

BILL OF QUANTITIES
CONSTRUCTION OF LABORATORY.
DH.RINBUDHOO HEALTH CENTER.

Item	Description	Unit	Quantity	Rate/ Unit	Rate/ Unit	Total Unit Rate	Amount
				Material	Labour	Rates per Units	
	<u>BILL No: 01</u> <u>PRELIMINARIES</u>						
1.1	<u>General Notes</u>						
(1)	<u>Abbreviations</u> m - meter No - numbers m ³ - cubic meter m ² - square meter Lm - Linear meter KG - Kilograms incl - including mm - millimeter dia - diameter SS - Stainless Steel GI - Galvanized Iron						
	BILL No: 01 PRELIMINARIES TOTAL OF BILL No: 01 - Carried over to summary						
	<u>BILL No: 02</u> <u>GROUND WORKS</u>						
2.1	<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	<u>Site Clearing</u> Includes clearing of all trees and bushes complete with stems, roots, Flooring, and the reimbursement fees if applicable. The contractor is to advised to survey the construction site and ensure that all necessary works for site clearing are included and on completion of works.						
(1)	Rates must include diverting all the pipes laid underground within the new building area (Sewer, wastewater, freshwater line and inspection chambers). Also, reallocate all AC outdoor units installed with the new building area, Diverting for All the electrical cable laid on the proposed land. The contractor Must survey the proposed building site before submitting the bid.	m ²	44.00				

2.3	<u>Excavation</u> Excavation shall be carried out in all type of materials and by whatever means are necessary accurately to the lines and levels shown in the approved drawing. No blasting of any kind will be permitted. Excavation for foundations and will include timbering of soil faces and dewatering. Excavation quantities are measured to the faces of concrete members. Rates shall include for dewatering, leveling, grading, trimming compacting to faces of excavation, keeping sides plumb, backfilling, consolidating and disposing surplus soil and include for all additional excavation required to place the formwork / shuttering and dewatering the trench for the required days.						
(1)	Excavation for Footings (F1)	m ³	1.62				
(2)	Excavation for Tie beam beams (TB)	m ³	3.25				
2.4	<u>Back Filling up to ground level.</u>						
(1)	Rates shall include for: leveling, grading, trimming and compacting as specified.	Item	1.00				
2.3	<u>Basement filling Above ground level.</u>						
(1)	Back filling above ground level in 100mm thick compacted layers of approved back fill soil and disposal of any excess soil and including ramp: rates shall include for leveling, grading, trimming and compaction in 100mm layers of filled areas of excavation	m ³	13.20				
2.4	<u>Damp Proof Membrane</u>						
	Cutting and laying in position heavy duty polythene sheets of gauge 500 (not less than 1.5mm thick). Rates shall include for: dressing around and sealing to all penetrations. Apply slurry type waterproofing to all surfaces of concrete below ground level in accordance with manufacturer's instructions.						
(1)	Damp proof membrane above lean concrete , Footings and Tie beams.	m	10.29				
(2)	Damp proof membrane below floor slab	m ²	44.00				
(3)	Bituminous application to 3 sides of footings, Tie beams & all the side of columns below ground level.	m ²	29.23				
	BILL No: 02 - GROUND WORKS						
	TOTAL OF BILL No: 02 - Carried over to summary						
3.1	<u>General</u> <u>BILL No: 03</u> <u>CONCRETE</u>						

