Subtotal for Contractor's overhead, profit, etc				
1.19.00	TOTAL OF DAYWORK 01 LABOUR - Carried Over To Summary				

DAYWORK 02 - MATERIALS					
2.1.00	Cement, Ordinary Portland in bags	Tonne	1.00		
2.2.00	Cement, SRC Portland in bags	Tonne	1.00		
2.3.00	Epoxy Coated Steel reinforcement Bars (High Yield)	Tonne	1.00		
2.4.00	Steel reinforcement Bars (High Yield)	Tonne	1.00		
2.5.00	Steel reinforcement Bars (Mild)	Tonne	1.00		
2.6.00	Fine aggregate for concrete as specified.	Tonne	1.00		
2.7.00	Coarse aggregate for concrete as specified	Tonne	1.00		
2.8.00	TOTAL OF DAYWORK 02 MATERIALS - Carried Over To Summary				

DAYWORK 03 - CONSTRUCTION PLANT AND EQUIPMENT					
3.1.00	Excavator, face shovel Up to and including 1 Cu. M.	Hr	100.00		
3.2.00	Excavator, face shovel over 1 Cu. M. to 2 Cu. M.	Hr	100.00		
3.3.00	Tractor (tracked) including bull or angle dozer: Up to and including 150 HP	Hr	200.00		
3.4.00	Tractor (tracked) including bull or angle dozer: Up to and including 150 HP	Hr	100.00		
3.5.00	Tractor (tracked) including bull or angle dozer: Over 150 HP to 200 HP	Hr	50.00		
3.6.00	Tractor (tracked) with ripper up to and including 200 HP	Hr	75.00		
3.7.00	Vibratory roller 10 tons.	Hr	75.00		
3.8.00	Smooth drum roller 10-12 Tons	Hr	200.00		
3.9.00	Motor grader	Hr	200.00		
3.10.00	10 Ton dump truck	Hr	75.00		
3.11.00	Transit Mixer 4 Cu.M.	Hr	50.00		
3.12.00	P.T.R. (9-Wheeler) 18 Tons	Hr	50.00		
3.13.00	Paver 4m wide	Hr	50.00		
3.14.00	Concrete Mixer/Concrete Lift Machine	Hr	25.00		
3.15.00	Vibrator 1-1/2" Dia	Hr	200.00		
3.16.00	Water Bowser	Hr	150.00		
3.17..00	Plate Compactor	Hr	100.00		
3.18.00	Compressor 300 cfm	Hr	100.00		
3.19.00	TOTAL OF DAYWORK 03 - CONSTRUCTION PLANT AND EQUIPMENT Carried Over To Summary				

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

Bill Of Quantity

SUMMARY

No.	Description	Amount
		MVR.
1	General	-
2	Network	-
3	Ro Building	-
4	Supply & Installation	-
5	RTP Clear water tank	-
SUB TOTAL (A)		-
6	CONTINGENCIES (10 % OF SUB TOTAL (A))	-
	TOTAL MVR =SUB TOTAL (B)+6	-
	TOTAL USD	

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#01 GENERAL ITEMS

Item	Item Description	Unit	Qty	Rate	Amount
	All necessary materials required to perform the work to be provided by the contractor to the respective sites.				
	Any contractual or specified requirement not itemized hereunder, shall deemed to be included in the rates of the other bill items.				
1.001	All bonds and guarantees in accordance with the Conditions of Contract	Item	1		-
1.002	All insurance policies in accordance with the Conditions of Contract	Item	1		-
1.003	Establishment of Engineer's main site office and removal on completion as specified in Particular specifications.	Item	1		-
1.004	Maintain Engineer's main site office as specified in Particular specifications.	Months	18		-
1.005	Project management costs including on and offsite management costs, temporary services, transport , hoardings and similar	Months	18		-
1.006	Progress photographs as specified in Particular Specifications and monthly progress reports.	Months	18		-
1.007	Preparation and submission of As built drawings .	Item	1		-
1.008	Carry Survey of each plot and prepare site layout and water supply connection meter location and obtain Homeowner & Contractor agreement for each house	Item	1		
1.009	Dewatering as required as per EPA regulation	Item	1		
1.010	Provision of Sign Boards for all sites as per Engineers Approval	Item	1		
1.011	Allow for Environmental Management as per EIA recommendations	Months	18		
TOTAL CARRIED TO GRAND SUMMARY					-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#02 DISTRIBUTION NETWORK

