

ONE STOP SHOP BUILDING

Volume III – Preamble and Bills of Quantities

February 2017



ONE STOP SHOP BUILDING	
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PART 1: PREAMBLE TO BILLS OF QUANTITIES

PREAMBLE TO BILLS OF QUANTITIES

1. General Principles

- 1.1 This Contract shall be a Remeasured Contract based on Drawings, Bills of Quantities, and Specifications.
- 1.2 Bills of Quantities shall be read in conjunction with these Preambles, the Instructions to Tenderers, General and Particular Conditions of Contract, Technical Specifications and Drawings. These documents shall be taken as mutually explanatory of one another and the Contractor's rates shall be inserted accordingly against the full scope covered by the Contract. The Contractor shall not be entitled for claims or variations due to his own failure to comply with the aforesaid provision.
- 1.3 The whole of the quantities shall be treated as approximate only and are given to provide common basis for tendering. 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 quoted in the Bills of Quantities.
- 1.4 It is the Contractor's responsibility to check the correctness of the quantities inserted against each item in the quantity column of the Bills of Quantities. Engineer does not take any responsibility for the accuracy of the quantities indicated in the BOQ nor to their completeness. It is the contractor responsibility to verify, check and satisfy himself to the actual quantities that is required to complete the Works including wastage and price escalation.
- 1.5 It is the Contractor's responsibility to insert the correct rates, including wastage and, allowances etc., against each item in the unit rate column of the Bills of Quantities. Omitted items or incorrectly inserted rates shall be the sole responsibility of the Contractor.
- 1.6 The Contractor is obliged to check the number of the pages of the Bill of Quantities and should any be found missing or duplicated or the figures or writing indistinct, the Contractor must notify the Employer and or the Engineer at once and have the matter rectified before the Tender is submitted. No liability whatsoever will be accepted in respect of any claim for errors in their offer resulting from failure to comply with the aforesaid provision.
- 1.7 The Contractor shall provide together with the tendered rates; the analysis/breakdown of the rates associated to the Lump Sum Items. The detailed breakdown of rates, for each different type of works, shall be provided before the issuance of letter of acceptance all upon request by the Engineer. Such rates and breakdown might be used for the assessment of variations and/or for the establishment of new rates if found by the Engineer realistic.
- 1.8 Provisional Sums (if applicable), included in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with sub-clause 13.5 of the conditions of Contract.
- 1.9 These Preamble clauses shall be read in conjunction with the Conditions of Contract, Tender Drawings and Specification, and they shall not be considered as exhaustive but merely as highlighting certain points.

2. Method of Measurement

The Bills of Quantities have been prepared generally in accordance with the Principles of Measurement (International) for Works of Construction, June 1979, published by the Royal Institution of Chartered Surveyors, 12 Great George Street, Parliament Square, London SW1P 3AD, United Kingdom, amended to suit local practice and conditions.

3. Units of Measurement and Abbreviations

All units of measurement shall be based on the Metric System of weights and measurements except where other units are specifically mentioned for standard products.

The metric terms and symbols occurring in the Contract Documents are based on the International System of Units (French: *Système International d'Unités*) SI System.

Abbreviation	Definition
mm	millimeter
cm	centimeter
m	linear meter
m ²	square meter
m ³	cubic meter
kg	kilogram
T	Ton
nr/no.	number
LS	Lump Sum
Hr	Hour
wk	Week
USD	US Dollars
BS	British Standard
ASTM	American Society for Testing and Materials Standards
Min.	Minimum
Max.	Maximum
Qty.	Quantity
DWG.	Drawing(s)
dia. or ϕ	Diameter
Spec.	Specification
HVAC	Heating, Ventilation and Air conditioning

4. Description of Items

Description of work and materials given in the Specifications and Drawings are not necessarily repeated in the Bills of Quantities. Reference shall be made to the specifications and drawings for this information. Trade preambles are not necessarily restricted to specific Bills but shall be held to apply throughout the Documents.

Contractor has to insert price against each item of work indicated in the BOQ. If no price is inserted by the Contractor against any item of work, it shall be considered as covered or included in the remaining items elsewhere. Contractor should not insert "Not Included" against any item in the Bills of Quantities. Such inclusion may subject the bid for rejection. Should the Contractor wish to submit alternatives, he may do so by submitting an alternative bid in addition to his base bid. It is the Employer's choice to accept or reject all or part of the alternative bid.

Any discrepancy between the contract documents shall be brought to the notice of the Engineer prior to tender submittal, which shall be clarified as addendum.

Unless otherwise described, description shall be deemed to include for all sundry labours including cutting and fitting, notching, forming or cutting holes, chasing, angles, ends, short lengths, circular work, and the like as shown on Drawings, or required by the Specifications or the execution of the Works.

