

VOLUME 3

TECHNICAL SPECIFICATIONS

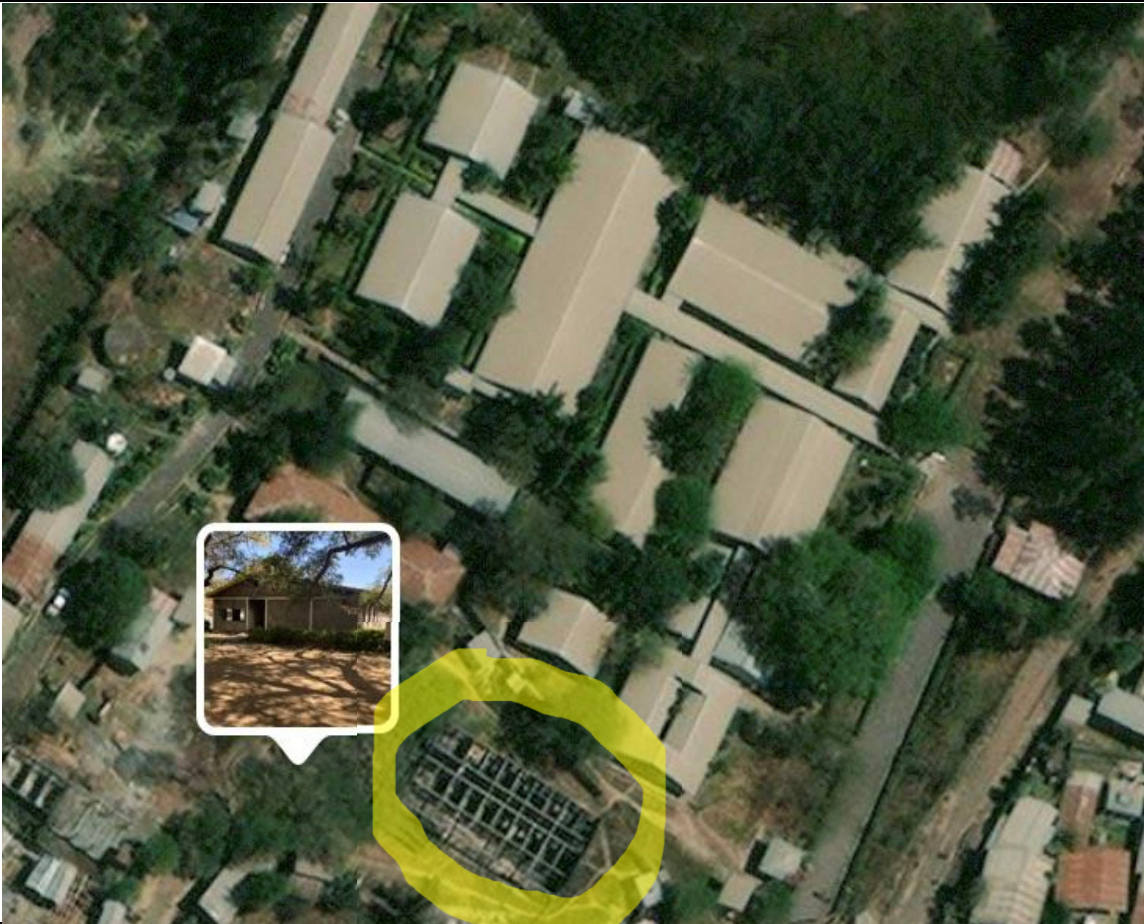
SPECIFICATIONS AND BILL OF QUANTITIES WITH ENGINEERING ESTIMATE

PROJECT:

ATAYE HOSPITAL DAMAGED BLOCK
RENOVATION WORKS

LOCATION:

ATAYE, NORTH SHEWA
AMHARA REGIONAL STATE, ETHIOPIA



Prepared by:- Solomon Tesfay
dic-22

Preamble to the Bill of Quantities

1. The Bill of Quantities shall be read in conjunction with the Drawings and Technical Specifications.
2. The Bill of Quantities contains the following part Bills and Schedules:
 - a. Bill No. 1 – Ataye Damaged Block
3. The Quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The estimated contract quantity of each item of works will be set at the time of contract signing. In addition to this the basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer ~~shall determine in the terms of the Contract~~.
4. The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional Plant, Labor, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied
5. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
6. The rates in this Bill of quantities shall consider all incidental works required to protect existing structures.
7. Items associated with a priced item necessary for its satisfactory fixing shall be considered as included in the rate of the item.
8. The rates given for Provisional Quantities (PQ) will be binding if the client decides to incorporate these works as additional works.
9. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
10. The Overhead & risk and the gross profit for variation orders will be 35% .
11. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
12. The method of measurement of completed work for payment shall be in accordance with Standard Methods of Measurement ECPN-4.
13. The Bill of Quantities contains items
 - a. Supplied and installed by the Prime contractor
 - b. Provisional Quantities Supplied and installed by the Prime contractor
 - c. Provisional Sum Items supplied by the Client and installed by the Prime Contractor
 - d. Provisional Sum Items Supplied and installed by Nominated Sub-contractor
14. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer.
15. The duties and responsibilities of the Prime Contractor for items 13(b), 13(c) and 13 (d) above are deemed to be covered by the Contractor's charge indicated in here. The duties and responsibilities of the Prime Contractor in addition to those indicated in the Bill of Quantities are:-
 - a. Handle and store materials at site both for prime contractor, the Client and nominated sub-contractor
 - b. Provide utilities like power, water and other necessary utilities for use by the Client and nominated sub-

- c. Provide within the site transport and lifting equipment for all loading and unloading purposes and all required transportation within the site as required by the Client and nominated sub-contractors.
 - d. Provide scaffolding, ladder, etc as needed
 - e. Execute any incidental works, like concrete work, earthwork, finishing, patching, and chiseling as required by the Client and nominated sub- contractors.
 - f. Removal of debris and clean the site at completion
16. Errors will be corrected by the Employer for any arithmetic errors in computation or summation as
- (a) where there is discrepancy between amounts in figures and in words, the amount in words will govern
 - (b) where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit price and the quantity, the unit rate as quoted will govern.
17. Rock is defined as all materials which, in the opinion of the Engineer, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and which cannot be extracted by ripping with a tractor of at least 150 brake hp with a single, rear-mounted, heavy-duty ripper.
18. A type of bonding agent used for bonding old concrete to newly fresh one should get approval before application and the cost in connection with the bonding old concrete to newly fresh one shall be born by the
19. All provision for sanitary pipe passage, Electrical and Sanitary ducts and provision of sleeves will have to be done during concrete works as per the Electrical and Sanitary drawings and they are deemed to be included in the other rates and prices entered in the Bill of Quantities.
20. The Contractor is responsible for the detail assessment of the Site conditions and any measure to be taken is included in the rates.
21. The removal of Surplus excavated material shall be to an appropriate place away from the construction site. The contractor shall also make arrangement to damp this surplus excavated material to the owner place by the Direction of the Resident Engineer.
22. The Contractor shall submit catalogues with full description for Items under all Divisions which include, but are not limited to: Finishing Materials, Electrical, Sanitary fittings & Equipments and shall get approval by the Engineer before purchasing or ordering.
23. All Electrical and Sanitary works /installation/ shall be done by experienced staff or specialized sub-contractor or personnel who have a minimum of eight years experience with similar works & this has to be approved by the Engineer based on their CVs & educational background and certification and
24. All Electrical and Sanitary works shall be tested & commissioned prior to filling chiseled cavities, installing ceilings, covering vertical & horizontal ducts & back filling trenches. The Contractor shall be fully
25. The Prime contractor shall submit samples of all finishing materials installed by himself and by nominated sub-contractors for approval by the Engineer and the Employer.

Project :- ATAYE HOSPITAL DAMAGED BLOCK RENOVATION WORKS

Client :- CUAMM

Consultant:- SOLOMON TESFAY

**SUMMARY OF PRICES
BILL NO. 1: DAMAGED BLOCK**

ITEM	DESCRIPTION	UNIT	AMOUNT
1	ROOFING	Birr	-
2	CARPENTRY & JOINERY	Birr	-
3	METAL WORKS	Birr	-
4	FINISHES	Birr	-
5	PAINTING	Birr	-
6	GLAZING	Birr	-
7	ELECTRICAL INSTALLATION	Birr	-
	TOTAL FOR BILL NO. 1	Birr	-
	VAT (15%)	Birr	-
	TOTAL including VAT	Birr	-