Item No	Description	Unit	Qty	Rate	Amount
	<p>Note:- Rates shall cover the value comprising supply of all necessary material, excavation, laying and aligning in position, fixing and compacted backfilling to PE pipes, fittings, specials, accessories, DI valves, joint rings, lubricant, gaskets, nuts & bolts, washers, mastic material and polyethylene sleeving to PE pipes, maker tapes pressure testing, flushing and disinfection as corresponding to the relevant item description and complying to the drawings and specifications except the cost of supplying these items</p>				
	<p>Note:- All pipes and fittings shall be supplied with joint rings, lubricant, gaskets, nuts & bolts, washers, mastic material incl. primer, profiling compound, mastic paint (inner), protection tape (outer wrap) and all other associated material as stated in the drawings and specifications and required for complete</p>				
	<p>Note:- Rates shall have to be provided to cater all associated cost of procuring and supplying materials from the list of accepted manufacturers provided in the contract data and or specification, who shall be later subjected to the Employer's</p>				
	<p>Note:- Rates shall cover the entire cost of executing the Works as per the drawings and specifications stipulated under the Contract. No further cost is allowed for any items of works which are depicted in the drawings and specifications but no separate item is given in the BOQ</p>				
	<p>Note:- Rates shall comprise the cost of arranging and providing all required facilities for preshipment inspection as per the special provisions and or specifications, complying with all relevant conditions applicable for inspecting manufacturing process, agency fees, producing necessary documents relevant for the shipment, cost of all insurances, cost of opening LOC, safety precautions during shipment and inland transportation, paying all taxes, duties, cost of demarages and such other costs of clearances as necessary</p>				
	<p>Note:- Rates shall incorporate the cost of loading and unloading, storing as per the specification, labeling with indelible ink, handling and shifting the layers, positions and places of the storage as directed by the Engineer, transporting material to the site, facilitating the Engineer for material inspection at stores, producing documents of shipment and clearances</p>				
	<p>CESMM3 CLASS I PIPE WORK – PIPES</p>				
	<p>SUPPLY & LAYING AND FIXING OF HDPE PIPES AND FITTINGS TO THE DISTRIBUTION SYSTEM</p>				

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#02 DISTRIBUTION NETWORK

	Note:- Rate to be included for breaking out asphalt, concrete or any other artificially hard material layer where necessary, excavation, shoring and dewatering where necessary, delivering material to the site, trimming, installation of polythene sleeving, laying, cutting grinding jointing of pipes, Suitable bedding materials compacted backfilling with selected excavated material up to a level up to the finished surface of the reinstatement, match with the road reinstatement disposal of surplus excavated materials, laying of marker tape, cleaning and disinfections, pressure testing of HDPE pipes				
	Note:- Pipes not in Trenches shall cover the whole of the works other than the works stated in Class L. Rates shall comprise delivering, placing in position, fixing to the supports with Pipe brackets as per the Drawings and Specifications of the Pipes, excavation, filling with imported soil, dewatering, upholding sides of excavation where necessity prevails as per the site condition				
	<u>HDPE (PE 100-SDR 11) Pipes with butts fusion welded joints in trenches depth not exceeding 1.5 m.</u>				
2.001	63 mm dia. pipes	m	11600.00		-
2.002	90 mm dia. pipes	m	3200.00		-
2.003	110 mm dia. pipes	m	2000.00		-
2.004	160 mm dia. Pipes	m	230.00		-
2.005	225 mm dia. Pipes	m	45.00		-
	<u>HDPE (PE 100-SDR 11) Pipes with butts fusion welded joints in trenches depth 1.5 m –2.0 m.</u>				-
2.006	63 mm dia. pipes	m	30.00		-
2.007	90 mm dia. pipes	m	100.00		-
2.008	110 mm dia. pipes	m	100.00		-
2.009	160 mm dia. Pipes	m	20.00		-
2.010	225 mm dia. Pipes	m	10.00		-
	CESMM3 CLASS J				-
	PIPE WORK – FITTINGS AND VALVES				-
	FIXING OF FITTINGS				-
	Note:- Rates shall cover the cost of Supply, laying and fixing in position of all PE repair sockets and such DI couplings which are not indicated in the drawings but laid and fixed to the contractor's discretion				-
	Note:- Rates of Fittings and Valves shall cover the extra cost of such Fittings and Valves which are not in trenches as per the detail drawing.				-
	<u>HDPE Socketed bends-63 mm dia.</u>				-
2.011	45 deg. bend	nr	18		-
2.012	90 deg. Bend	nr	49		-
	<u>HDPE Socketed bends-90 mm dia.</u>				-
2.013	45 deg. bend	nr	1		-
2.014	90 deg. Bend	nr	7		-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#02 DISTRIBUTION NETWORK