5. Material and Execution

All materials used are to be of the best new available and subject to the Employer and or the Engineer approval, and of durable nature, guaranteed, not liable to any base exchange and manufactured according to approved Standards.

Execution also is subject to approval of Employer and or the Engineer and shall be the best available common practice in engineering at the time of execution.

Items that contain materials/products of special make with names of manufacturers are to be taken as indication of what will be required. Subject to the Employer and or the Engineer approval, the Contractor may, at his discretion, offer similar products of other make if the equivalent quality of the specified materials is guaranteed. In this case, the Contractor shall submit a description and/or drawings showing all technical conditions, characteristics, make, type and address of Manufacturer, etc., of the materials offered as alternatives.

6. Pricing Generally

The Contractor shall satisfy himself as to the meaning of every item in the Bills of Quantities and rates inserted shall be deemed to cover all his contractual obligations under the Contract and all items necessary for the proper construction, completion, and maintenance of the Works. And where no rates are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of Work.

Rates shall include but not be limited to:

- a) Guarantees, bonds, and warranties except where else stipulated in the contract.

- b) All expenses required for insurance of the Works and Contractor's plant, except where else stipulated in the Contract;
- c) Fees required for work permits, except where else stipulated in the Contract.
- d) Payment of all government dues, duties, fees and charges, customs or other import duties, harbour wharfage and port dues, landing, quay and storage charges and any other local charges or dues applicable on all plant and materials imported for the purpose of incorporating the same into the Works.
- e) Any local taxes / duties required to be paid to the local authorities;
- f) The cost of site services (water and electricity required for execution of the job).
- g) The cost of survey equipment and setting out;
- h) The cost of material, transportation charges/ fees, tools, equipment and plants, handling, and storage;
- i) The cost of tests and retests (if required);
- j) Value added tax (VAT);
- k) The Contractor's overhead & profit;
- l) Engagement of expatriate staff (if required) including their accommodation and food quarters, air travel, insurances, indemnities, notices, leaves, sicknesses, income tax and any other fee or duty applicable on their salaries, repatriation of expatriates to country of recruitment.
- m) Payment of wages and salaries for skilled and unskilled labour, supervisory staff (including agents, engineers, surveyors, technicians, general and other foremen, gangers, timekeepers, clerks, mechanics, etc.), and for all official holidays and vacations, sick leave, indemnities, bonus, social security insurances, including all remunerations and other incidental payments pertinent to the works.
- n) Rates shall also include for, but not be limited to, all temporary works required, the provision and use of all plant required for carrying out the works in its proper sequence, shifting, altering and adapting such temporary works and plant as may be required during the progress of the Works and removing at completion and making good any surface disturbed. The unit rates shall be deemed to include for the cost of preparing the tender, all costs associated with the preparation of the final account, all other establishment charges and on-costs of whatever nature. No claim for additional payment will be allowed for any error or misunderstanding by the Contractor in this respect.
- o) Unit prices, for mechanical, electrical, plumbing, drainage system, and instrumentation installations, included as part of the scope of this Contract, are deemed to include the cost of installation, fixing, and re-fixing of all elements, testing, retesting (if required) and commissioning;
- p) The Contractor is to ensure that identical items occurring in separate bills are not priced at different rates.

- q) The prices and rates entered by the Contractor against items in the Bills of Quantities shall apply throughout the duration of the Contract to the execution of these items in any location and, except where otherwise provided for, to any additional work ordered by the Engineer and /or the Employer.
- r) The rates inserted will be used to determine the amount of the Contractors Interim Payments.

NOTES ON MEASUREMENT AND PAYMENT

7. SITE WORK

Demolition

7.1 Measurement of demolishing works shall be made per item of work that needs to be demolished.

Rates for Demolition shall include for:

7.2 All equipment, tools and labour required for completing the demolition works.

7.3 Removal, disposal and transport of demolished materials to the approved location.

7.4 Any bracing needed for supporting the building during demolition works.

7.5 Safety consideration for other parts of the building not required to be demolished.

7.6 Storage of demolished materials for re-use if so described.

Excavation & Backfilling

7.7 Excavation Works have been measured net in cubic meters (m³). No allowance shall be made for increase in bulk, planking and strutting or other means of upholding the faces of excavation or for extra working space required and the Contractor shall allow for these and any other incidental expenses in his unit rates.

7.8 Measurement of filling material shall be made of the net volume, in cubic meters (m³), as equal the void to be filled.

Rates for Excavation shall include for:

7.9 Excavating in any type of ground, excavating below the water table if necessary and shall cover the uprooting of all trees, stumps, roots, hedges (if any), clearing and grubbing of top soil, vegetable and organic matters, drift sand, unsuitable soil and rubbish (minimum 300 mm deep) falling within the areas to be occupied by the works and removal from the site to approved dumps as directed by the Engineer.

7.10 Excavating in rock (if any) which in the opinion of the Engineer requires removal by means of drilling, breaking, wedging, etc. or by any power operated hand tool.

