

BILL OF QUANTITIES

Construction of Sewerage Facilities on the Island of HDh.Nolhivaranfaru, K.Himmafushi & K.Thulusdhoo

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

PROJECT GRAND SUMMARY OF BILLS OF QUANTITIES

***Construction of Sewerage Facilities on the Island of
HDh.Nolhivaranfaru, K.Himmafushi & K.Thulusdhoo***

DESCRIPTION	AMOUNT (MRF)	%
1 SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU		
2 SEWERAGE SYSTEM IN K.HIMMAFUSHI		
3 SEWERAGE SYSTEM IN K.THULUSDHOO		
TOTAL AMOUNT	-	

BILL OF QUANTITIES

SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

SUMMARY OF BILLS OF QUANTITIES
SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU

DESCRIPTION	AMOUNT (MRF)	%
Bill №: 01 - GENERAL WORKS		
Bill №: 02 - GRAVITY SEWERAGE 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

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

SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU**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 No: 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 - DECOMISSIONING				
3.1.00	Decomissioning of existing septic tanks and small bore gravity sewers upon completion and testing and comissioning 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
SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU
02 GRAVITY SEWARAGE 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	-	

SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU
02 GRAVITY SEWERAGE 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				
	(g) Rates shall include for 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.				
1.2.00	Excavation Works				
1.2.01	Excavation for PS1	33.60	m ³		
1.2.02	Excavation for PS2	33.60	m ³		
1.2.03	Excavation for PS3	34.35	m ³		
1.2.04	Excavation for PS4	33.60	m ³		
1.3.00	Concrete Works				
1.3.01	Lean concrete for PS1	2.74	m ³		
1.3.02	Lean concrete for PS2	2.74	m ³		
1.3.03	Lean concrete for PS3	2.74	m ³		
1.3.04	Lean concrete for PS4	2.74	m ³		
1.3.05	Reinforced concrete for PS1	19.80	m ³		
1.3.06	Reinforced concrete for PS2	19.80	m ³		
1.3.07	Reinforced concrete for PS3	20.09	m ³		
1.3.08	Reinforced concrete for PS4	19.80	m ³		
1.4.00	Plastering works				
1.4.01	Plastering works for PS1	75.35	m ²		
1.4.02	Plastering works for PS2	75.35	m ²		
1.4.03	Plastering works for PS3	76.32	m ²		
1.4.04	Plastering works for PS4	75.35	m ²		
1.5.00	Internal coating (500 Micron Epoxy coating)				
1.5.01	Coating for PS1	50.50	m ²		
1.5.02	Coating for PS2	50.50	m ²		
1.5.03	Coating for PS3	51.30	m ²		
1.5.04	Coating for PS4	50.50	m ²		
1.6.00	Bituminous External coating				
1.6.01	External coating for PS1	75.35	m ²		
1.6.02	External coating for PS2	75.35	m ²		
1.6.03	External coating for PS3	76.32	m ²		
1.6.04	External coating for PS4	75.35	m ²		
1.7.00	Covers and Ancillaries				
1.7.01	Access Cover for PS1	2.00	nos		
1.7.02	Access Cover for PS2	2.00	nos		
1.7.03	Access Cover for PS3	2.00	nos		
1.7.04	Access Cover for PS4	2.00	nos		
1.8.00	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=10.5 l/s, Head=21.4m each	2.00	nos.		
2.2.02	Submersible Pumps 7.1kW (Pump Station 02) - Pump Capacity,Pump Capacity, Qdp=8.6 l/s, Head=23.2m each	2.00	nos.		
2.2.03	Submersible Pumps 7.1kW (Pump Station 03) - Pump Capacity,Pump Capacity, Qdp=5.6 l/s, Head=19.4m each	2.00	nos.		
2.2.04	Submersible Pumps 8.9kW (Pump Station 04) - Pump Capacity,Pump Capacity, Qdp=11.3 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	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	1,313.00	m		
2.5.02	Pumping main 160mm dia. HDPE PE100 SDR11 PN16 pipe	78.00	m		
2.5.03	Pumping main 200mm dia. HDPE PE100 SDR11 PN16 pipe	290.00	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	1.00	Item		
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)	70.00	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		
3.4.00	Monitoring system for STP including all necessary cabling and wiring.	1.00	Item		
3.5.00	Preparation of electrical drawings and obtaining approval from MEA	1.00	Item		
3.6.00	Testing and Commissioning of the complete electrical system.	1.00			
3.7.00	TOTAL OF BILL №: 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 (type2). (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)	12,286.00	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	163.00	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	629.00	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	121.00	nos.		
4.6.00	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/m². 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	7.78	m³		
	Reinforced Concrete for Grit channel	15.45	m³		
5.2.02	4900x5600 oil and grease trap - including 300mm RC base and walls, 150mm RC top, SS checkered plates, etc				
	Excavation for Oil and Grease trap	21.95	m³		
	Reinforced Concrete for Oil and Grease trap	29.04	m³		
5.2.03	7900x6600x3100mm depth equalization tank - including 400mm thick RC base, 300mm thick RC walls, etc				
	Excavation for Equalization Tank	61.21	m³		
	Reinforced Concrete for Equalization Tank	49.21	m³		
5.2.04	10750x6750x5325mm 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	271.62	m³		
	Reinforced Concrete for Aeration Tank	208.13	m³		
5.2.05	4300mm dia. x 4200mm depth clarifier (2nos) - including 450mm thick RC base, 300mm thick RC walls, 50mm dia. GI hand rail				
	Excavation for Clarifier	109.44	m³		
	Reinforced Concrete for Clarifier	65.79	m³		
5.2.06	2500mm dia. x 2500mm 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	m³		
	Reinforced Concrete for Sludge Holding Tank	36.90	m³		
5.2.07	2600x5600x3900mm depth clear water tank - including 400mm thick RC base, 300mm thick RC walls, etc				
	Excavation for Clear Water Tank	19.76	m³		
	Reinforced Concrete for Clear Water Tank	30.41	m³		
5.2.08	17500x6100mm 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	m³		
	Reinforced Concrete for Sludge Holding Beds	76.30	m³		
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	m³		
	Reinforced Concrete for Effluent Tank	6.08	m³		