	Rates shall include for cleaning, fabrication, placing, the provision for all necessary temporary fixings and supports including tie wire and other supports, laps and wastage, all reinforcement bars except 6 mm dia bars shall be of deformed high strength bars. 6 mm bar shall be round mild steel bars. Binding wire shall be of 1.6 mm or 1.4 mm soft iron wire. Reinforcement bars shall be cleaned before use i.e. should be free from rust, oil, dirt, or other coatings that reduces bonds, all reinforced bars and binding wires shall be stored under cover of at least 450 mm above the ground, cutting and bending according to approved manner & the approved working drawing, placing and fixing in position and binding should be as per the approved working drawing, laps in the bars shall be staggered, concrete cover for reinforcement shall not less than 50 mm for substructure, 40 mm for columns & side beams and not more than 30 mm for slab and beam bottoms. Desalinated water shall be used for all purposes, ground water shall not be used.					
3.2	<u>Lean Concrete</u>					
	Lean concrete shall be 50mm thick & mix ratio shall be 1:2:6 by dry volume. Lean concrete placed at bottom of footing and foundation beam and below plinth for protection according to line and length mentioned in the approved drawing. Quantity measured to the edges of concrete foundation members. Rate shall include of placing any formwork where necessary, batching, mixing, casting in all required items pouring & compacting and curing for 3 days and removal of any formwork include for provision casting of required items & finishing after removal of formwork and additional concrete required to confirm to structural and excavated tolerances and rates shall include supply of all required works					
(1)	50 mm thick lean concrete under the footings / strip footing and tie beam with a mix of 1:2:6	m ³	0.61			
3.3	<u>Reinforced Concrete</u>					
	In-situ reinforced concrete to:					
	*Add water proofing compound / admixture to concrete mix for walls GL and Roof Slabs					
3.3.1	<u>Foundations</u>					
(1)	Footings, F1 600x600x300mm	m ³	0.65			
(2)	Tie Beam, TB 200x250mm	m ³	1.63			
3.3.2	<u>Ground Floor</u>					
(1)	RCC Ground Slab 100 mm thick, Ground Slab and Garage ramp area.	m ³	4.60			
(2)	Concrete columns C1, 200 x 200mm	m ³	0.94			
(3)	Concrete Lintel beams, 150 x 150mm	m ³	0.22			
(4)	Concrete Sill beams, 150 x 150mm	m ³	0.11			
	Ambulance way					
3.3.3	<u>Roof Level</u>					
(1)	Roof beam, RB, 200x200mm (Level 1)	m ³	1.30			
(2)	Concrete columns C1, 200 x 200mm	m ³	0.06			
3.3	<u>Formwork</u>					

(a) 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. All materials such as plywood, shutter oils and other items and transportation to work place and secure the formwork in highly precise manner guaranteeing straight and smooth concrete edges. Cutting, fixing, bracing and oiling according to line and length as per approved working drawings removal of it after concrete has set without damaging the concrete faces.						
3.3.1	<u>Foundations</u>					
(1)	Footings, F1 600x600x300mm, (50% of form work) same form work to be use balance 50%	m ²	2.16			
(2)	Tie beam, TB 200X250mm	m ²	16.25			
3.4.2	<u>Ground Floor</u>					
(1)	Concrete columns C1, 200 x 200mm, (50% of form work) same form work to be use balance 50% column	m ²	9.84			
3.4.2	<u>Roof level</u>					
(1)	Roof beam, RB, 200x200	m ²	19.50			
(2)	Concrete columns C1, 200 x 200mm, (50% of form work) same form work to be use balance 50% column	m ²	0.56			
3.4.3	<u>Lintel & Sill Beams</u>					
(1)	Lintel beams and Sill beams, 150x150mm, (50% of form work) same form work to be use balance	m ³	3.32			
3.5	<u>Reinforcement</u>					
GENERAL : Rates shall include for cleaning, fabrication, placing, the provision for all necessary temporary fixings and supports including tie wire and other supports, laps and wastage, all reinforcement bars except 6 mm dia bars shall be of deformed high strength bars. 6 mm bar shall be round mild steel bars. Binding wire shall be of 1.6 mm or 1.4 mm soft iron wire. Reinforcement bars shall be cleaned before use i.e. should be free from rust, oil, din, or other coatings that reduces bonds, all reinforced bars and binding wires shall be stored under cover of at least 450 mm above the ground, cutting and bending according to approved manner & the approved working drawing, placing and fixing in position and binding should be as per the approved working drawing, laps in the bars shall be staggered, concrete cover for reinforcement shall not less than 50 mm for substructure, 40 mm for columns & side beams and not more than 30 mm for slab and beam bottoms. (b) All reinforcing bars shall be high strength bars.						
3.5.1	<u>Substructure</u>					
(1)	Footings, F1 600x600x300mm					
	Steel deformed bars, 12mm dia x 6m	Bars	8.00			
	Tie beam, TB 250x200mm					
(2)	Steel deformed bars, 12mm dia x 6m	Bars	24.00			