7.11 Removal of any buried structure not to be part of the proposed construction, including transport and disposal of buried structure to a location approved by the Engineer.

7.12 Trimming bottoms and sides of excavation to the widths and depths shown on Drawings and include removal of all drift, sand, dust and rubbish which may accumulate on the site or in excavations and keeping the site and excavations free from water during the progress of the works to the satisfaction of the Engineer.

- 7.13 Manual removal of the bottom layer of excavations minimum 200 mm thick, just before concrete blinding is to be placed and the Contractor shall make up, at his own expense the difference between levels excavated deeper than the levels shown on Drawings, with plain concrete.
- 7.14 Removal of excavated material to spoil heaps in approved locations for future use. Rates shall include for loading, transporting, depositing, spreading and levelling surplus excavated material in locations approved by the Engineer.
- 7.15 Rate for excavation shall include for any and all dewatering and shoring system required to the Engineer's approval.

Rates for backfilling shall include for:

- 7.16 The cost of selecting, grading, leveling, watering and compacting in layers as specified.
- 7.17 Additional fill necessary to make up final levels.
- 7.18 Any temporary spoil heaps and multiple handling as necessary.
- 7.19 Temporary retaining boards.
- 7.20 Hand-picking where required.

8. ANTI-TERMITE TREATMENT

- 8.1 Area of anti-termite treatment has been measured flat as net area only. Rates shall be deemed to include for all works such as extra areas to be treated around the building, creating vertical barrier by trenching around the building, special treatment around pipes and other penetration, treating any filling/backfilling, etc.

9. CONCRETE WORK

Concrete

- 9.1 Plain and reinforced concrete have been measured net in square meter (m²) stating the thickness. Precast units are measured in linear meter stating the overall sizes. The volume of concrete displaced by reinforcement and the volume of pockets, holes, chases, mortices and the like are not deducted. Voids of less than 0.5 m² in area are also not deducted.
- 9.2 Columns and walls below ground have been measured from top of foundation to top of basement slab or ground slab.
- 9.3 Tie Beams and strap beams have been measured up to the top of basement slab or ground slab.
- 9.4 Columns and walls other than '9.2' above have been measured from top of slabs to the soffit of slabs.
- 9.5 Beams have been measured as full depth including the part within slab thickness.

- 9.6 Upstands, parapets, kerbs and the like have been measured from the top of the slab from which they project.

Reinforcement Steel Bars

- 9.7 The Contractor is advised not to purchase reinforcement steel bar with non-standard sizes and strength less than 460 N/mm².

Rates for concrete shall include for:

- 9.8 The rate for square meter (m²) of reinforced concrete slab is deemed to include the cost of hidden beams and drop panels (if any) as per structural drawings.
- 9.9 The supply of all materials inclusive reinforcement steel bars, storage, plant and equipment, tools, admixtures, trial mixes, mixing, sampling and testing.
- 9.10 Batching, mixing, transporting, placing, controlling the concrete temperature, compacting and vibrating, fix of all types of embedded items and compacting around them.
- 9.11 Forming construction joints and provision of water stops (where necessary) and forming edges of beds where laid in bays.
- 9.12 Providing tamped or trowelled or floated surfaces as required and for finishing to falls or slopes.
- 9.13 Thicknessing under block walls.
- 9.14 Cutting or forming mortices, apertures, grooves, chases, rebates and chamfers.
- 9.15 Grouting, casting in-pipes, pipe sleeves, ducts, dowels, fixing bolts and the like.
- 9.16 Curing and protection including impermeable sheets and the use of water sprays.
- 9.17 The preparation of a detailed bar bending schedule and submission for Engineer's approval.
- 9.18 Provision of method statement, design calculations, shop drawings and any mockup/placement samples as required by the Engineer.
- 9.19 All necessary formwork including shutter oils, angles and intersections, forming grooves, throats, sinkings and splays, raking and circular cutting around all pipes, ducts and the like and strings of stairs, striking and rubbing down and making good concrete surfaces after formwork is removed.
- 9.20 Fairface and architectural finishes as required.
- 9.21 All reinforcement, fabric mesh, links, stirrups, chairs, etc. including cleaning, bending, cutting, notching and all necessary supports and spacers and spacer bars, distance pieces and steel binding wires.

9.22 Wall ties including fixing to formwork, bending and casting into concrete and subsequently straightening and building into joints in blockwork.

10. BRICK / BLOCK WORK& INTERNAL PARTITIONS

10.1 Measurement of brick/ block works shall be made of the net area. No deduction shall be made for voids less than 0.5m² in area.

10.2 Double walls (other than cavity walls) have been measured as single walls of respective sizes.

Rates for Brick / Block Work & Internal Partitions shall include for:

10.3 The supply of all necessary materials, manufacture, sampling and testing, haulage, hoisting, scaffolding, erection and curing of brick / block work to the dimensions shown on Drawings and as specified.