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	ROOFING				
1,01	Supply and Fix G-30 ribbed sheet ceiling under eave fixed to truss. Price shall include 40×50 mm wooden battens with c/c spacing of 600 mm both ways, corner list and all other necessary accessories.	Sq.m	54,72		-
1,02	Supply and fix G-28 flat metal sheet gutter. Price shall include metal bracket support at proper locations and all other necessary accessories. Devt. length =500 mm	ml	61,40		-
1,03	Ditto but coping with development length 500mm.	ml	15,40		-
1,04	Supply and fix 110mm diameter PVC down pipe. Price shall include metal strap supports c/c 1000mm, wire strainer and all other necessary accessories.	ml	61,20		-
Total Carried to Summary					-
2	CARPENTRY & JOINERY				
2,01	Supply and fix 8 mm thick chip wood ceilings as per the Engineer's approval. Price shall include (40x50)mm wooden battens with c/c spacing of 600 mm both ways, middle and corner list, and all other necessary accessories.	Sq.m	420,00		-
Total Carried to Summary					-
3	METAL WORKS				
3,01	Metal windows and doors shall be manufactured from 38X1mm LTZ frame profile and 0.8 mm thick ribbed sheet all as per the Engineer's approval and window door schedule. For all windows & doors provide security RHS grill of (30*10*1.25)mm spaced at 10cm vertically including (25x25x1.25)mm frame. Unit price shall include: two coats of anti rust and three coats of synthetic enamel paint, approved quality cylindrical lock, hinges, handle and any other accessories to complete the work.				
	WINDOWS				
	W1 size: W=2800mm H=1100mm	No	3,00		-
	W2 size: W=1000mm H=2000mm	No	17,00		-
	W3 size: W=1000mm H=1000mm	No	3,00		-
	W4 size: W=750mm H=1200mm	No	1,00		-
	DOORS				
	D1 size: 1000×2900mm	No	19,00		-
	D2 size: 1000×2100mm	No	11,00		-
	D3 size: 1850x2900mm	No	2,00		-
Total Carried to Summary					-
4	FINISHES				
4,01	PORTLAND CEMENT PLASTER				
4.01.1	Supply, prepare and apply three coats of Portland cement plaster where NEEDED. The proportioning of the cement and sand shall be 1 to 3 . Portland Cement Shall comply with the requirements of ASTM C 150, Type I. Sand Aggregates shall comply with the requirements of ASTM C 897:				
	a) To Internal Wall Surfaces	Sq.m	92,00		-
	b) To Column surfaces and Lintels	Sq.m	4,00		-

BOQ for Ataye Hospital

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4,02	FLOORING				
4.02.1	Supply and Fix (300x300x9)mm non-slippery ceramic floor tiles. Quality, type, color & pattern must be approved by the engineer. Price should include mortar bed grouting and all other necessary works.	Sq.m	290,00		-
4.02.2	Supply and Fix (9x100)mm non-slippery ceramic skirting including mortar backing and appropriate grouting.	ml	320,00		-
4.02.3	Make good Verandah Area tiles	Sq.m	108,00		-
4,03	WINDOW SILL				
	Supply and Fix 30cm width Terrazzo window sill bedded on cement mortar (1:3) ratio. Price shall include cement screed, bullnosing and all necessary works.	ml	32,00		-
Total Carried to Summary					-
5	PAINTING				
5,01	Supply and Apply three coats of synthetic emulsion paint to internal plastered wall surfaces. Cost includes clean both surfaces and fix all cracks with Masonry Filler. Color to be approved by the Architect/Engineer.	Sq.m	921,46		-
5,02	Supply and Apply three coats of weather resistant emulsion paint to external rendered wall surface	Sq.m	288,64		-
5,03	Ditto as item No 5.02, but to chipwood ceiling	Sq.m	420,00		-
5,04	Supply and Apply three coats of synthetic enamel paint to ribbed sheet ceiling under eave	Sq.m	54,72		-
5,05	Ditto as item No 5.04, but to exposed concrete surfaces (beams and columns)	Sq.m	34,56		-
Total Carried to Summary					-
6	GLAZING				
6,01	Supply and fix 6 mm thick clear sheet glass to windows and doors according to the drawings. Price shall include putty and all the necessary fixing accessories.	Sq.m	53,00		-
Total Carried to Summary					-
7	ELECTRICAL INSTALLATION				
	Supply, Install and Test all Electrical Systems: Power Distribution Boards with Circuit Breakers, Light Fittings with Lamps, Switches, Outlets and Others including required items and accessories. All items shall be Industry standard and approved equivalent types.				
7,01	DISTRIBUTION BOARD				
	Distribution boards should be made of Sheet metal Boards and have separate neutral and ground bus bars/phase bars. All units in the distribution boards should be labeled to give the reference and duty of the unit.				
	Supply and Install Flush mounted Sheet metal Sub Distribution enclosure with lockable door. Bus bar rating of 50A/3ph, Earthing lead with all its accessories and enough ample space for future expansion consisting of: 1pc m.c.b of 25A/1ph, 5pc m.c.b of 16A/1ph, 4pcs m.c.b of 10A/1ph.	No	1,00		-
7,02	LIGHT POINTS				
	Supply and Install Surface mounted light points fed through PVC insulated copper conductors of 2x2.5mm ² inside PVC conduits of 13mm diameter, including junction boxes with covers and insulating screw cap connectors.	No	43,00		-