(3)	Steel ring bars, 6mm dia x 6m	Bars	21.00				
3.5.2	<u>Ground Floor</u>						
	Concrete columns C1, 200 x 200mm						
(1)	Steel deformed bars, 12mm dia x 6m	Bars	19.00				
(2)	Steel ring bars, 6mm dia x 6m	Bars	17.00				
3.5.3	<u>Roof level</u>						
3.5.3.1	Attached Beams,						
	Roof beam, RB, 200x200 mm						
(1)	Steel deformed bars, 12mm dia x 6m	Bars	24.00				
(2)	Steel ring bars, 6mm dia x 6m	Bars	18.00				
3.5.3.2	Concrete columns C1, 200 x 200mm						
(1)	Steel deformed bars, 12mm dia x 6m	Bars	3.00				
(2)	Steel ring bars, 6mm dia x 6m	Bars	2.00				
3.5.5	<u>Floor Slab</u>						
(1)	10 mm dia bars @250 C/C, For ground slab	bars	60.00				
3.5.4	<u>OTHER CONCRETE WORKS</u>						
	Fabrication of Concrete sink cupboard at Sample collection area, 1.8 Meter length and 700mm width as per drawings, Rates shall include, concrete works tiling of all surfaces, installation of						
(1)	Single ball SS sink with faucet. And Rates shall also include all hydraulic works related to this item. Also rates shall include fixing of timber door panel and shelves. minimum 18mm thick quarts sheets to be installed on the sink cupboard. also tilling as per drawings.	Item	1.00				
(2)	Fabrication and complete installation of an overhead cupboard with a kitchen hood. The hood speed must be a minimum of 2500 RPM. The total length of the cupboard is 1.8 meters.	Item	1.00				
	BILL No: 03 - CONCRETE WORKS						
	TOTAL OF BILL No: 03 - Carried over to summary						
	<u>BILL No: 04</u>						
	<u>MASONRY AND PLASTERING</u>						
4.1	<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 leaving holes 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 flashings, bedding frames or plates, building in joists, bearers or similar, temporary supports to openings, templates, reinforcement in walls and for all necessary making good. Bedding mortar (mixing ratio 1:4 i.e. cement: manufactured sand) shall be of OPC & fine aggregate shall be imported river sand shall be approved in grading & clean from any harmful substance. Masonry work shall be done with approved Machine compact cement blocks (300X150X150) with no defects. Lay in line and length as per approved working drawing Block making (mixing ratio 1:4 i.e. cement: Local sand, Free form salt) shall be of OPC & free form salt. floor slabs, cutting or leaving holes 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 flashings, bedding Rates shall include for: 25mm groove lines on external surfaces as shown on the drawing. Desalinated water shall be used for all purposes, if ground water is not drinkable.					
4.2	<u>Cement block work</u>					
	External and external walls					
4.2.1	150mm wide Hollow blocks, laid on and incl. 1:5 Cement Mortar, tie rods, compression gap filler, nylon / plastic mesh as specified. (mixing ratio 1:4 i.e. cement: river sand,)					
(1)	Ground Floor (external walls internal walls) of Below Ground Slab.	m ²	16.25			
(2)	Ground Floor (external and internal walls) of Above Floor Slab.	m ²	113.63			
4.3	<u>Plastering</u>					
	GENERAL: Interior and Exterior: Plaster All masonry wall have smooth finishing of 18 mm thick cement plastering with mix ratio 1:4 (i.e. cement: River Sand), plastering material shall be of OPC & fine aggregate shall be imported river sand shall be approved in grading & clean from any harmful substance. Plastic net should be provided wherever concrete surface and masonry meets, and cracks are unacceptable. Regular curing up to 7 days must be done, edges of doors, windows and ventilators included.					
4.3.1	25mm thick cement plastering (2 coat) on external walls and 18mm thick cement plastering on internal walls and concrete surfaces with 1:4 Cement mortar mix as specified incl. wire mesh at joints of concrete surfaces and walls (first, second coats).					
(1)	Ground floor (below Floor slab)	m ²	32.50			
(2)	Ground floor (Above Floor slab)	m ²	232.26			
(3)	50mm thick screed.	m ²	44.00			
	BILL No: 04 - MASONRY AND PLASTERING					
	TOTAL OF BILL No: 04 - Carried over to summary					
	<u>BILL No: 05</u>					