10.4 All rough and fair cutting and waste, cutting and pinning to soffits, cutting to and plumbing angles, inter-sections and ends, bonding with wall ties to reinforced concrete members, forming openings, chases, mortices, leaving temporary openings in walls for structural members and making good.

10.5 Raking out joints as the work proceeds to form a key for plastering (rendering) or pointing as required.

10.6 Forming grooves for flashings, etc. and leaving weep holes.

10.7 Forming cavities including wall ties and insulation materials as specified and all extra materials and labour for closing cavities at sills, jambs, etc.

10.8 Providing solid block instead of hollow blocks at junction between ceiling soffits and walls and for all opening jambs and sills.

10.9 Providing solid block instead of hollow in the first course of all block walls.

10.10 Providing expanded metal lath at junctions of brick/ block work and concrete.

11. Water-Proofing and Damp-Proofing Works

11.1 Water-proofing and Damp-proofing materials have been measured net in square meter with no allowance made for overlaps, and openings less than 0.5 m² in area has not been deducted.

Rates for Water-Proofing and Damp-Proofing Works shall include for:

11.2 Preparation of surfaces to be covered.

11.3 Rates shall include for laps, straight and curved cutting, waste and for fitting around obstructions.

11.4 Forming collars and watertight joints around roof outlets, pipes and ducts passing through roof slab.

11.5 Rates for waterproofing to wet areas are deemed to include for carrying the waterproofing up walls to 150mm above finished floor level and up to 150mm above the edge of bathtubs.

12. CARPENTRY & JOINERY

12.1 All carpentry and joinery work has been measured and described as the net finished sizes after fixing in position.

12.2 Timber shall be deemed to be wrought, i.e. planed (polished) finish, unless otherwise described.

Rates for carpentry and joinery items shall include:

12.3 Framing in the best manner and in accordance with the detailed Drawings, and for all labour, notching, cutting and waste, halvings, morticing, tenoning, wedging, scribing, openings, forming chamfers, grooves, rebates, rounded shapes, preparing surfaces to receive finishes, plugging to concrete and brick /block work, making good all other sundry items of a like nature as required.

12.4 Protecting all work liable to be damaged or as may be required by the Engineer and removing on completion.

12.5 For providing cramps, screws, nails and other fixing devices.

Rates for doors shall include for:

12.6 Painting backs of frames with primer before fixing in position.

12.7 Ironmongery including matching fixing screws, etc. and shall include for fixing, removing before painting and then refixing.

12.8 Sub-frame as specified.

12.9 Fitting and hanging.

12.10 Preparing and painting or polishing/varnishing as indicated.

12.11 Rates for glazed doors shall include glass and beads.

12.12 The rates also shall include for the cost of working to or at any height; internal or external work.

13. METAL WORK & GLAZING

13.1 Aluminum / Steel doors, windows and the like have been enumerated. Measurement of doors and windows, together with their frames shall be made of the list of doors and windows enumerated by stating the type and dimensions.

Rates for metal work shall include for:

- 13.2 Assembling, cutting and waste, welding and grinding, drilling, counter sinking, bolting and riveting.
- 13.3 Shop coating with rust inhibitive primer, haulage, protection and storage.
- 13.4 Aluminum sub-frames if and where required, hoisting and fixing in position, caulking with mastic, grouting mortices with cement and sand grout.
- 13.5 Inspection of metal work at workshop by the Engineer if necessary.
- 13.6 Ironmongery as required including matching, fixing screws, etc., and shall include for fixing, removing before painting and then refixing.
- 13.7 Approved design and quality weather and drought seals.
- 13.8 Preparation and submission of shop drawings and samples for Engineer's approval.
- 13.9 Submitting detailed design criteria and calculations allowing for factors such as the size of panels, wind load, weight of glazing, etc. to substantiate the size, strength & design of the proposed extruded sections and thickness of glass.
- 13.10 The rates also shall include for the cost of working to or at any height; internal or external work.

14. FLOOR, WALL & CEILING FINISHINGS

General

- 14.1 Floor, wall (internal & external), and ceiling finishes have been measured net in m².
- 14.2 Skirting and sills have been measured in linear length.
- 14.3 Rendering (Plastering) and wall tiling have been measured from top of skirting (if any) to soffit of slab. Where there are suspended ceilings, wall tiling measurements were taken to the soffit of the suspended ceiling plus 100 mm unless otherwise indicated on drawing. No deduction shall be made for voids less than 0.5 m².