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 (Q=1.63l/s , H=5m)	2.00	no.		
5.3.02	EQT - Aerator pump - 5kw Submersible Pump controlled By Level sensors (float switch) (Q=5 l/s , H=15m)	2.00	no.		
5.3.03	Sludge Holding Tank Pump - 2.5kw Submersible pump controlled By Level sensors (float switch) (Q=2 l/s , H=7m)	4.00	no.		
5.3.04	Aeration Blowers - 11kw Twin lobe design controlled By manual operation (580m3/hr @ .6kg/cm2)	3.00	no.		
5.3.05	Effluent Tank Pump - 1.5kw Submersible pump controlled By Level sensors (float switch) (Q=1 l/s , H=6m)	2.00	no.		
5.3.06	Sea Outfall pump - 10.5kw pump controlled By Level sensors (float switch) (Q=16.3 l/s , H=16.6m)	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 200mm dia, HDPE sea outfall pipe (PE 100, PN16, SDR11). The minimum depth of diffuser head from MSL is 15m and away from reef edge.	350.00	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 employee'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		
8.5.00	TOTAL OF BILL №: 08 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN HDH.NOLHIVARANFARU
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		

SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU
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 preperation and Paving of the Pathways sourrounding the STP and admin buiilding Site	m2	359.00		
1.3.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.0.00	Bill №: 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 №: 02 - Carried Over To Summary				

ITEM	DESCRIPTION		UNIT	QTY	RATE	AMOUNT
3.0.00	Bill №: 03 - INSITU CONCRETE WORKS					
3.1.00	<u>GENERAL</u>					
	(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	<u>MASS CONCRETE</u>					
		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	<u>REINFORCED INSITU CONCRETE</u>					
	<u>SUB-STRUCTURE</u>					
		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	<u>GROUND FLOOR</u>					
		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 №: 03 - Carried Over To Summary					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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> <p>(a)</p>				
4.2.00	<u>BLOCK WORK</u>				
	Cement block wall, bricks laid to form alternate courses of headers and stretchers, laid on and inc. mortar. (INTERNAL & EXTERNAL WALLS)				
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5.0.00	Bill №: 05 - CEILING				
5.1.00	<u>GENERAL</u> (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	<u>CEILING</u>				
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 №: 05 - Carried Over To Summary				