<u>ROOFING</u>									
5.1	<u>General</u> (a) Rates shall include for: fair edges, dressing over angel fillets, turning into grooves, all other labors, circular edges, nails, screws and other fixings and laps. (b) Rates shall include to apply Wood preservative to all the surface of timbers (Roof structure). (b) Rates shall include to remove existing end cap, fascia board and necessary roofing sheets and necessary works to connect new roof to existing roof.								
5.2	<u>Roof Coverings</u>								
(1)	Roofing sheets: Blue scope steel international limited MSP, Total coated thickness minimum 0.47mm thick - Aqua marine or equivalent for Main building and connection area.	m ²	176.28						
5.3	<u>Capping and Flashings</u>								
(1)	Ridge Capping as per drawing: Blue scope steel international limited MSP, Total coated thickness minimum 0.47mm thick- Aqua marine or equivalent	m	6.90						
(2)	End cap (Roof hips): Blue scope steel international limited MSP, Total coated thickness minimum 0.47mm thick- Aqua marine or equivalent	m	21.33						
5.4	<u>Gutter</u> (a) MSP Color bond flat sheet gutter 200X200mm, Total coated thickness minimum 0.47mm thick, including framing, and supports, straps, brackets, clips, stop ends, overflow, downpipe outlets, mesh flashings and all fixings and fastenings.								
(1)	GUTTER: Blue scope steel international MSP- Aqua marine or equivalent for new building	m	13.80						
5.5	<u>Down Pipes</u>								
(1)	75 mm dia uPVC down pipes including bends, junctions, straps, brackets, clips, roof drain strainer and all fixings.	m	17.82						
5.7	<u>Roof Structure</u> (a) Rates shall include for: all labor 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. (b) Rates includes to applying solignam wood preservative oil to all the surface of roof structure. (c) Rates include to fixing galvanized bolt, washers, nuts and 3mm thick MS gusset plates as show on the drawings.								
(1)	Timber ridge beam, 100 × 200 mm (2 pieces of 50 × 100 mm) timber beams anchored together with 12 mm diameter GI bolts.	m	5.70						
(2)	Timber rafters 50 X 100mm (Rates must include fixing of Gusset plates, and 12mm dia bolts as per the drawings)	m	114.52						
(3)	Timber purling 50 X 50mm	m	90.56						
(4)	Facia board, 18mm thick SHERA board 18 X 250mm	m	39.13						
(5)	Applying Solignum wood preservative or equivalent for all roof structure	item	1.00						

5.8	Roof Insulation 25mm thick Mineral wool installation with both side reflective foil on Fixed to underside of roofing with 12.5X12.5mm plastic mesh, Connection and edges of the foil to be sealed properly with a approved tape approved from consultant.	m ²	176.28				
5.9	Supplying of Following items Supply and Complete installation of Furniture's (1) Office Table with drawer, 1200mm, (2) Secretary chair , Medium back. Supply and installation of 4 seater Airport Bench set, Armrest/Leg/bracket: Die-casting molding of high strength aluminum alloy. (3) Seat: Numerical control hydraulic molding of high quality cold rolling steel plate. Sponge: Cold consolidation and foam-forming of high density and super soft PU. Beam: metal tube with a diamond shape. Coating: Electrostatic coating after Rust-proof treatment, electroplated polishing.	No No No	2.00 5.00 1.00				
5.10	Furnitures Fabrication of a sink cupboard for the laboratory room as per drawings and floor plan. The sink cupboard shall be 5.350 meters in length and 700 mm in width. The rate shall include all carpentry works using 18 mm thick block boards, complete fabrication and installation, fixing of door panels and internal shelves. An 18 mm thick Quarts sheet must be supplied and laid on top of the sink cupboard. (1) The scope also includes the supply and installation of two (2) ceramic laboratory sinks of size 620 × 480 × 255 mm (Cotto or approved equivalent), complete with wall-mounted elbow-operated faucets. Rates shall further include all necessary connections for fresh water supply and wastewater disposal related to this item. Plastic wall panels shall be fixed on the walls in the sink area as specified. All works shall be completed in accordance with the approved drawings and specifications. Fabrication of a Bench at the laboratory room as per drawings and floor plan. The bench shall be 1.8 meters in length and 700 mm in width. (2) The rate shall include all carpentry works using 18 mm thick block boards, complete fabrication and installation, fixing of door panels and internal shelves. An 18 mm thick Quarts sheet must be supplied and laid on top of the sink cupboard. All works shall be completed in accordance with the approved drawings and specifications.	Item Item	1.00 1.00				
	BILL No: 05 - ROOFING						
	TOTAL OF BILL No: 05 - Carried over to summary						
	BILL NO: 06						
	DOORS AND WINDOWS						
6.1	General						