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
7,03	LIGHT FITTINGS				
	Supply and Fix Light Fittings with lamps as specified that meet industry standards including appropriate items and necessary accessories.				
	Ceiling Mounted White LED Strip Light, 120V, 4-Foot, 1-Light, 25 W	No	38,00		-
	Surface round panel type DL 135-18, 1440L 18W LED Lamp	No	5,00		-
7,04	SWITCHES				
	Supply and Install Lighting control Switches as specified that meet industry standards including appropriate cover plate, junction box and necessary accessories.				
	One-way switch - flush mounting - 10 AX 250 V - white	No	23,00		-
7,05	SOCKET POINTS				
	Supply and Install 16A/1P socket outlet points fed through PVC insulated conductors of 3x2.5mm ² inside PVC conduit of 16mm diameter including junction boxes with covers and insulating screw cap connectors.	No	47,00		-
7,06	SOCKET FIXTURES				
	Supply and Fix Socket Fixtures that conform to International Standards complete with cover plates, plates, screw or claw mounting				
	Flush mounting socket outlet of 10-16A/1P	No	47,00		-
7,07	FEEDER CABLES				
	Supply and Install PVC insulated Power Supply/Feeder Cables: XLPE 0.6/KV that meet industry standards.				
	Supply Power from Manhole to Pharmacy SDB 3x4 sqmm power cable	ml	75,00		-
Total Carried to Summary					-

SPECIFICATIONS AND BILL OF QUANTITIES WITH ENGINEERING ESTIMATE

PROJECT:

JEWHA HEALTH CENTER RENOVATION WORKS

LOCATION:

JEWHA, NORTH SHEWA
AMHARA REGIONAL STATE, ETHIOPIA



Prepared by:- Solomon Tesfay
dic-22

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25. The Prime contractor shall submit samples of all finishing materials installed by himself and by nominated sub-contractors for approval by the Engineer and the Employer.

Project :- JEWHA HEALTH CENTER RENOVATION WORKS

Client :- CUAMM

Consultant:- SOLOMON TESHAY

**SUMMARY OF PRICES
BILL NO. 1: DAMAGED BLOCK**

ITEM	DESCRIPTION	UNIT	AMOUNT
1	CARPENTRY & JOINERY	Birr	-
2	GLAZING	Birr	-
3	SANTARY INSTALLATION	Birr	-
4	ELECTRICAL INSTALLATION	Birr	-
	TOTAL FOR BILL NO. 1	Birr	-
	VAT (15%)	Birr	-
	GRAND TOTAL including VAT	Birr	-