	HDPE Socketed bends-110 mm dia.				-
2.015	45 deg. bend	nr	3		-
2.016	90 deg. Bend	nr	3		-
	HDPE Socketed bends-160 mm dia.				-
2.017	45 deg. bend	nr	1		-
2.018	90 deg. Bend	nr	1		-
	HDPE Socketed bends-225 mm dia.				-
2.019	45 deg. bend	nr	1		-
2.020	90 deg. Bend	nr	2		-
	NOTE:- SUPPLY, LAYING AND JOINTING OR FIXING OF HDPE PIPES, SPECIALS, FITTINGS AND VALVES AT JUNCTIONS.				-
	Note:- Rate to be included for additional safety measures, traffic controlling, excavation, shoring, dewatering, preparation of surfaces, disposal of excavated materials, upholding sides of excavation, compacted backfilling for fittings and all necessary items of work required for completion of work as per the drawings and specifications.				-
	Note:- Rates for Valves shall also include supplying cost of Nuts and Bolts, Washers, mastic protection for exposed bolts and stem, isolating cocks and operating keys and such other accessories as per the specifications				-
	FITTINGS FOR PIPE WORK				-
	HDPE Socketed Tee				-
2.021	63 x 63 mm	nr	118		-
2.022	90 x 63 mm	nr	40		-
2.023	90 x 90 mm	nr	27		-
2.024	110 x 63 mm	nr	45		-
2.025	110 x 90 mm	nr	8		-
2.026	110 x 110 mm	nr	10		-
2.027	160 x 63 mm	nr	6		-
2.028	160 x 90 mm	nr	1		-
2.029	160 x 110 mm	nr	1		-
2.030	160 x 160 mm	nr	3		-
2.031	225 x 160 mm	nr	1		-
	HDPE Reducing socket				-
2.032	90 x 63 mm	nr	28		-
2.033	110 x 63 mm	nr	5		-
2.034	110 x 90 mm	nr	11		-
2.035	160 x 63 mm	nr	5		-
2.036	160 x 110 mm	nr	4		-
2.037	160 x 110 mm	nr	1		-
	HDPE End cap				-
2.038	63 mm dia.	nr	26		-
2.039	90 mm dia.	nr	1		-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME
EMPLOYER-Ministry of Environment and Energy