	Aluminum Doors and windows, Fabricate and fix in position the aluminum doors and window frame - aluminum doors and window (white powder coated, 60-80 micron, 1.5mm profile thickness) using recommended material with specified fixtures as shown in approved working drawings and installation should be as per technical specifications. Rates shall include for locks, latches, closures, push plates, pull handles, bolts, kick plates hinges, screws, washer and all door and window hardware and these materials should be of ss steel according to drawing and of superior quality. (a) All door and window frames and panels shall be as specified in the drawing and timber boarder to be fixed all timber doors. (Profiles to be chosen by client, Thickness of aluminium profile must be minimum 2mm thick).						
6.2	<u>Door / Windows units</u>						
(1)	D1, Minimum 80 Micron Aluminum, Dark sandy grey powder coated Door 2300X1000mm with panels as per drawings.	no	2.00				
(2)	D2, Minimum 80 Micron Aluminum, Dark sandy grey powder coated Door 2300X800mm with panels as per drawings.	no	1.00				
(3)	W1, Minimum 80 Micron Aluminum, Dark sandy grey powder coated window 1700x1300mm with panels as per drawing.	no	2.00				
(4)	V1, Minimum 80 Micron Aluminum, Dark sandy grey powder coated window 750x625mm with panels as per drawings.	no	1.00				
6.4	<u>Vertical Blinds</u>						
	Supply and installation of Vertical Blinds for following windows, quality of vertical blinds should be high quality sun protected , Rates should be complete installation of Vertical blinds with railing and ect.						
(1)	W1 windows , size of finished blinds should be 2.150m height, X1.3meter width.	No	2.00				
6.5	<u>BED SIDE CURTAINS</u>						
	Supply and complete installation of top quality Hospital grade bed side curtain including railing/Track. Length of rail/track is 6870mm, and height of curtain would be 2.4 meter. Aluminium hollow section to be use If extender to the rail level.						
(1)		Item	4.00				
	BILL NO: 06 - DOORS AND WINDOWS						
	TOTAL OF BILL No: 06 - Carried over to summary						
	<u>BILL NO: 07</u>						
	<u>TILING</u>						
7.1	<u>General</u>						

	Prepare surface for approved bedding tiles with reach bedding materials as per the technical specifications & approved working drawings, fix tiles with ct grout in a precise manner to maintain correct alignment, applying tile grout and wiping any excess grout to ensure the required standards of finished works. Rates shall include for: fixing, bedding, grouting, and pointing materials; making good around pipes, sanitary fixtures, and similar; cleaning down and polishing any other similar works to ensure the required finish. All tiles must be Full body homogeneous tiles or equivalent.						
7.2	<u>Floor finish</u>						
7.2.1	600x600mm skid resistant Full body homogeneous tiles, matt finish floor tiles,	m ²	40.16				
(1)	General floor tiling	m ²	3.84				
(2)	Toilet floor tiling, With Water proofing membrane, approved by the Client.						
7.3	<u>Wall finish</u>						
7.3.1	300x600 mm full body homogeneous wall tile,	m ²	23.69				
(1)	Toilet, Up to the ceiling	m	37.50				
(2)	Tile skirting 150mm height, for all internal walls,						
	BILL No: 7 - TILING						
	TOTAL OF BILL No: 7 - Carried over to summary						
	<u>BILL No: 8</u> <u>CEILINGS</u>						
8.1	<u>Interior Ceilings</u>						
	Interior ceiling consist of 50X50mm Timber frame @ 1200mm c/c vertical and 600mm c/c horizontal frame with 10mm thick Gypsum board suspended ceiling, including framing beading nails and screws as per manufactures instruction. All the timber must be treated or applied wood preservative oil before fixing the Gypsum board.						
(1)	Internal Ceiling.	m ²	44.00				
8.2	<u>Exterior Ceilings</u>						
	Exterior ceiling consist of 6mm thick Shera board suspended ceiling, including framing beading nails and screws. Grid of the frame to be 600 X 600 with timber supports to roof structure at every 1200 mm on the main entrance ceiling & 600X900 mm at eaves of roof ceiling, timber framing and supports shall 50 x 50mm size shall be seasoned red meranti timber as per given drawing.						
(1)	Ground floor	m ²	23.43				
	BILL NO: 8 CEILINGS						
	TOTAL OF BILL No:8 - Carried over to summary						
	<u>BILL No: 9</u> <u>PAINTING</u>						
9.1	<u>General</u>						