ITEM	DESCRIPTION		UNIT	QTY	RATE	AMOUNT
6.0.00	Bill №: 06 - DOORS AND WINDOWS					
6.1.00	<u>GENERAL</u>					
	(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, (b) glazing, tinting, timber panels, boardings, framing, lining, fastenings and all fixings. (c) Sizes are given overall outside dimensions of actual doors and windows. (d) Thickness and sizes of glass panels are shown on the Drawings and doors and windows schedule (e) Rates shall include for all painting as specified (f) Rates shall include all items specified in the door schedule and specification. (g) Frames and sashes to be 25-60 micron black powder coated aluminium other wise specified.					
6.2.00	<u>DOOR & WINDOWS</u>					
	<u>GROUND FLOOR</u>					
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					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8.0.00	Bill №: 08 - FINISHING				
8.1.00	<u>GENERAL</u> 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	<u>PLASTERING</u> 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	<u>CEMENT SCREED</u> 35 mm thick cement screed				
8.3.01	GROUND FLOOR	m ²	117.56		
8.4.00	<u>FLOOR TILING</u> 300 x 300 Ceramic tiles				
8.4.01	GROUND FLOOR	m ²	42.52		
	Toilets floor 300 x 300 Ceramic Non-Slip tiles				
8.4.02	GROUND FLOOR	m ²	6.24		
	toilet wall 300 x 300 Ceramic Non-Slip tiles				
8.4.03	GROUND FLOOR	m ²	38.11		
8.5.00	TOTAL OF BILL №: 08 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9.0.00	Bill №: 09 - PAINTING & DECORATIONS				
9.1.00	<u>GENERAL</u> 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	<u>PAINTING</u> WALL PAINTING Emulsion paint finish including putty application on brick walls as specified (EXTERNAL SURFACES) GROUND FLOOR	m ²	703.15		
9.2.01					
9.2.03	Emulsion paint finish including putty application on brick walls as specified (INTERNAL SURFACES) GROUND FLOOR	m ²	355.59		
	CEILING PAINTING Emulsion paint finish including putty application on brick walls as specified (INTERNAL & EXTERNAL SURFACES) GROUND FLOOR	m ²	76.42		
9.2.04					
9.3.00	TOTAL OF BILL №: 09 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10.0.00	Bill №: 10 - HYDRAULICS AND DRAINAGE				
10.1.00	<u>GENERAL</u>				
	<p>Rates shall include for: sockets, running joints, connectors, elbows, junctions, valves, reducers, expansion joints; backnuts and similar;</p> <p>(a) incidental fittings, clips, saddles, brackets, straps, hangers, screws, nails and fixing complete including cutting and forming holes; excavating, laying pipes and backfilling trenches.</p> <p>(b) All pipe work and fittings shall be uPVC.</p>				
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	<u>SANITARY FITTINGS</u>				
	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	<u>SEWER AND WASTE WATER DRAINAGE SYSTEM</u>				
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
11.0.00	Bill №: 11 - MECHANICAL & ELECTRICAL SERVICES				
11.1.00	<u>GENERAL</u>				
	Design, provide and install electrical network for the entire (a) building complete in accordance to standards set by the local governing authority. The cost shall include for: screws, nails, bolts, nuts, standard cable (b) fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories. Rates for electrical isolators, conduits, fittings, equipment and (c) similar items shall include for: all fixings to various building surfaces. (d) A light fixture is measured as one point; switch end of wire is not included in the quantity. A point wiring for power points is measured (regardless of 1 gang, 2 (e) gang etc) as one point for each socket outlet; other end of wire is not included in the quantity. All under ground cables directly buried in ground/run in trenches to be properly laid and covered with cable tiles/trench covers. Rate (f) 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. The contractor shall provide a schedule of all builder's work in (g) connection with details of such items as necessary, along with the tender. (h) Rates for materials/ plants/ equipments not approved for duty free facilities to be quoted on duty paid basis. All equipments shall be guaranteed for a period of 12 months from (i) the date of commissioning or date of practical completion of the project which ever later The rate shall include for insurance during handling, rehandling, (j) transport, storage until ready for installation, delivery of equipments up to the point of installation and until handing over. (k) The rates shall include for comprehensive maintenance during defects liability period of 12 months from the date of handing over Rate shall include for supply, installation, maintaining, testing and (l) commissioning of the system for power and lighting according to drawings and specifications to working order. (m) All materials, equipment wiring shall confirm to local codes, specifications, standards/latest I.E.E. regulations (BS 7671).				
11.2.00	<u>ELECTRICAL BOARDS</u>				
11.2.01	DISTRIBUTION BOX GROUND FLOOR		1.00		
11.3.00	<u>POINT WIRING AND FITTINGS</u>				
	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 1.5mm2 PVC/PVC/Cu + 2.5mm2 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 2.5mm2 PVC/PVC/Cu + 2.5mm2 PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for following Socket outlet/isolator point wiring Wiring points	nr	62.00		
11.4.00	<u>SOCKETS</u>				
	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		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
12.0.00	Bill №: 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	m²	146.40		
12.2.02	Mineral Wool Insulation in between Purlins	m²	146.40		
	<u>ROOF TRUSS</u>				
12.2.03	50x150mm Timber Rafters @900c/c	m²	146.40		
12.2.04	50x38mm Timber Purlins @ 600 c/c	m²	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 №: 12 - Carried Over To Summary				

SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU
04 PROVISIONAL SUMS
Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROVISIONAL SUMS				
	A Maximum of MVR 1,000,000.00				
1.2.00	TOTAL OF PROVISIONAL SUMS - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU
DAYWORKS

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

SEWERAGE SYSTEM IN HDH.NOLHIVARANFARU**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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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

SEWERAGE SYSTEM IN K.HIMMAFUSHI

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

SUMMARY OF BILLS OF QUANTITIES
SEWERAGE SYSTEM IN K.HIMMAFUSHI

DESCRIPTION	AMOUNT (MRF)	%
Bill №: 01 - GENERAL WORKS		
Bill №: 02 - GRAVITY SEWERAGE 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
SEWERAGE SYSTEM IN K.HIMMAFUSHI
01 GENERAL WORKS

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

SEWERAGE SYSTEM IN K.HIMMAFUSHI**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 No: 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 - DECOMISSIONING				
3.1.00	Decomissioning of existing septic tanks and small bore gravity sewers upon completion and testing and comissioning 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
SEWERAGE SYSTEM IN K.HIMMAFUSHI
02 GRAVITY SEWARAGE 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	-	