BILL#02 DISTRIBUTION NETWORK

	VALVES				-
	Rates shall cover the cost of storage, delivery to the Site, laying and fixing in position of DI/HDPE Fittings				-
	Rate to be included for additional safety measures, traffic controlling, excavation, shoring, dewatering, preparation of surfaces, disposal of excavated materials, upholding sides of excavation, compacted backfilling for fittings and all necessary items of work required for completion of work as per the drawings and specifications.				-
	Rates for fixing Valves shall also include fixing of fittings and supplying cost of Nuts and Bolts, Washers, mastic protection for exposed bolts and stem, isolating cocks and operating keys and such other accessories as per the specifications				-
	VALVES				-
	Sluice Valves for HDPE mains as per the drawing				-
2.040	50 mm dia. Flanged Sluice Valves.	nr	3		-
2.041	80 mm dia. Flanged Sluice Valves	nr	12		-
2.042	100 mm dia. Flanged Sluice Valves	nr	3		-
2.043	200 mm dia. Flanged Sluice Valves	nr	2		-
	AIR VALVES				-
	Single Orifice Air valves as per the drawing.				-
2.044	25mm single air valve	nr	5		-
	WASHOUT VALVES				-
	Valve for Washouts as per the drawing.				-
2.045	50 mm dia DI double Flanged Washout valve Rate To be Include for All Necessary Fittings. As per the Details Drawing & Specification	nr	4		-
	CESMM3 CLASS K				-
	PIPE WORK ANCILLARIES				-
	CONSTRUCTION OF VALVE CHAMBERS AND PIPE WORK ANCILLARIES				-
	Note:- Rate to be included for excavation, preparation of surfaces, disposal of excavated materials, upholding sides of excavation, backfilling, compacted granular filling, reinstatement to damaged carriageways and road shoulders, 300 x 300 x 200mm porous material fill, concrete, reinforcement, formwork, forming holes, joints and finishes, dewatering, MS Steps, fixing manhole cover including frame, chamber cover, dismantling joint or flange adaptors if required and other related items as indicated in the drawings and specification				-
	Note:- Depth of the chamber is measured from top of the chamber cover to top of the base slab				-
	Sluice Valve Chamber as shown in detail Drawing No: Naifaarru/STD/04				-
2.046	Sluice valve chamber depth not exceeding 1.5m	nr	20		-
	25mm Dia Single Orifice Air Valve Chamber - Type A for washout as shown in detail Drawing No: Naifaarru/STD/06				-
	Single Orifice Air valve chamber depth not exceeding 1.5m	nr	5		-
	Outlet Chamber - Type A for washout as shown in detail Drawing No: Naifaarru/STD/06				-
2.048	50mm Dia Washout chamber Type A , depth not exceeding 1.5m	nr	4		-
	Marker Posts				-
2.049	Supply and installation of valve indicator blocks at each chamber and surface box location, complete as shown in drawing No: Naifaarru/STD/07	nr	29		-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#02 DISTRIBUTION NETWORK

	Fire Hydrant				-
	Supply and installation of valve indicator blocks at each chamber and surface box location, completeAs per the Specification & as shown in drawing No: Naifaarru/STD/09	Nr	4		-
	CESMM3 CLASS L				-
	PIPE WORK – SUPPORTS AND PROTECTION, ANCILLARIES TO LAYING AND EXCAVATION				-
	Note:- Rate of excavations to be included for safety measures, excavation, preparing of surfaces, disposal of excavated material, upholding sides of excavation and dewatering.				-
	Note:- Rate of backfilling shall comprise the cost of filling material, transporting, storing at or adjacent to the site, compaction as per the drawings and specifications and filling to additional excavations over the theoretical volume specified				-
	Note:- Excavations and backfilling to excavations are measured to the net theoretical volume required, no additional payment is allowed for volume over excavated, providing working spaces and bulking conditions of the backfilling materials				-
	Note:- Excavation of soft rock, artificial hard material, rock within the profile of other material are not considered as excavation of rock				-
	Note:- Depth of the rock excavation is considered to the invert of the pipe bore only				-
	Note:- Backfilling to trenches are measured along the centerline of the Pipe bore				-
	Note:- Backfilling to trenches are not paid unless the depth of the filling is up to the required depth of the relevant backfilling strata as shown in the drawings				-
	Note:- Rates of Stools and Thrust Blocks deemed to include for additional costs under submerged conditions				-
	Note:- Rates for precast pipe supports not in trenches at lagoon crossing shall cover the cost of supply and fabricating of reinforcements, additional widths and depths to suit the site conditions, transporting to the relevant position, storing at site, lifting and driving for support blocks, excavating, backfilling, upholding the sides of excavations and dewatering where necessary				-
2.051	Extras to excavation in trenches and chambers and concrete pipe supports excavation of rock - Explosive blasting	m3	1500		-
2.052	Extras to excavation in trenches and chambers, excavation of rock - Non explosive blasting	m3	50		-
	STOOLS AND THRUST BLOCKS				-
2.053	Concrete grade 20 block support for Sluice valve	nr	20		-
2.054	Concrete grade 20 block support for Tee for Washout valve	nr	4		-
2.055	Concrete grade 20 block support for Tees for Air valve	nr	5		-
2.056	Concrete grade 20 thrust blocks for Bends in PVC main	nr	86		-
2.057	Concrete grade 20 thrust blocks for 63mm dia, PVC Tees	nr	118		-
2.058	Concrete grade 20 thrust blocks for 90mm dia, PVC Tees	nr	67		-
2.059	Concrete grade 20 thrust blocks for 110mm dia, PVC Tees	nr	63		-
2.060	Concrete grade 20 thrust blocks for 160mm dia, PVC Tees	nr	11		-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME**EMPLOYER-Ministry of Environment and Energy****BILL#02 DISTRIBUTION NETWORK**