	Exterior wall shall be of 1 coat of oil based textured paint and 2 coats of Kansani weather bond paint (oil based) over 1 coat of oil based sealer (white) or equivalent (according to technical specifications or approved drawings). Erection of scaffolding, preparing working platforms, applying sealer and two coats of paint as specified in the working drawings. Removal of scaffolding if any after completion of work. Rates shall include for: the provision, erection and removal of scaffolding, preparation, rubbing down between coats and similar work, the protection and/or masking floors, fittings and similar work, removing and replacing door and window and including soffits and sides of beams. Interior wall shall be of 2-3 coats over 1 coat of water based sealer. Rates includes Erection of scaffolding, preparing working platforms, applying sealer and two coats of paint, Kansani or equivalent as specified in the working drawings. Removal of scaffolding if any after completion of work. Rates shall include for: the provision, erection and removal of scaffolding, preparation, rubbing down between coats and similar work, the protection and/or masking floors, fittings and similar work, removing and replacing door and window and including soffits and sides of beams. Exterior & Exterior Ceiling (interior and exterior) shall be of 2 coats of (wood paint over 1 coat of wood primer, Kansani or equivalent. Erection of scaffolding, preparing working platforms, applying sealer and two coats of paint as specified in the working drawings. Removal of scaffolding if any after completion of work. Rates shall include for the provision and removal of scaffolding, preparation, rubbing down between coats and similar work, the protection and or masking floors fittings and similar work removing and replacing door window furniture. All painting work shall be carried in accordance with the Specifications 9.2 Wall painting 9.2.1 External painting 1 coat of wall sealer, 2 coats of paints (all coats to be oil based and external paint). Internal Painting 1 coat of wall sealer & 2 coats of paints, Emulsion paint putty finish system on plastered and concrete surfaces of internal walls. (1) Ground floor interior and exterior surface painting. 9.3 Interior Ceiling painting 9.3.1 Emulsion paint putty finish on concrete slab and beams, plywood / cement fiber board of all internal surfaces. 1 coat of primer & 2 coats of paints. (1) Emulsion putty paint finish 9.4 Exterior ceiling painting (1) Exterior Ceiling painting as per specification given.						
	BILL No: 9 - PAINTING TOTAL OF BILL No: 9 - Carried over to summary						
	BILL No: 10 <u>ELECTRICAL INSTALLATIONS</u> 10.1 General						

	(a) Rates shall include for: screws, nails, bolts, nuts, standard cable fixing or supporting clips, brackets, straps, rivets, plugs and all incidental accessories								
	(b) Rates for work in trench shall include for: excavation, maintaining faces of excavations, backfilling, compaction, appropriate cable covers, warning tape and disposal of surplus spoil								
	(c) Rates shall include for electrical conduits, fittings, equipment and similar all fixings to various building surfaces								
	(d) Each Light/ light fixture and its switch is measured as one point; similarly each fan or each socket outlet is measured as one point;								
	(e) Rates shall include for supply and complete installation								
10.2	<u>Mains connection</u>								
	Main connection: Rates shall include screws, nails, bolts, nuts, standard cable, fixing or supporting clips, brackets, straps, rivets, plugs, and all incidental accessories. Rates shall include electrical conduits, fittings, equipment, and similar items. Three - PHASE CABLE								
(1)	WIRING TO D-BOARD: All necessary work in trench shall include excavation, maintaining faces of excavations, backfilling, compaction, appropriate cable covers warning tape, and disposal of surplus soil supply and laying of the cable in according to Maldives electricity bureau.	no		1.00					
(2)	Laying of Main cable (16mm ² 4-Core Cable, approved by respective Authorities, GI pipe, warning tape) from Health center B board to Laboratory Building, Rates includes to exavation, back filling and necessary works to connect the laboratory.	m		30.00					
10.3	<u>Electrical Boards</u>								
	A three-phase electrical distribution board (wall embedded), Supply, and complete installation of D-Boards. Rates Shall include all required Brackets and other electrical appliances per drawings and Maldivian Regulations.								
(1)	For Lights. 5 Lights or Fan for one Circuit. For sockets, 13amp 2 sockets for one circuit, 15amp socket for one circuit.All the ELCB, MCB, and Circuits as well as the Distribution board must be Henger, Legrand, ABB or Equivalent.	no		1.00					
10.4	<u>Electrical wiring</u>								
	Three phase Electrical wiring with copper conductor Keani cable in conduits in walls and in casing on soffits of slab as specified to:								
(1)	Wiring with 2.5 mm ² cable to 1X13amp Power points	points		5.00					
(2)	Wiring with 2.5 mm ² cable to 2X13amp Power points	points		14.00					
(3)	Wiring with 6 mm ² cable to 1 x 15 Amp Power points	points		3.00					
(4)	Wiring with 6 mm ² cable to 1 x 15 Amp Power points (for AC)	points		2.00					
(5)	Wiring with 2.5 mm ² cable to lights and fan	points		19.00					
10.5	<u>Lighting / Fan</u>								
(1)	Ceiling mount light, 21W LED Light, (Philips), Cool day light,Total lumen 2300 or equivalent,	no		12.00					
(2)	Whether proof wall mount light with (Glass cover) 13W LED bulb, (Philips) E27, warm white, Total lumen 1400,	no		4.00					
(3)	LED Emergency light (2 hours Battery charge)	no		2.00					