SEWERAGE SYSTEM IN K.HIMMAFUSHI
02 GRAVITY SEWERAGE 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				
	(g) Rates shall include for 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.				
1.2.00	Excavation Works				
1.2.01	Excavation for PS1	34.35	m ³		
1.2.02	Excavation for PS2	34.35	m ³		
1.2.03	Excavation for PS3	34.35	m ³		
1.2.04	Excavation for PS4	34.35	m ³		
1.3.00	Concrete Works				
1.3.01	Lean concrete for PS1	2.74	m ³		
1.3.02	Lean concrete for PS2	2.74	m ³		
1.3.03	Lean concrete for PS3	2.74	m ³		
1.3.04	Lean concrete for PS4	2.74	m ³		
1.3.05	Reinforced concrete for PS1	20.68	m ³		
1.3.06	Reinforced concrete for PS2	20.68	m ³		
1.3.07	Reinforced concrete for PS3	20.68	m ³		
1.3.08	Reinforced concrete for PS4	20.68	m ³		
1.4.00	Plastering works				
1.4.01	Plastering works for PS1	75.83	m ²		
1.4.02	Plastering works for PS2	75.83	m ²		
1.4.03	Plastering works for PS3	75.83	m ²		
1.4.04	Plastering works for PS4	75.83	m ²		
1.5.00	Internal coating (500 Micron Epoxy coating)				
1.5.01	Coating for PS1	51.28	m ²		
1.5.02	Coating for PS2	51.28	m ²		
1.5.03	Coating for PS3	51.28	m ²		
1.5.04	Coating for PS4	51.28	m ²		
1.6.00	Bituminous External coating				
1.6.01	External coating for PS1	75.83	m ²		
1.6.02	External coating for PS2	75.83	m ²		
1.6.03	External coating for PS3	75.83	m ²		
1.6.04	External coating for PS4	75.83	m ²		
1.7.00	Covers and Ancillaries				
1.7.01	Access Cover for PS1	2.00	nos		
1.7.02	Access Cover for PS2	2.00	nos		
1.7.03	Access Cover for PS3	2.00	nos		
1.7.04	Access Cover for PS4	2.00	nos		
1.8.00	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=8.1 l/s, Head=26.5m each	2.00	nos.		
2.2.02	Submersible Pumps 8.9kW (Pump Station 02) - Pump Capacity,Pump Capacity, Qdp=6.0 l/s, Head=20.9m each	2.00	nos.		
2.2.03	Submersible Pumps 8.9kW (Pump Station 03) - Pump Capacity,Pump Capacity, Qdp=4.4 l/s, Head=24.9m each	2.00	nos.		
2.2.04	Submersible Pumps 8.9kW (Pump Station 04) - Pump Capacity,Pump Capacity, Qdp=6.9 l/s, Head=16.9m 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	929.00	m		
2.5.02	Pumping main 160mm dia. HDPE PE100 SDR11 PN16 pipe	420.00	m		
2.5.03	Pumping main 200mm dia. HDPE PE100 SDR11 PN16 pipe	238.00	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	1.00	Item		
3.2.01	25 mm2 4-Core armoured cable (feeder to PS)	240.00	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 (4 Pump stations and admin building/STP)	1.00	Item		
3.4.00	Monitoring system for STP including all necessary cabling and wiring.	1.00	Item		
3.5.00	Preparation of electrical drawings and obtaining approval from MEA	1.00	Item		
3.6.00	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 (type2). (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)	14,358.00	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	231.00	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	265.00	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	127.00	nos.		
4.6.00	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 channel	7.78 13.81	m ³ m ³		
5.2.02	3900x5600 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	15.46 22.61	m ³ m ³		
5.2.03	6900x5600x3100mm depth equalization tank - including 400mm thick RC base, 300mm thick RC walls, etc Excavation for Equalization Tank Reinforced Concrete for Equalization Tank	45.32 39.74	m ³ m ³		
5.2.04	10750x6750x5325mm 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	230.23 186.32	m ³ m ³		
5.2.05	4700mm dia. x 4300mm depth clarifier (2nos) - including 450mm thick RC base, 300mm thick RC walls, 50mm dia. GI hand rail Excavation for Clarifier Reinforced Concrete for Clarifier	109.44 65.79	m ³ m ³		
5.2.06	2600 mm dia. x 2500 mm 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 Reinforced Concrete for Sludge Holding Tank	40.40 36.90	m ³ m ³		
5.2.07	2600x5600x3900mm depth clear water tank - including 400mm thick RC base, 300mm thick RC walls, etc Excavation for Clear Water Tank Reinforced Concrete for Clear Water Tank	14.56 24.05	m ³ m ³		
5.2.08	17500x6100mm 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 Reinforced Concrete for Sludge Holding Beds	106.80 76.30	m ³ 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 Reinforced Concrete for Effluent Tank	19.63 6.08	m ³ m ³		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
5.2.09	Complete electrical works required for pumps, connections, and accessories as needed	1.00	item		
5.2.10	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 (Q=1.27 l/s , H=5m)	2.00	no.		
5.3.02	EQT - Aerator pump - 5kw Submersible Pump controlled By Level sensors (float switch) (Q=5 l/s , H=15m)	2.00	no.		
5.3.03	Sludge Holding Tank Pump - 2.5kw Submersible pump controlled By Level sensors (float switch) (Q=2 l/s , H=7m)	4.00	no.		
5.3.04	Aeration Blowers - 11kw Twin lobe design controlled By manual operation (580m3/hr @ .6kg/cm2)	3.00	no.		
5.3.05	Effluent Tank Pump - 1.5kw Submersible pump controlled By Level sensors (float switch) (Q=1 l/s , H=6m)	2.00	no.		
5.3.06	Sea Outfall pump - 10.5kw pump controlled By Level sensors (float switch) (Q=12.7 l/s , H=24.1 m)	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 No: 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 200mm dia, HDPE sea outfall pipe (PE 100, PN16, SDR11). The minimum depth of diffuser head from MSL is 15m and away from reef edge.	850.00	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 employee'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		
8.5.00	TOTAL OF BILL No: 08 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWARAGE SYSTEM IN K.HIMMAFUSHI
03-ADMIN BUILDING