BOQ for Jewha Health Center

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	CARPENTRY & JOINERY				
1,01	Supply and fix 8 mm thick chip wood ceilings as per the Engineer's approval. Price shall include (40x50)mm wooden battens with c/c spacing of 600 mm both ways, middle and corner list, and all other necessary accessories.	Sq.m	20,00		-
Total Carried to Summary					-
2	GLAZING				
	Supply and fix 6 mm thick clear sheet glass to windows and doors. Price shall include putty and all the necessary fixing accessories.				
2,01	ANC (Ante Natal Care) Size: 94x34cm 1pc and 80x15cm 3pcs	Sq.m	0,68		-
2,02	Delivery Room Resting Area Size: 120x15cm 4pcs	Sq.m	0,72		-
2,03	Delivery Room Size: 100x40cm 3pcs	Sq.m	1,20		-
2,04	Duty Room Size 100x30cm 1pc and 75x15cm 1pc	Sq.m	0,41		-
2,05	Delivery Entrance Size: 160x15cm 3pcs, 85x15cm 4pcs	Sq.m	1,23		-
2,06	Cleaning Ladies Rest Area Size: 100x40cm 1pc	Sq.m	0,40		-
2,07	Finance Office Size: 70x15cm 1pc	Sq.m	0,11		-
2,08	Property Management Office Size: 120x15cm 1pc	Sq.m	0,18		-
2,09	Family Planning Room Size: 100x45cm 1pc, 70x80cm 1pc, 120x15cm 1pc, 40x100cm 1pc, 80x15cm 1pc	Sq.m	1,71		-
2,10	Vaccination Room Size: 40x100cm 1pc	Sq.m	0,40		-
2,11	Facility Manager Office Size: 120x15cm 5pcs	Sq.m	0,90		-
2,12	Nurse dormitory Size: 80x15cm 6pcs, 70x90cm 1pc	Sq.m	1,35		-
2,13	Examination Room Size: 80x15cm 3pcs, 120x15cm 1pc	Sq.m	0,54		-
2,14	Reception Size: 80x15cm 4pcs	Sq.m	0,48		-
2,15	Toilet Size: 100x80cm 1pc	Sq.m	0,80		-
2,16	Pharmacy Size: 70x100 1pc, 40x100cm 2pcs	Sq.m	1,50		-
Total Carried to Summary					-
3	SANITARY INSTALLATION				
3,01	SANITARY FIXTURES				
	All fixtures and pipes which are specified below shall be subject to the Consultant's or Owner's approval based on samples, brochures and catalogues presented by the contractor. Unit Price shall include all the necessary fixing brackets or hooks and all assistance civil works such as chiseling of walls, floors, beams etc.				
3.01.01	Fix, Test and Commission wash down water closets made of white vitreous China complete with plastic seat cover, low flush cistern and with all necessary accessories.	No	2,00		-
3,02	WATER SUPPLY PIPES AND VALVES				
	Supply, Install and Commission approved quality PP pressure pipes (PN10), for hot & cold water distribution systems to sanitary fixtures. The pipes shall be complete with all the necessary connecting pieces such as bends, Ys, Ts, reducers, nipples, unions hangers and supported with compatible clips as per manufacturer's recommendation to walls, floors, slabs, beams, ceilings, etc.. Unit price shall include, disinfection of the pipes with Chlorine and all the necessary assistance to the installation works. The installation shall be tested at a pressure of 10kg/cm ² at the expense of the contractor. The pipes and fittings shall conform to BS3505/DIN8062 or equivalent institution. The PR pipes shall be UV resistant at the exposed areas. Pipe sizes are external.				-
3.02.01	Supply and install Dia. 20 mm PPR, PN-10 pipes to internal cold water distribution system complete with all the necessary fittings and accessories. Price shall include adaptor connection with site HDPE pipe.	ml	24,00		-