(4)	Dimmable light, 5W	no	1.00				
10.6	<u>Socket outlets</u>						
	(a) All socket outlets shall be "Legrand" or equivalent.						
(1)	1x13Amp wall Socket outlet,	no	5.00				
(2)	2x13Amp wall Socket outlet,	no	14.00				
(3)	1x15Amp wall socket outlet,	no	3.00				
(4)	1x15Amp wall socket outlet, for AC	no	2.00				
10.7	<u>Light switches</u>						
	(a) All light switches shall be "Legrand" or equivalent. Each light should be control by one switch.						
(1)	One gang switch	no	1.00				
(2)	Two gang switch	no	1.00				
(3)	Three gang switch	no	4.00				
(4)	Out door photo cell switch	no	1.00				
10.8	<u>Computer Network</u>						
	Design, Supply and Complete Installation of computer networking, including CAT6 Cabling, Sockets and double layer switches, Allow for the provision of a completed and detailed set of shop drawings						
(1)	Completion of Data Network points including face plate, face plate must be "Legrand" or equivalent and Connect to the existing health center network.	No	2.00				
(2)	Supply and complete installation of 12 port, VOIP, Double layer Manageable network switch D-Link or equivalent and install IP phone network as well as connect to the Health Center network.	No	1.00				
(3)	Supply and complete installation of Computer system as per specifications	No	2.00				
(4)	Supply and complete installation of IP Telephone and connection existing system.	No	2.00				
(5)	Supply and complete installation of 65" QLED TV, LG or Equivalent at reception and physio area.	No	1.00				
10.9	<u>Earthing</u>						
	Earth pit with resistance less than 2 ohms 3/4 earth rods must be used and must have clamps at the end Earth pit should be covered junction with cover.						
(1)	Completion of earth pit with earthing cable and completion of earthing as per the above requirements.	Item	1.00				
10.10	<u>Fire Fighting</u>						
(1)	CO2 Extinguisher	Item	2.00				
(2)	H2O Extinguisher	Item	2.00				
	BILL No: 10 - ELECTRICAL INSTALLATIONS						
	TOTAL OF BILL No: 10 - Carried over to summary						
	<u>BILL No: 11</u>						

<u>HYDRAULICS & DRAINAGE</u>		
11.1	<u>Hydraulics</u>	
11.1.1	<u>General</u>	
	(a) Rates shall include for excavation, laying pipes and backfilling trenches, maintaining faces of drainpipe trenches and pits, backfilling, disposal of surplus soil, bends, junctions, reducers, expansion joints brackets, joints, straps, hangers, screws, nails and fixing complete, and all joints and other incidental material, All Pipes and fittings area high pressure uPVC pipes fixing complete, including cutting and forming holes; excavating, laying pipes and backfilling trenches.	
	(b) All pipe work shall be uPVC.	
11.1.2	<u>Fresh water supply pipe work</u>	
(1)	Completion of pipe works and Connect Fresh water supply pipe work to Fresh water network installed at hospital.	Item 1.00
11.1.3	<u>Sanitary fixtures & accessories</u>	
	Sanitary fixtures & Accessories: Sanitary fixtures complete including brackets, flush pipes, valves, overflows, plugs and washers, as specified.	
(1)	Water closet (American standard, Neo Modern, Anti bacterial type) or equivalent, (dual top flush)	no 1.00
(2)	Wash basin with pedestal (American Standard) or equivalent	no 1.00
(3)	Water tap for wash basin , (Cotto) or equivalent	no 1.00
(4)	Muslim Shower with Stop valve, (Cotto) or equivalent	no 1.00
(5)	Floor waste with SS gully trap, All toilets and Dirty utility	no 1.00
(6)	Stop Valves, (Cotto) or equivalent	no 2.00
(7)	Head shower with Valve, (Cotto) or equivalent	no 1.00
(8)	Hand shower with Valve, (Cotto) or equivalent	no 1.00
(9)	Wall cabinet (Mirror and towel bar only) Cotto and equivalent	no 1.00
(10)	Water tap, outside of the Building with 10 Meter high quality pipe 12.5mm dia.	no 1.00
11.2	<u>Drainage</u>	
11.2.1	<u>General</u>	
	(a) Rates shall include for: excavation, maintaining faces of drain pipe trenches and pits, backfilling, disposal of surplus spoil; bends, junctions, reducers, expansion joints and all joints and other incidental materials.	
	(b) All pipe work shall be UPVC	
(1)	Constructing Concrete Inspection Chamber of required size with all provisions to connect pipelines as per drawing.	Item 2.00
11.3	<u>Pipe work</u>	
(1)	Completion of pipe works and Connect Waste disposal pipe 75mm dia to Sewer network installed at existing system.	Item 1.00
(2)	Completion of pipe works and Connect Sewers pipe 100mm dia UPVC to Sewer network installed at existing system. Rates includes to install inspection chamber as per consultants instructions.	Item 1.00