2.061	Concrete grade 20 thrust blocks for 225mm dia, PVC Tees	nr	1		-
2.062	Concrete grade 20 thrust blocks for PVC end caps	nr	27		
2.063	Concrete grade 20 thrust blocks for PVC Reducing socket	nr	54		
	<u>Rainwater Collection</u>				
2.064	Rainwater Collection network including first flush, Gate valves, Conveyance pipeline, sumps and acillaries	Item	1		
	<u>House Connection</u>				-
	Provision of house connections from themain pipe up to properties boundary As per the Specification & Deatails Drawing No:-Naifaru/STD/12				-
2.065	Main Line to Boundary length between 0-2m	nr	1200		
2.066	Main Line to Boundary length between 2-5m	nr	507		
TOTAL CARRIED TO GRAND SUMMARY					-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#3 RO Plant
Building

Item No	Description	Unit	Qty	Rate	Amount
	<u>SECTION - D</u>				
	<u>EXCAVATION AND EARTHWORK</u>				
	<u>Clearing</u>				
3.001	Clear site of all vegetation to an extent of 3.0m away from outer walls.	m ²	350.00		-
	<u>Excavation and Earth Work</u>				-
3.002	Excavating top soil for preservation an average depth 150 mm.	m ²	160.00		-
	<u>Rate to be included for levelling, compacting & dewatering where necessary.</u>				-
3.003	Excavating pits for column in any material other than rock, with depth not exceeding 1.00m from ground level.	m ³	61.90		-
3.004	Extra over item No. 03 for excavation in rock blasting prohibited (provisional Qty).	m ³	3.00		-
	<u>Disposal</u>				-
3.005	Disposal of excavated material away from site as directed by the Engineer.	m ³	39.00		-
3.006	Disposal of rock away from site as directed by the Engineer.	m ³	3.00		-
	<u>Filling</u>				-
3.007	Backfilling to column pits with selected excavated material up to a maximum thickness of 450mm compacted well rammed in layers of 150mm thick.	m ³	27.00		-
3.008	Filling under floors with selected excavated material up to a maximum thickness of 450mm, watered, compacted and well rammed in layers of 150mm thick.	m ³	12.00		-
3.009	Filling under floors with imported material up to a maximum thickness of 450mm, watered, compacted and well rammed in layers of 150mm thick.	m ³	10.00		-
	<u>SECTION - F</u>				-
	<u>CONCRETE WORKS</u>				-
	<u>Reinforcement & formwork measured separately unless otherwise stated.</u>				-
	<u>SECTION F1 - INSITU CONCRETE</u>				-
	<u>Mass Concrete - Grade 15</u>				-
3.010	In 50mm thick screed under column and staircase footing.	m ²	62.96		-
3.011	In 100mm thick Floor Concrete	m ³	15.20		-
	<u>Reinforced Concrete Grade 25</u>				-
3.012	In bases of columns.	m ³	23.88		-
3.013	In column shaft upto finish floor level.	m ³	0.45		-
3.014	In column shaft from finish floor level to Roof level.	m ³	2.10		-
3.015	In 150mm thick roof slab.	m ³	36.89		-
3.016	In 300 x 300mm Grade beams.	m ³	8.24		-
3.017	In 200 x 500 mm roof Slab beams.	m ³	1.65		-
3.018	In 200 x 400 mm roof slab beams.	m ³	5.75		-
3.019	In 200 x 200mm lintels at Doors & Windows (Rate to be included for necessary reinforcement, Form Work .)	m	13.00		-
	<u>SECTION F2 - FORM WORK</u>				-
	<u>Form work in approved timber. Rate to include for splayed edges, battens, strutting, bolting, wedging, easing, striking and removal</u>				-
	<u>Rough Finish Formwork</u>				-
3.020	To 50mm high sides of screed.	m	108.80		-
3.021	To not exceeding 400mm high sides of column bases.	m ²	49.25		-
3.022	To sides of 225x225mm column shaft upto finish floor level.	m ²	7.50		-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