BOQ for Jewha Health Center

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.02.01	Supply, Lay, Test, Disinfect and Commission Dia. 25mm HDPE PN 16 Water distribution pipe from public water main to the Water Tanker. Price includes all necessary fittings, excavation to an average depth of 600mm and width of 600mm with 100mm thick sand bedding all around the pipes and backfilling.	ml	12,00		-
3.02.01	Supply and fix PPR ball Valves of approved standard on water supply distribution lines. The valves shall be compatible with PP pipes and complete with adaptors, unions, elastic waterproofing, hand wheels of normal quality and all other necessary accessories	No	2,00		-
3.02.01	Supply, Fix, Test and Commission Bronze Gate valves, PN 16, of approved Standards & quality on the water supply Riser Branch lines to rooms with sanitary provisions.	No	2,00		-
3,03	WASTE, VENT AND RAIN WATER PIPES AND ACCESSORIES				
	All domestic waste, vent and storm water pipe lines shall be UPVC pipes and shall be provided with a minimum slope towards the outlet unless specified. All UPVC pipes and necessary fittings shall be standard quality and be free from damage during storage, transportation, construction etc. Unit price shall include all the necessary assistance civil works, such as excavation cartaway, fixing or hanging to walls, beams or slabs. etc., necessary fittings such as bends, Y. T, etc.				
3.03.01	Supply, Lay and join internal UPVC PN-4 waste pipes with all UPVC pipe fittings including joining with solvent cement joints and testing of joints etc. The pipe diameter shall be Dia. 110mm	ml	20,00		-
3,04	WATER TANKER				
3.04.01	Supply and Install 2000 liter Fiber Glass Tanker complete with rehabilitation of existing steel support. Price shall include all related piping work (inlet, outlet, drain, over flow), valves and related civil works.	No	1,00		-
Total Carried to Summary					-
4	ELECTRICAL INSTALLATION				
	Supply, Install and Test all Electrical Systems: Power Distribution Boards with Circuit Breakers, Light Fittings with Lamps, Switches, Outlets and Others including required items and accessories. All items shall be Industry standard and approved equivalent types.				
4,01	DISTRIBUTION BOARD				
	Distribution boards should be made of Sheet metal Boards and have separate neutral and ground bus bars/phase bars. All units in the distribution boards should be labeled to give the reference and duty of the unit.				
4.01.01	Supply and Install Flush mounted Sheet metal Sub Distribution enclosure with lockable door. Bus bar rating of 25A/1ph, Earthing lead with all its accessories and enough ample space for future expansion consisting of: 2pc m.c.b of 16A/1ph, 2pcs m.c.b of 10A/1ph.	No	1,00		-
4,02	LIGHT POINTS				
	Supply and Install Surface mounted light points fed through PVC insulated copper conductors of 2x2.5mm ² inside PVC conduits of 13mm diameter, including junction boxes with covers and insulating screw cap connectors.				

BOQ for Jewha Health Center

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4.02.01	ANC (Ante Natal Care)	No	1,00		-
4.02.02	Delivery Room Resting Area	No	1,00		-
4.02.03	Delivery Room	No	2,00		-
4.02.04	Duty Room	No	1,00		-
4.02.05	Corridor	No	1,00		-
4.02.06	Cleaning Ladies Rest Area	No	1,00		-
4.02.07	Administration	No	1,00		-
4.02.08	Property Management Office	No	1,00		-
4.02.09	Family Planning Room	No	2,00		-
4.02.10	Vaccination Room	No	1,00		-
4.02.11	Facility Manager Office	No	1,00		-
4.02.12	Nurse dormitory	No	2,00		-
4.02.13	Reception	No	1,00		-
4.02.14	Toilet	No	1,00		-
4,03	LIGHT FITTINGS				
	Supply and Fix Light Fittings with lamps as specified that meet industry standards including appropriate items and necessary accessories.				
4.03.01	Surface round panel type DL 135-18, 1440L 18W LED Lamp	No	17,00		-
4,04	SWITCHES				
	Supply and Install Lighting control Switches as specified that meet industry standards including appropriate cover plate, junction box and necessary accessories.				
4.04.01	One-way switch - flush mounting - 10 AX 250 V - white	No	5,00		-
4,05	SOCKET POINTS				
	Supply and Install 16A/1P socket outlet points fed through PVC insulated conductors of 3x2.5mm ² inside PVC conduit of 16mm diameter including junction boxes with covers and insulating screw cap connectors.				
4.05.01	ANC (Ante Natal Care)	No	2,00		-
4.05.02	Delivery Room	No	2,00		-
4.05.03	Duty Room	No	1,00		-
4.05.04	Corridor	No	1,00		-
4.05.05	Cleaning Ladies Rest Area	No	1,00		-
4.05.06	Administration	No	1,00		-
4.05.07	Family Planning Room	No	2,00		-
4.05.08	Vaccination Room	No	1,00		-
4.05.09	Facility Manager Office	No	3,00		-
4.05.10	Reception	No	1,00		-
4.05.11	Toilet	No	1,00		-
4,06	SOCKET FIXTURES				
	Supply and Fix Socket Fixtures that conform to International Standards complete with cover plates, plates, screw or claw mounting				
4.06.01	Flush mounting socket outlet of 10-16A/1P	No	16,00		-
Total Carried to Summary					-