Rates shall include for:

- 14.4 Supplying all materials, haulage, protection, storage, plant, equipment and tools, scaffolding, accessories, fixing, mixing and curing and all incidental work necessary for the proper execution of the finishing to the Engineer's satisfaction.
- 14.5 Preparing and submitting samples for approval.
- 14.6 Working to or at any height (internal or external work), narrow widths and jambs or reveals, sills, soffits of lintels, sides and soffits of beams, kerbs, upstands and making good.
- 14.7 Attending and making good all work after other trades to the Engineer's satisfaction.

Tile Finishes

Rates for tile, slab and sheet finishings shall include for:

- 14.8 Straight and curved cutting, waste, grouting, pointing and the like to execute the works to the satisfaction of the Engineer.
- 14.9 Cutting to shape around fittings, chamfering, levelling and the like and shall include for purpose made tiles and slabs (e.g. rounded edges, coves, etc.).
- 14.10 Work to falls and cross falls.
- 14.11 The preparation and furnishing, to the Engineer, of detailed work shop drawings for approval prior to commencement of work and/or ordering of materials.
- 14.12 Providing special tiles for rounded edges, internal and external angles, edge tiles, etc.
- 14.13 Providing required approved sand fills below tile or slab mortar to bring-up levels to the finished floor levels.
- 14.14 Rates for tiles to include mortar under tiles or back the tile (wall).

15. PAINTING & DECORATION

- 15.1 Painting and decoration works have been measured net in m².
- 15.2 Openings exceeding 0.50 m² have been deducted.

Rates for all paint work shall include for:

- 15.3 Supplying all necessary materials, machines, tools, brushes, etc. scaffolding, ladders, storage and protection, additives, mixing, hoisting, sampling and testing, and all other incidental requirements for the proper execution of paint work as specified.
- 15.4 Cleaning loose plaster (render) and repairing all cracks and holes with patching render properly keyed to existing and sand-papering smooth.
- 15.5 Narrow widths and in short lengths to apertures, jambs, sills, reveals, soffits of lintels, sides and top faces of curbs, panels and strips, etc. All such areas to be included within their respective main items, unless otherwise stated.
- 15.6 Painting in multicolours as required.
- 15.7 Making good all paint work to the satisfaction of the Engineer.
- 15.8 Rates for paint work on ferrous and non-ferrous metalwork shall include for cleaning with steel wire brushes or scraping as may be necessary to remove all loose scale and rust and all unexposed surfaces of ferrous and non-ferrous metalwork in false ceilings, attics, shafts, etc. shall include for applying two coats of rust inhibiting primer.

15.9 Rates for paint work for timber works shall include for rubbing down with glass paper before painting. All exposed surfaces of wood work covered with plywood lining, veneered, etc. shall receive two coats of approved wood preservative as specified.

16. PLUMBING AND MECHANICAL ENGINEERING INSTALLATIONS

All works shall be complete as specified, as shown on the drawings and to the approval of the Engineer.

16.1 Pipework lengths measured are mean lengths as fixed in position. Rates for pipework laid underground shall include all excavation, concrete encasement, sand surround, dewatering, backfilling and disposal of surplus soil.

16.2 Rates for pipework shall include joints in the running length, fittings (e.g. tees, junctions, etc.) made bends, cutting, short lengths and waste. Rates for pipework shall include for painting.

16.3 Rates for pipework shall include for pipe clips, holderbats, insulation, and lagging fixing to any background, hangers, supports, guides, expansion joints, unions, flanges, dielectric isolators, flexible coupling.

16.4 Rates for piping shall include for cleaning, flushing, and disinfection of all systems as per specifications.

16.5 Rates for piping shall include for provision of automatic air vents, drain valves of risers, air chambers and vacuum breakers.

16.6 Rates shall allow for water hammer and stress analysis of the piping network.

16.7 Rates shall allow for thrust blocks and anchors.

16.8 Rates for sanitary fixtures and accessories shall include for supply, assembling, jointing and fixing in position complete with all taps, mixers, valves, traps, cisterns, flush pipes and the like. Rates shall also include for connection to service pipes.

16.9 Rates for all plumbing work shall include for marking out positions.

16.10 Rates for mechanical installations shall include all related builders and civil works.

16.11 Builders work in connection with plumbing installation shall include, but not be limited to, cutting or forming holes, chases, channels, recessed pipes enclosure with removable covers, etc. in brick/ block work, concrete, timber and other materials, providing and building or casting in pipe sleeves, clamps, brackets, hangers, holdfasts and the like. Builders work in connection shall include for making good on completion all works disturbed by the plumbing installation.

16.12 Builder's work in connection with mechanical installation shall include but not be limited to; forming or cutting holes, chases, channels, etc., in reinforced concrete structures and brick/ block works.

16.13 Rates for Air Conditioning and Ventilation System shall include for providing pipes, sleeves, clamps, brackets, hangers, supports, tools, ladders, scaffolding, etc. painting metal works, making good around any other incidental requirements for the proper execution of the air conditioning and ventilation system in accordance with the Drawings.