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

SEWERAGE SYSTEM IN K.HIMMAFUSHI
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 preperation and Paving of the Pathways sourrounding the STP and admin buiilding Site	m2	366.00		
1.3.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.0.00	Bill №: 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 №: 02 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.0.00	Bill №: 03 - INSITU CONCRETE WORKS				
3.1.00	<u>GENERAL</u>				
	<p>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</p> <p>(a)</p> <p>(b) Mix ratio for reinforced concrete shall be 1:2:3 and lean concrete shall be 1:2:6.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(g) All reinforcing bars shall be high strength bars.</p> <p>(h) Slab soffits to be finished fairfaced, use plasteciser and formwork with reducing agent.</p> <p>(i) Waterproofing shall be added to all areas specified.</p>				
3.1.01	Allow for Concrete Testing.	item	1.00		
3.2.00	<u>MASS CONCRETE</u>				
	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	<u>REINFORCED INSITU CONCRETE</u>				
	<u>SUB-STRUCTURE</u>				
	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	<u>GROUND FLOOR</u>				
	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 №: 03 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4.0.00	Bill №: 04 - MASONRY				
4.1.00	<u>GENERAL</u> 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.				
4.2.00	<u>BLOCK WORK</u> Cement block wall, bricks laid to form alternate courses of headers and stretchers, laid on and inc. mortar. (INTERNAL & EXTERNAL WALLS)				
4.2.01	150 mm thk full height 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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5.0.00	Bill №: 05 - CEILING				
5.1.00	<u>GENERAL</u> (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	<u>CEILING</u>				
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 №: 05 - Carried Over To Summary				

ITEM	DESCRIPTION		UNIT	QTY	RATE	AMOUNT
6.0.00	Bill №: 06 - DOORS AND WINDOWS					
6.1.00	<u>GENERAL</u>					
	(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, (b) glazing, tinting, timber panels, boardings, framing, lining, fastenings and all fixings. (c) Sizes are given overall outside dimensions of actual doors and windows. (d) Thickness and sizes of glass panels are shown on the Drawings and doors and windows schedule (e) Rates shall include for all painting as specified (f) Rates shall include all items specified in the door schedule and specification. (g) Frames and sashes to be 25-60 micron black powder coated aluminium other wise specified.					
6.2.00	<u>DOOR & WINDOWS</u>					
	<u>GROUND FLOOR</u>					
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					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8.0.00	Bill №: 08 - FINISHING				
8.1.00	<u>GENERAL</u> 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	<u>PLASTERING</u> 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	<u>CEMENT SCREED</u> 35 mm thick cement screed				
8.3.01	GROUND FLOOR	m ²	117.56		
8.4.00	<u>FLOOR TILING</u> 300 x 300 Ceramic tiles				
8.4.01	GROUND FLOOR	m ²	42.52		
	Toilets floor 300 x 300 Ceramic Non-Slip tiles				
8.4.02	GROUND FLOOR	m ²	6.24		
	toilet wall 300 x 300 Ceramic Non-Slip tiles				
8.4.03	GROUND FLOOR	m ²	38.11		
8.5.00	TOTAL OF BILL №: 08 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9.0.00	Bill №: 09 - PAINTING & DECORATIONS				
9.1.00	<u>GENERAL</u> 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	<u>PAINTING</u> WALL PAINTING Emulsion paint finish including putty application on brick walls as specified (EXTERNAL SURFACES) GROUND FLOOR	m ²	703.15		
9.2.01					
9.2.03	Emulsion paint finish including putty application on brick walls as specified (INTERNAL SURFACES) GROUND FLOOR	m ²	355.59		
	CEILING PAINTING Emulsion paint finish including putty application on brick walls as specified (INTERNAL & EXTERNAL SURFACES) GROUND FLOOR	m ²	76.42		
9.2.04					
9.3.00	TOTAL OF BILL №: 09 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10.0.00	Bill №: 10 - HYDRAULICS AND DRAINAGE				
10.1.00	<u>GENERAL</u>				
	<p>Rates shall include for: sockets, running joints, connectors, elbows, junctions, valves, reducers, expansion joints; backnuts and similar;</p> <p>(a) incidental fittings, clips, saddles, brackets, straps, hangers, screws, nails and fixing complete including cutting and forming holes; excavating, laying pipes and backfilling trenches.</p> <p>(b) All pipe work and fittings shall be uPVC.</p>				
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	<u>SANITARY FITTINGS</u>				
	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	<u>SEWER AND WASTE WATER DRAINAGE SYSTEM</u>				
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
11.0.00	Bill №: 11 - MECHANICAL & ELECTRICAL SERVICES				
11.1.00	<u>GENERAL</u>				
	Design, provide and install electrical network for the entire (a) building complete in accordance to standards set by the local governing authority. The cost shall include for: screws, nails, bolts, nuts, standard cable (b) fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories. Rates for electrical isolators, conduits, fittings, equipment and (c) similar items shall include for: all fixings to various building surfaces. (d) A light fixture is measured as one point; switch end of wire is not included in the quantity. A point wiring for power points is measured (regardless of 1 gang, 2 (e) gang etc) as one point for each socket outlet; other end of wire is not included in the quantity. All under ground cables directly buried in ground/run in trenches to be properly laid and covered with cable tiles/trench covers. Rate (f) 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. The contractor shall provide a schedule of all builder's work in (g) connection with details of such items as necessary, along with the tender. (h) Rates for materials/ plants/ equipments not approved for duty free facilities to be quoted on duty paid basis. All equipments shall be guaranteed for a period of 12 months from (i) the date of commissioning or date of practical completion of the project which ever later The rate shall include for insurance during handling, rehandling, (j) transport, storage until ready for installation, delivery of equipments up to the point of installation and until handing over. (k) The rates shall include for comprehensive maintenance during defects liability period of 12 months from the date of handing over Rate shall include for supply, installation, maintaining, testing and (l) commissioning of the system for power and lighting according to drawings and specifications to working order. (m) All materials, equipment wiring shall confirm to local codes, specifications, standards/latest I.E.E. regulations (BS 7671).				
11.2.00	<u>ELECTRICAL BOARDS</u>				
11.2.01	DISTRIBUTION BOX GROUND FLOOR		1.00		
11.3.00	<u>POINT WIRING AND FITTINGS</u>				
	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 1.5mm2 PVC/PVC/Cu + 2.5mm2 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 2.5mm2 PVC/PVC/Cu + 2.5mm2 PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for following Socket outlet/isolator point wiring Wiring points	nr	62.00		
11.4.00	<u>SOCKETS</u>				
	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		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
12.0.00	Bill №: 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	m²	146.40		
12.2.02	Mineral Wool Insulation in between Purlins	m²	146.40		
	<u>ROOF TRUSS</u>				
12.2.03	50x150mm Timber Rafters @900c/c	m²	146.40		
12.2.04	50x38mm Timber Purlins @ 600 c/c	m²	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 №: 12 - Carried Over To Summary				