BILL#3 RO Plant
Building

Item No	Description	Unit	Qty	Rate	Amount
	<u>Wrought Finish Formwork</u>				-
	<u>Ground Floor to Roof</u>				-
3.023	To sides of 200 x 200mm column shaft from finish floor level to first floor level.	m ²	9.60		-
3.024	To sides of 200 x 300mm column shaft from finish floor level to first floor level.	m ²	24.00		-
3.025	To soffit of Roof Slab.	m ²	210.00		-
3.026	To 200mm high edge of Roof slab.	m	62.00		-
3.027	To sides and soffits of Roof Slab beams.	m ²	91.70		-
3.028	To sides and soffit of Grade Beams	m ²	82.43		-
	<u>SECTION F3 - REINFORCEMENT IN INSITU CONCRETE</u>				-
	<u>Tor/Mild steel rod reinforcement cut to lengths, bent to shape, placed in position and tied with GI wire</u>				-
	<u>Mild steel</u>				-
3.029	Bar diameter 8mm	Kg	500.00		-
	<u>Tor Steel</u>				-
3.030	Bar diameter 10mm	t	1.80		-
3.031	Bar diameter 16mm	t	3.00		-
	<u>SECTION - G</u>				-
	<u>MASONRY WORKS</u>				-
	<u>SECTION G1 - BRICK WORK / BLOCK WORK</u>				-
3.032	225mm thick vertical straight, common brick walls in cement and sand mortar 1:6.	m ²	177.40		-
	<u>METAL WORK</u>				-
	<u>Doors and Windows</u>				-
	<u>All materials supplied, fabricated and fixed in position complete as shown in detail on drawing and as specified. Provision shall be made for breaking walls/ concrete floors whenever necessary and making good as directed.</u>				-
	<u>Rate to be included for supply and fix heavy quality brass ironmongery, including fixing with brass screws to match.</u>				-
	<u>Ground Floor</u>				-
3.033	Steel frame with Louvers (Type W1) of size 1000 x 1000 mm, Rate to be included all necessary fittings complete as shown in detail on drawing and as specified.	nr	6.00		-
3.034	Steel Door with Louvers (Type D2) of size 2000x800mm , Rate to be included all necessary fittings complete as shown in detail on drawing and as specified.	nr	1.00		-
3.035	Steel Door with Louvers (Type D1) of size 2500x2000mm , Rate to be included all necessary fittings complete as shown in detail on drawing and as specified.	nr	2.00		-
	<u>SECTION S</u>				-
	<u>ELECTRICAL INSTALLATIONS</u>				-
	<u>Note: All conduit pipes/ cables are to be concealed in walls and ceiling. Wiring to be completed up to M.C board. Rate to be included for necessary testing.</u>				-
	<u>All materials of approved quality (as per MEA regulations)supplied and fixed complete as directed. Rate to be included for all PVC/PVC/CU wiring involved as specified and switching including switches of approved make, complete to working order. All fixtures shall be of approved quality and make, to the satisfaction of the engineer and as the specification .</u>				-
3.036	Single-phase 30A 4PMCB, main circuit breaker and 40A DPELCB (30MA) with 32amp Ring circuit & 8x3 nr 6A Lamp & Fan circuit breakers incorporated in three plastic box with hinged door. Rate to include for suitable buss bar. Rate to be included All necessary fittings.	nr	01		-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME

EMPLOYER-Ministry of Environment and Energy

**BILL#3 RO Plant
Building**

Item No	Description	Unit	Qty	Rate	Amount
3.037	15amp. Switched socket outlet flushed type. Rate to be included All necessary fittings.	nr	12		-
3.038	Fluorescent lamp with prismatic diffuser 4 feet, electronic ballast type (single). Rate to be included All necessary fittings.	nr	8		-
	<u>SECTION T</u>				-
	<u>FLOOR/WALL/CEILING FINISHES</u>				-
	<u>SECTION T1 - FLOOR FINISHES</u>				-
	<u>Floor</u>				-
3.039	12mm thick rendering in cement sand mortar 1:3 finished smooth with neat cement floating of approved colour.	m ²	152.00		-
3.040	12mm thick 100mm high 1:3 cement sand mortar skirting to matching colour to the floor.	m	65.00		-
	<u>Roof Slab</u>				-
3.041	12mm thick rendering in 1:3 cement sand mortar finished smooth with neat cement floating of approved colour.	m ²	152.00		-
	<u>SECTION T2 - WALL AND CEILING FINISHES</u>				-
3.042	16mm thick internal plastering in cement, lime and sand mortar 1:1:5 and finished smooth with lime putty, including beams and columns.	m ²	228.40		-
3.043	16mm thick external plastering in cement, lime and sand mortar 1:1:5 and finished semi rough, including beams and columns.	m ²	144.40		-
3.044	63mm wide 16mm thick external door & window reveals in cement, lime and sand 1:1:5 and finished semi rough.	m	47.60		-
3.045	63mm wide 16mm thick internal door & window reveals in cement, lime and sand 1:1:5 and finished smooth with lime float.	m	47.60		-
	<u>SECTION V</u>				-
	<u>PAINTING</u>				-
	<u>Ground Floor</u>				-
3.046	Preare and apply one coat of wall primer and two coats of approved quality emulsion paint on all surfaces of internal walls including beams and columns.	m ²	228.40		-
3.047	Prepare and apply one coat of wall primer and two coats of approved quality weather proof emulsion paint on all surfaces of external walls including beams and columns.	m ²	144.40		-
3.048	Prepare and apply one coat of wall primer and two coats of approved quality emulsion paint on soffit of slab.	m ²	152.00		-
	<u>Tube Well</u>				-
3.049	Prepare the Tube Well depth 32m As Per the Details Drawing & Specification.	Nr	2.00		-
	<u>Yard Piping</u>				
3.050	110mm Dia Brine Ouut Line	m	70.00		
3.051	150mm Dia Resovior Cleaning Line	m	50.00		
3.052	80mm Dia Chlorine Conection Line	m	30.00		
	<u>Brine Outfall</u>				
3.053	Laying of Brine outfall pipline & diffuser head as per drawings	Item	1.00		
	<u>Miscellaneous Items</u>				
3.054	Interlock paving with compacted crusher dust, concrete edges complete as per drawings	m ²	350.00		
3.055	Construction of Entrance gate and Boundary wall of 2.0m heigh	Item	1.00		
	TOTAL CARRIED TO GRAND SUMMARY				-

PROJECT-LH NAIFARU WATER SUPPLY SCHEME**EMPLOYER-Ministry of Environment and Energy****BILL#4 Supply & Insolation**