	BILL No: 11 - HYDRAULICS & DRAINAGE						
	TOTAL OF BILL No: 11 - Carried over to summary						
	<u>BILL No: 12</u> <u>AIR CONDITIONING SYSTEM</u> 12.1 General (a) Rates shall include for detail design, supply and complete installation of A/C units pipework, insulation, fixings, electrical wiring, drain pipes etc. (b) The Contractor shall provide detailed and complete set of shop drawings c) The contractor shall submit shop drawings of AC and Exhaust System. The capacity shall be determined by the contractor. d) Rate shall include complete installation of indoor units and outdoor units. 12.2 Air Condition 12.2.1 Design, supply and complete installation of indoor and out door unit, All AC unit is DAIKIN or equivalent (INVERTER TYPE). The whole of the liquid and suction refrigerant lines including all fittings, valves etc. shall be insulated with 25mm thick insulation for all copper sizes. Insulation shall be closed cell elastomeric nitrile rubber. Protection of exposed Refrigerant Pipe Insulation: To protect nitrile rubber of exposed piping from degrading due ultra violet rays & atmospheric conditions, it shall be covered polychelid coating with at least two coats of resin and hardener (Make-Polybond /Paramount Polytreat). Fiberglass tape shall be helically wound & painted with two coats of resin with hardener to give smooth & plain finish. <i>The proposed outdoor or outdoor set specifications should detail Energy Efficiency Ratio (EER) kw/kw not less than 4.5kw</i> <i>The Outdoor Unit Shall be Factory assembled with Weather Proof casing, constructed from Heavy Gauge Mild Steel Panels and coated with Anti Corrosive Epoxy resin finish. The unit should be completely factory wired and tested and shall be fitted with all necessary controls and switch gear.</i> <i>All outdoor units needs to have aluminum fins with 105+2 µm thickness, with special Anti corrosive coating of 1.3 ± 0. 35 µm thickness and an outside Hydrophilic layer coating of 0.35 ± 0. 07 µm thickness.</i> All outdoor units shall be equipped with high efficiency optimized heat exchangers with variable heat exchanger circuits All the outdoor unit must be fixed back side of the Building. AC to be install Following rooms, all the indoor unit should be spilt type.						
(1)	Laboratory area, 24,000 BTU spilt type wall mount air conditioner, Hitachi, LG or equivalent.	Item	1.00				
	BILL No: 12 -AIR CONDITIONING SYSTEM						
	TOTAL OF BILL No: 12 - Carried over to summary						

BILL No:13
TENDERER'S ADJUSTMENTS

13.0 Any adjustments that the contractor may consider necessary should be written below and on similar continuation sheets if required, and the net amount of the adjustments is to be carried to the summary.

(a) If there are discrepancies between BOQ and Drawings, the Contractor must include them in the Addition/Omission Bill. If the contractor does not include the Addition/Omission bill, the contractor must proceed with the works without any cost.

(b) Provide detail description of work items under each bill and insert extra pages if required.

13.2 Additions

- (1) PRELIMINARIES, Bill no. 01
- (2) GROUND WORKS, Bill no. 02
- (3) CONCRETE, Bill no. 03
- (4) MASONRY AND PLASTERING, Bill no. 04
- (5) METAL WORKS, Bill no. 05
- (6) DOORS AND WINDOWS, Bill no. 06
- (7) TILING, Bill no. 07
- (8) CEILINGS, Bill no. 08
- (9) PAINTING, Bill no. 09
- (10) HYDRAULICS & DRAINAGE, Bill no. 10
- (11) ELECTRICAL INSTALLATIONS, Bill no. 11
- (12) AIR CONDITIONING SYSTEM, Bill no. 12
- (13) TENDERER'S ADJUSTMENTS, Bill no. 13

ADDITIONS TOTAL

13.3 Omissions

- (1) PRELIMINARIES, Bill no. 01
- (2) GROUND WORKS, Bill no. 02
- (3) CONCRETE, Bill no. 03
- (4) MASONRY AND PLASTERING, Bill no. 04
- (5) METAL WORKS, Bill no. 05
- (6) DOORS AND WINDOWS, Bill no. 06
- (7) TILING, Bill no. 07
- (8) CEILINGS, Bill no. 08
- (9) PAINTING, Bill no. 09
- (10) HYDRAULICS & DRAINAGE, Bill no. 10
- (11) ELECTRICAL INSTALLATIONS, Bill no. 11
- (12) AIR CONDITIONING SYSTEM, Bill no. 12
- (13) TENDERER'S ADJUSTMENTS, Bill no. 13

OMISSIONS TOTAL

BILL No: 13 - TENDERER'S ADJUSTMENTS
TOTAL OF BILL No: 13 - Carried over to summary