SEWERAGE SYSTEM IN K.HIMMAFUSHI
04 PROVISIONAL SUMS
Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROVISIONAL SUMS				
	A Maximum of MVR 1,000,000.00				
1.2.00	TOTAL OF PROVISIONAL SUMS - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWERAGE SYSTEM IN K.HIMMAFUSHI
DAYWORKS

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

SEWERAGE SYSTEM IN K.HIMMAFUSHI
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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

SEWERAGE SYSTEM IN K.THULUSDHOO

CLIENT : MINISTRY OF ENVIRONMENT AND ENERGY

SUMMARY OF BILLS OF QUANTITIES
SEWERAGE SYSTEM IN K.THULUSDHOO

DESCRIPTION	AMOUNT (MRF)	%
Bill №: 01 - GENERAL WORKS		
Bill №: 02 - GRAVITY SEWERAGE 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
SEWERAGE SYSTEM IN K.THULUSDHOO
01 GENERAL WORKS

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

SEWERAGE SYSTEM IN K.THULUSDHOO**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 No: 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 - DECOMISSIONING				
3.1.00	Decomissioning of existing septic tanks and small bore gravity sewers upon completion and testing and comissioning 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
SEWERAGE SYSTEM IN K.THULUSDHOO
02 GRAVITY SEWARAGE 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	-	

SEWERAGE SYSTEM IN K.THULUSDHOO

02 GRAVITY SEWERAGE 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				
	(g) Rates shall include for 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.				
1.2.00	Excavation Works				
1.2.01	Excavation for PS1	35.78	m ³		
1.2.02	Excavation for PS2	37.39	m ³		
1.2.03	Excavation for PS3	38.19	m ³		
1.2.04	Excavation for PS4	38.99	m ³		
1.3.00	Concrete Works				
1.3.01	Lean concrete for PS1	2.89	m ³		
1.3.02	Lean concrete for PS2	2.89	m ³		
1.3.03	Lean concrete for PS3	2.89	m ³		
1.3.04	Lean concrete for PS4	2.89	m ³		
1.3.05	Reinforced concrete for PS1	20.44	m ³		
1.3.06	Reinforced concrete for PS2	21.05	m ³		
1.3.07	Reinforced concrete for PS3	21.35	m ³		
1.3.08	Reinforced concrete for PS4	21.65	m ³		
1.4.00	Plastering works				
1.4.01	Plastering works for PS1	77.22	m ²		
1.4.02	Plastering works for PS2	79.23	m ²		
1.4.03	Plastering works for PS3	80.23	m ²		
1.4.04	Plastering works for PS4	81.24	m ²		
1.5.00	Internal coating (500 Micron Epoxy coating)				
1.5.01	Coating for PS1	52.42	m ²		
1.5.02	Coating for PS2	54.05	m ²		
1.5.03	Coating for PS3	54.87	m ²		
1.5.04	Coating for PS4	55.68	m ²		
1.6.00	Bituminous External coating				
1.6.01	External coating for PS1	77.22	m ²		
1.6.02	External coating for PS2	79.23	m ²		
1.6.03	External coating for PS3	80.23	m ²		
1.6.04	External coating for PS4	81.24	m ²		
1.7.00	Covers and Ancillaries				
1.7.01	Access Cover for PS1	2.00	nos		
1.7.02	Access Cover for PS2	2.00	nos		
1.7.03	Access Cover for PS3	2.00	nos		
1.7.04	Access Cover for PS4	2.00	nos		
1.8.00	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 7.1kW (Pump Station 01) - Pump Capacity,Pump Capacity, Qdp=6.0 l/s, Head=14.6m each	2.00	nos.		
2.2.02	Submersible Pumps 7.1kW (Pump Station 02) - Pump Capacity,Pump Capacity, Qdp=6.6 l/s, Head=22.2m each	2.00	nos.		
2.2.03	Submersible Pumps 10.5kW (Pump Station 03) - Pump Capacity,Pump Capacity, Qdp=5.5 l/s, Head=29.2m each	2.00	nos.		
2.2.04	Submersible Pumps 10.5kW (Pump Station 04) - Pump Capacity,Pump Capacity, Qdp=8.7 l/s, Head=37.6m 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	537.00	m		
2.5.02	Pumping main 160mm dia. HDPE PE100 SDR11 PN16 pipe	896.00	m		
2.5.03	Pumping main 200mm dia. HDPE PE100 SDR11 PN16 pipe	186.00	m		
2.6.00	TOTAL OF BILL №: 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	1.00	Item		
3.2.01	25 mm2 4-Core armoured cable (feeder to PS)	240.00	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 (4 Pump stations and admin building/STP)	1.00	Item		
3.4.00	Monitoring system for STP including all necessary cabling and wiring.	1.00	Item		
3.5.00	Preparation of electrical drawings and obtaining approval from MEA	1.00	Item		
3.6.00	Testing and Commissioning of the complete electrical system.	1.00	Item		
3.7.00	TOTAL OF BILL №: 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 (type2). (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)	15,920.00	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	190.00	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	315.00	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	165.00	nos.		
4.6.00	TOTAL OF BILL N^o: 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/m². 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	7.78	m³		
	Reinforced Concrete for Grit channel	15.45	m³		
5.2.02	3900x5600 oil and grease trap - including 300mm RC base and walls, 150mm RC top, SS checkered plates, etc				
	Excavation for Oil and Grease trap	17.47	m³		
	Reinforced Concrete for Oil and Grease trap	24.60	m³		
5.2.03	7900x5600x3100mm depth equalization tank - including 400mm thick RC base, 300mm thick RC walls, etc				
	Excavation for Equalization Tank	51.94	m³		
	Reinforced Concrete for Equalization Tank	43.62	m³		
5.2.04	10750x6750x5325mm 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	271.62	m³		
	Reinforced Concrete for Aeration Tank	208.13	m³		
5.2.05	4700mm dia. x 4300mm depth clarifier (2nos) - including 450mm thick RC base, 300mm thick RC walls, 50mm dia. GI hand rail				
	Excavation for Clarifier	109.44	m³		
	Reinforced Concrete for Clarifier	65.79	m³		
5.2.06	2300mm dia. x 3000mm 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	m³		
	Reinforced Concrete for Sludge Holding Tank	36.90	m³		
5.2.07	2600x7600x3900mm depth clear water tank - including 400mm thick RC base, 300mm thick RC walls, etc				
	Excavation for Clear Water Tank	19.76	m³		
	Reinforced Concrete for Clear Water Tank	30.41	m³		
5.2.08	17500x6100mm 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	m³		
	Reinforced Concrete for Sludge Holding Beds	76.30	m³		
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	m³		
	Reinforced Concrete for Effluent Tank	6.08	m³		