Item No	Description	Unit	Qty	Rate	Amount
4.001	Supply & Installation For Reverse Osmosis Plant 2 nos . At Naifaarru. As per the Specification and Drawings.	item	1		-
4.002	Supply & Installation For Fire Protection system at Naifaarru RO Plant. As per the Specification	item	1		-
4.003	Supply and install brine pump and connect the brine outfall line to the Sewerage effluent outfall as shawn in the drawings	item	1		-
4.004	Supply & Installation For Lightning Protection. At Naifaarru Ro Plant. As per the Specification	item	1		-
4.005	Supply & Installation For High Lift Pump System. At Naifaarru Ro Plant. As per the Specification	item	1		-
4.006	Supply & Installation For Brine Water Pump. At Naifaarru Ro Plant Rate to be Included for Chamber, Valves & necessary Fittings . As per the Specification as per the Details Drawing Naifaarru/RO/03	item	1		-
4.007	Supply and Installation of Tube well pumps as per Specification and Drawings	item	1		
4.008	Supply and Installation of Disinfection Unit as per sepecification and Drawings	item	1		
4.009	Supply and installation of control panels for the system	item	1		
4.010	Supply and Installation of Monitoring system for Water supply system	Item	1		
	TOTAL CARRIED TO GRAND SUMMARY				-

Item No	Description	Unit	Qty	Rate	Amount
	<u>SECTION - D</u>				
	<u>EXCAVATION AND EARTHWORK</u>				
	Excavation and Earth Work				-
	Rate to be included for levelling, compacting and dewatering where necessary.				-
5.001	Excavating pits for column in any material other than rock, with depth not exceeding 1.00m from ground level. (provisional Qty).	m3	368.00		-
5.002	Extra over item No. 02, 03, 04 & 05 for excavation in rock blasting prohibited (provisional Qty).	m3	3.00		-
	<u>Disposal</u>				
5.003	Disposal of excavated material away from site as directed by the Engineer.	m3	368.00		-
	<u>Filling</u>				
5.004	Filling under floors with selected excavated material up to a maximum thickness of 450mm, watered, compacted and well rammed in layers of 150mm thick.	m3	118.00		-
	<u>SECTION - F</u>				
	<u>CONCRETE WORKS</u>				
	Reinforcement and formwork measured separately unless otherwise stated.				-
	<u>SECTION F1 - INSITU CONCRETE</u>				
	<u>Mass Concrete - Grade 15</u>				
5.005	In 100mm thick screed under column	m2	37.00		
5.006	Column Concrete	m3	285.00		
	<u>Reinforced Concrete Grade 20</u>				
5.007	In 225mm thick Base concrete under Column	m3	93.00		-
5.008	In Beam.	m3	49.00		-
5.009	In Slap	m3	39.60		
	<u>SECTION F2 - FORM WORK</u>				
	<u>Form work in approved timber. Rate to include for splaved edges, battens, strutting, bolting, wedging, easing, striking and removal</u>				
	<u>Rough Finish Formwork</u>				
5.010	To 100mm high sides of screed.	m	81.00		-
5.011	To not exceeding 225mm high sides of column bases	m2	355.80		
5.012	To sides of 230x230mm column shaft upto finish floor level.	m2	1049.00		
	<u>Wrought Finish Formwork</u>				
	<u>Ground Floor to Roof</u>				
5.013	To sides of 230 x 230mm column shaft from finish floor level to slap level.	m2	1034.00		
5.014	To sides of 200 x 300mm column shaft from finish floor level to first floor level.	m2	368.00		
	<u>SECTION F3 - REINFORCEMENT IN INSITU CONCRETE</u>				
	<u>Tor/Mild steel rod reinforcement cut to lengths, bent to shape, placed in position and tied with GI wire</u>				
	<u>Mild steel</u>				
5.015	Bar diameter 8mm	t	0.95		-
	<u>Tor Steel</u>				
5.016	Bar diameter 10mm	t	2.06		-
	<u>Supply & Fixing RTP Tank</u>				
5.017	Supply & Insolation for RTP Tank 650m3 capacity each. As per the Specification & Details Drawing (rate includes supply installation and fixing of required accessories)	Nr	2		
	TOTAL CARRIED TO GRAND SUMMARY				-