- 16.14 Rates shall include for testing the equipment under the supervision of the Engineer's representative including any modifications, adjustments, or repairs which may be required during or on completion of the test, all as required and to the satisfaction of the Engineer.
- 16.15 Rates shall include for duct, sleeves, flexible connections and expansion joints, with civil and additional work.
- 16.16 Rates for all plumbing, air conditioning and ventilation systems and other mechanical installations shall include for the preparation and furnishing of detailed workshop drawings as indicated in the specifications and/or in the drawings for the approval of the Engineer prior to commencement of the works and or the ordering of materials.
- 16.17 Rates for plumbing and air conditioning and ventilation systems shall include for closing ceilings in Technical Floor shafts with either structural concrete slab or chequered plates on structural steel supports to Engineer's approval.
- 16.18 Rates shall include for walkway to cross-overs across pipes at roof levels, technical floors and basement to the approval of the Engineer.
- 16.19 Rates shall include for the provision of instruction and maintenance manual as specified.

17. ELECTRICAL INSTALLATIONS

Rates for Electrical Works shall include for:

- 17.1 Plugs, drawing wires and cables, sinking ends of cables to exposed conductors and capping ends of cables, connections to equipment with cable glands, etc.
- 17.2 Factory rust inhibiting primer, including storage and protection of all Electrical Works.
- 17.3 Supplying and painting all exposed surfaces of electrical metal work with one coat of rust inhibiting "Galvafrid" primer or approved equivalent and two coats of approved chlorinated rubber paint, and painting concealed surfaces of panel board cabinets with emulsified asphalt.
- 17.4 Laying all conduits concealed in reinforced concrete slabs, columns, walls, floors, or exposed all as indicated on Drawings.
- 17.5 Providing all testing devices, equipment and any electrical power necessary for testing, before putting into operation the completed electrical system under the supervision of the Engineer, also for carrying out any modification or repairs necessary on completion of tests to the satisfaction of the Engineer.
- 17.6 Preparation and furnishing of detailed workshop drawings as indicated in the specifications, and/or the drawings for the approval of the Engineer prior to commencement of the works and/or the ordering of materials.
- 17.7 Sealing openings, etc., with fire proofing material, if not included elsewhere.
- 17.8 Sealing ducts and pipes with water sealant compound, if not included elsewhere.

- 17.9 Rates for feeders shall include cables (single core or multicore armoured or unarmoured as applicable), conduits if any, cable cleats at every meter run, cable glands, cable tray and support, etc.
- 17.10 Rates for conduits shall include all fittings and accessories, expansion joint fittings, pull junction and terminal boxes, conduit straps, etc.
- 17.11 Rates for cables and wires shall include earthing wires and/or cables.
- 17.12 Rates for devices and equipment shall include nameplates and engraving.
- 17.13 Rates for ducts and conduit lead-ins and crossings shall include fire proof filling material.
- 17.14 Rates for electrical installations shall include all related builders and civil works.
- 17.15 Builders work in connection with electrical installation shall include but not be limited to forming or cutting holes, chases, channels, etc. in reinforced concrete structures and brick/block work and also for providing sleeves, clamps, brackets, hangers, hold fasts, screws, bolts and nuts, excavating and dewatering of trenches, backfilling for underground cable duct banks and directly buried cables. Builder's works shall also include making good around all trades disturbed by the execution of electrical installations.
- 17.16 Civil works in connection with electrical installation shall include for all incidentals and associated works, not already included elsewhere in Electrical Bill, for the proper installation, completion and commissioning of the Electrical Works.

PART 2: BILLS OF QUANTITIES

GRAND SUMMARY OF BILLS OF QUANTITIES
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

Item	Description	Total Amount (SDG / USD)
1	BILL NO. 1: SITE WORKS	
2	BILL NO. 2: CONCRETE WORKS	
3	BILL NO. 3: MASONRY WORKS	
4	BILL NO. 4: DAMP-PROOF AND WATER-PROOF WORKS	
5	BILL NO. 5: PLASTER WORKS	
6	BILL NO. 6: PAINT WORKS	
7	BILL NO. 7: TILING WORKS	
8	BILL NO. 8: DOORS AND WINDOWS WORKS	
9	BILL NO. 9: MISCELLANEOUS WORKS	
10	BILL NO. 10: LANDSCAPE WORKS	
11	BILL NO. 11: ELECTRICAL WORKS	
12	BILL NO. 12: LOW CURRENT WORKS	
13	BILL NO. 13: HVAC WORKS	
14	BILL NO. 14: FIRE FIGHTING WORKS	
15	BILL NO. 15: WATER SUPPLY SYSTEM	
16	BILL NO. 16: WATER DRAINAGE SYSTEM	
	TOTAL OF BILLS 1 UP TO 16	
	VAT AT 17%	
	GRAND TOTAL OF BILLS INCLUDING VAT	

BILL No. 1
SITE WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

IMPORTANT NOTES: By populating and pricing the BOQ items below, the Tenderer certifies and confirms his complete acquaintance with and understanding of the Site Conditions, Work Scope, Designs, Specifications, BoQ Preamble, the Conditions of Contract, the prevailing market conditions and the local laws and regulations. The Price Sufficiency Clause in the Conditions of Contract shall apply. All and any other items not priced hereunder shall be deemed part of the Unit Rate Pricing.

Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>SITE CLEARANCE</u>				
A.1	Clear the site, cut bushes and grub up roots to prepare for construction; Disposal of all surplus material from the Site to the approval of the Engineer.	LS	1		
B	<u>SURVEYING AND SETTING OUT</u>				
B.1	Carry out site survey and setting out using total station with RTK Realtime GPS to establish site control points (benchmarks), building references, and all setting out information.	LS	1		
C	<u>EXCAVATION AND DISPOSAL</u>				
	<u>Excavation starting from existing ground level (appropriate depths to be decided on site) including leveling and ramming bottom, dewatering (if any), and removal of surplus excavated material to disposal location as directed by the Engineer:</u>				
C.1	Excavation for boundary wall strip foundation (0.50m width x 1.35m depth).	m ³	70		
C.2	Excavation for pad foundations 2.5m depth.	m ³	423		
D	<u>BACKFILLING AND COMPACTION</u>				
D.1	<u>Supply and Backfil with selected fill material, in 20 cm successive layers, each layer watered and well-compacted at 95% rate:</u>				
D.1.1	Backfilling of pad foundations pits.	m ³	320		
D.1.2	Backfilling under floor.	m ³	70		
D.1.3	Backfilling of Stair Steps.	m ³	5.5		
D.2	Supply and fill sand bedding for out-door play yard as detailed in the drawings.	m ²	23		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 2
CONCRETE WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>PLAIN CONCRETE</u>				
	<u>Supply and cast Plain Concrete; Grade 20N/mm², rate to include formwork and shuttering:</u>				
A.1	Plain Concrete under foundations; 100mm thick.	m ²	170		
A.2	Plain Concrete under floor; 150mm thick.	m ²	231		
A.3	Plain Concrete for Stair Steps.	m ³	2		
B	<u>SUB-STRUCTURE REINFORCED CONCRETE</u>				
	<u>Supply and cast Reinforced Concrete; Grade 25N/mm², rate to include labour, formworks, shuttering, scaffolding, and reinforcement:</u>				
B.1	Reinforced Concrete Pad Foundations.	m ³	80		
B.2	Reinforced Concrete Short Columns.	m ³	10		
B.3	Reinforced Concrete Grade Beams.	m ³	32		
C	<u>SUPER STRUCTURE REINFORCED CONCRETE</u>				
	<u>Supply and cast Reinforced Concrete; Grade 25N/mm², rate to include labour, formworks, shuttering, scaffolding, and reinforcement:</u>				
C.1	<u>Main and Sub Entrance</u>				
C.1.1	Reinforced Concrete Columns; 3m high.	m ³	3		
C.1.2	Reinforced Concrete Cover Slab Beams.	m ³	2		
C.1.3	Reinforced Concrete Cover Slab including hidden beams; 200mm thick.	m ²	28.5		
C.1.4	Reinforced Concrete 25 N/mm ² Door and Window Lintel Beams; size (0.20 x 0.20m) with steel bar dia 16mm & 8mm links.	ML	6		
C.2	<u>Ground Floor</u>				
C.2.1	Reinforced Concrete Columns; 2.8m high.	m ³	8		