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 (Q=1.34 l/s , H=5m)	2.00	no.		
5.3.02	EQT - Aerator pump - 5kw Submersible Pump controlled By Level sensors (float switch) (Q=5 l/s , H=15m)	2.00	no.		
5.3.03	Sludge Holding Tank Pump - 2.5kw Submersible pump controlled By Level sensors (float switch) (Q=2 l/s , H=7m)	4.00	no.		
5.3.04	Aeration Blowers - 11kw Twin lobe design controlled By manual operation (580m3/hr @ .6kg/cm2)	3.00	no.		
5.3.05	Effluent Tank Pump - 1.5kw Submersible pump controlled By Level sensors (float switch) (Q= 1 l/s , H=6m)	2.00	no.		
5.3.06	Sea Outfall pump - 12.6kw pump controlled By Level sensors (float switch) (Q=13.4 l/s , H= 24.3 m)	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 200mm dia, HDPE sea outfall pipe (PE 100, PN16, SDR11). The minimum depth of diffuser head from MSL is 15m and away from reef edge.	924.00	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 №: 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 employee'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		
8.5.00	TOTAL OF BILL No: 08 - Carried Over To Summary				

SUMMARY OF BILLS OF QUANTITIES
SEWORAGE SYSTEM IN K.THULUSDHOO
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		

SEWERAGE SYSTEM IN K.THULUSDHOO
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 preperation and Paving of the Pathways sourrounding the STP and admin buiilding Site	m2	315.00		
1.3.00	TOTAL OF BILL №: 01 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.0.00	Bill №: 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 №: 02 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.0.00	Bill №: 03 - INSITU CONCRETE WORKS				
3.1.00	<u>GENERAL</u>				
	<p>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</p> <p>(a)</p> <p>(b) Mix ratio for reinforced concrete shall be 1:2:3 and lean concrete shall be 1:2:6.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(g) All reinforcing bars shall be high strength bars.</p> <p>(h) Slab soffits to be finished fairfaced, use plasteciser and formwork with reducing agent.</p> <p>(i) Waterproofing shall be added to all areas specified.</p>				
3.1.01	Allow for Concrete Testing.	item	1.00		
3.2.00	<u>MASS CONCRETE</u>				
	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	<u>REINFORCED INSITU CONCRETE</u>				
	<u>SUB-STRUCTURE</u>				
	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	<u>GROUND FLOOR</u>				
	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 №: 03 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4.0.00	Bill №: 04 - MASONRY				
4.1.00	<u>GENERAL</u> 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.				
4.2.00	<u>BLOCK WORK</u> Cement block wall, bricks laid to form alternate courses of headers and stretchers, laid on and inc. mortar. (INTERNAL & EXTERNAL WALLS)				
4.2.01	150 mm thk full height 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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5.0.00	Bill №: 05 - CEILING				
5.1.00	<u>GENERAL</u> (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	<u>CEILING</u>				
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 №: 05 - Carried Over To Summary				

ITEM	DESCRIPTION		UNIT	QTY	RATE	AMOUNT
6.0.00	Bill №: 06 - DOORS AND WINDOWS					
6.1.00	<u>GENERAL</u>					
	(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, (b) glazing, tinting, timber panels, boardings, framing, lining, fastenings and all fixings. (c) Sizes are given overall outside dimensions of actual doors and windows. (d) Thickness and sizes of glass panels are shown on the Drawings and doors and windows schedule (e) Rates shall include for all painting as specified (f) Rates shall include all items specified in the door schedule and specification. (g) Frames and sashes to be 25-60 micron black powder coated aluminium other wise specified.					
6.2.00	<u>DOOR & WINDOWS</u>					
	<u>GROUND FLOOR</u>					
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					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8.0.00	Bill №: 08 - FINISHING				
8.1.00	<u>GENERAL</u> 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	<u>PLASTERING</u> 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	<u>CEMENT SCREED</u> 35 mm thick cement screed				
8.3.01	GROUND FLOOR	m ²	117.56		
8.4.00	<u>FLOOR TILING</u> 300 x 300 Ceramic tiles				
8.4.01	GROUND FLOOR	m ²	42.52		
	Toilets floor 300 x 300 Ceramic Non-Slip tiles				
8.4.02	GROUND FLOOR	m ²	6.24		
	toilet wall 300 x 300 Ceramic Non-Slip tiles				
8.4.03	GROUND FLOOR	m ²	38.11		
8.5.00	TOTAL OF BILL №: 08 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9.0.00	Bill №: 09 - PAINTING & DECORATIONS				
9.1.00	<u>GENERAL</u> 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	<u>PAINTING</u> WALL PAINTING Emulsion paint finish including putty application on brick walls as specified (EXTERNAL SURFACES) GROUND FLOOR	m ²	703.15		
9.2.01					
9.2.03	Emulsion paint finish including putty application on brick walls as specified (INTERNAL SURFACES) GROUND FLOOR	m ²	355.59		
	CEILING PAINTING Emulsion paint finish including putty application on brick walls as specified (INTERNAL & EXTERNAL SURFACES) GROUND FLOOR	m ²	76.42		
9.2.04					
9.3.00	TOTAL OF BILL №: 09 - Carried Over To Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10.0.00	Bill №: 10 - HYDRAULICS AND DRAINAGE				
10.1.00	<u>GENERAL</u>				
	<p>Rates shall include for: sockets, running joints, connectors, elbows, junctions, valves, reducers, expansion joints; backnuts and similar;</p> <p>(a) incidental fittings, clips, saddles, brackets, straps, hangers, screws, nails and fixing complete including cutting and forming holes; excavating, laying pipes and backfilling trenches.</p> <p>(b) All pipe work and fittings shall be uPVC.</p>				
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	<u>SANITARY FITTINGS</u>				
	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	<u>SEWER AND WASTE WATER DRAINAGE SYSTEM</u>				
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
11.0.00	Bill №: 11 - MECHANICAL & ELECTRICAL SERVICES				
11.1.00	<u>GENERAL</u>				
	Design, provide and install electrical network for the entire (a) building complete in accordance to standards set by the local governing authority. The cost shall include for: screws, nails, bolts, nuts, standard cable (b) fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories. Rates for electrical isolators, conduits, fittings, equipment and (c) similar items shall include for: all fixings to various building surfaces. (d) A light fixture is measured as one point; switch end of wire is not included in the quantity. A point wiring for power points is measured (regardless of 1 gang, 2 (e) gang etc) as one point for each socket outlet; other end of wire is not included in the quantity. All under ground cables directly buried in ground/run in trenches to be properly laid and covered with cable tiles/trench covers. Rate (f) 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. The contractor shall provide a schedule of all builder's work in (g) connection with details of such items as necessary, along with the tender. (h) Rates for materials/ plants/ equipments not approved for duty free facilities to be quoted on duty paid basis. All equipments shall be guaranteed for a period of 12 months from (i) the date of commissioning or date of practical completion of the project which ever later The rate shall include for insurance during handling, rehandling, (j) transport, storage until ready for installation, delivery of equipments up to the point of installation and until handing over. (k) The rates shall include for comprehensive maintenance during defects liability period of 12 months from the date of handing over Rate shall include for supply, installation, maintaining, testing and (l) commissioning of the system for power and lighting according to drawings and specifications to working order. (m) All materials, equipment wiring shall confirm to local codes, specifications, standards/latest I.E.E. regulations (BS 7671).				
11.2.00	<u>ELECTRICAL BOARDS</u>				
11.2.01	DISTRIBUTION BOX GROUND FLOOR		1.00		
11.3.00	<u>POINT WIRING AND FITTINGS</u>				
	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 1.5mm2 PVC/PVC/Cu + 2.5mm2 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 2.5mm2 PVC/PVC/Cu + 2.5mm2 PVC/Cu earth cable c/w uPVC conduit, junction boxes etc. for following Socket outlet/isolator point wiring Wiring points	nr	62.00		
11.4.00	<u>SOCKETS</u>				
	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		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
12.0.00	Bill №: 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	m²	146.40		
12.2.02	Mineral Wool Insulation in between Purlins	m²	146.40		
	<u>ROOF TRUSS</u>				
12.2.03	50x150mm Timber Rafters @900c/c	m²	146.40		
12.2.04	50x38mm Timber Purlins @ 600 c/c	m²	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 №: 12 - Carried Over To Summary				

SEWERAGE SYSTEM IN K.THULUSDHOO
04 PROVISIONAL SUMS
Male', Republic of Maldives

BILL OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROVISIONAL SUMS				
	A Maximum of MVR 1,000,000.00				
1.2.00	TOTAL OF PROVISIONAL SUMS - Carried Over To Summary				

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

SEWERAGE SYSTEM IN K.THULUSDHOO**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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	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				