BILL No. 2

CONCRETE WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
C.2.2	Reinforced Concrete Cover Slab Beams.	m ³	12		
C.2.3	Reinforced Concrete Cover Slab; 200mm thick.	m ²	234		
C.2.4	Reinforced Concrete Staircase.	m ³	3		
C.2.5	Reinforced Concrete 25 N/mm ² Door and Window Lintel Beams; size (0.20 x 0.20m) with steel bar dia 16mm & 8mm links.	ML	55		
C.2.6	Construct ramps complete as per drawings including; excavation, masonry, backfilling, plain concrete grade 20 N/mm ² , slab on grade and Epoxy Risen. Ramps size 2.7x1.0m; 1:9 slope.	job	2		
C.3	<u>Roof</u>				
C.3.1	Reinforced Concrete Columns; 2.8m high.	m ³	2		
C.3.2	Reinforced Concrete Staircase Cover Slab Beams.	m ³	2		
C.3.3	Reinforced Concrete Staircase Cover Slab; 200mm thick.	m ²	25.5		
C.3.4	Reinforced Concrete 25 N/mm ² Door and Window Lintel Beams; size (0.20 x 0.20m) with steel bar dia 16mm & 8mm links.	ML	3		
C.4	<u>Toilets</u>				
C.4.1	Reinforced Concrete Columns; 2.8m high.	m ³	2		
C.4.2	Reinforced Concrete Cover Slab Beams.	m ³	4		
C.4.3	Reinforced Concrete Cover Slab; 200mm thick.	m ²	28		
C.4.4	Reinforced Concrete 25 N/mm ² Door and Window Lintel Beams; size (0.20 x 0.20m) with steel bar dia 16mm & 8mm links.	ML	11		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 3
MASONRY WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>STONE WORKS</u>				
A.1	Supply and construct stone strip foundation (0.50m x 0.90m) in C/S mortar 1:6 mix for boundary wall as per drawings.	m ³	46		
B	<u>BRICK WORKS</u>				
	<u>Supply and build Red Brick walls in (1:6) cement/ sand mortar as shown in drawings:</u>				
B.1	½ Brick wall for foundations formwork.	ML	273		
B.2	1 Brick wall for toilets.	m ²	26		
B.3	1½ Brick wall for boundary wall.	m ²	172		
B.4	2 Brick wall for strip foundation ; 0.3m depth.	ML	102		
B.5	Brick walls for stair steps.	m ²	16		
C	<u>BLOCK WORKS</u>				
	<u>Supply and build Cement Solid Block walls in (1:6) cement sand mortar as shown in drawings:</u>				
C.1	Block walls for grade beam cladding; 200mm thick and 0.6m high.	ML	414		
C.2	Main Entrance Block Walls; 200mm thick.	m ²	21		
C.3	Ground Floor Block Walls; 200mm thick.	m ²	290		
C.4	Roof Block Walls; 200mm thick.	m ²	42		
C.5	Toilets Block Walls; 200mm thick.	m ²	47		
C.6	Parapet Block Walls; 200mm thick and 0.5m high.	ML	119		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 4

DAMP-PROOF AND WATER-PROOF WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>DAMP-PROOF AND WATER-PROOF WORKS</u>				
A.1	Provide and apply Bituminous Protective Coating around footings and short columns, all as shown in drawings.	m ²	431		
A.2	Supply and lay in position one layer of 4mm APP Membrane for Toilets floor as per drawings and including shop drawing, treatment details, method of statement and material data sheet submittal for the Engineer's approval.	m ²	22		
A.3	Supply and cast khafga to control required slope as shown in drawings.	m ²	279		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 5

PLASTER WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>PLASTER WORKS</u>				
	<u>Supply and apply cement sand plaster; 20 mm thick in two layers, 1:6 cement: sand mix finished smooth including expanded metal lath when applied on concrete surfaces and working to or at any height, narrow widths and jambs or reveals, sides and soffits of beams, upstands and making good:</u>				
A.1	<u>Boundary Wall</u>				
A.1.1	Plastering of walls both sides.	m ²	347		
A.2	<u>Main Entrance</u>				
A.2.1	Plastering of walls internally.	m ²	29.5		
A.2.2	Plastering of ceiling.	m ²	18		
A.2.3	Plastering of walls externally.	m ²	52		
A.3	<u>Ground Floor</u>				
A.3.1	Plastering of walls internally.	m ²	1,778		
A.3.2	Plastering of ceiling.	m ²	233.5		
A.3.3	Plastering of walls externally.	m ²	279		
A.4	<u>Roof</u>				
A.4.1	Plastering of walls internally.	m ²	37		
A.4.2	Plastering of ceiling.	m ²	25.5		
A.4.3	Plastering of walls externally.	m ²	122		
A.5	<u>Toilets</u>				
A.5.1	Plastering of ceiling.	m ²	23		
A.5.2	Plastering of walls externally.	m ²	86		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 6

PAINT WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>INTERNAL PAINT</u>				
	<u>Supply and apply Emulsion paint on cement/ sand plaster including preparatory coat, as per drawings and specifications:</u>				
A.1	<u>Main Entrance</u>				
A.1.1	Painting of walls internally.	m ²	29.5		
A.1.2	Painting of ceiling.	m ²	18		
A.2	<u>Ground Floor</u>				
A.2.1	Painting of walls internally.	m ²	1,778		
A.2.2	Painting of ceiling.	m ²	233.5		
A.3	<u>Roof</u>				
A.3.1	Painting of walls internally.	m ²	37		
A.3.2	Painting of ceiling.	m ²	25.5		
A.4	<u>Toilets</u>				
A.4.1	Painting of ceiling.	m ²	23		
B	<u>EXTERNAL PAINT</u>				
	<u>Supply and apply Acrylic Polyurthane paint smooth texture on cement/ sand plaster including preparatory coat, as per drawings and specifications:</u>				
B.1	<u>Boundary Wall</u>				
B.1.1	Painting of walls externally.	m ²	347		

BILL No. 6

PAINT WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
B.2	<u>Main Entrance</u>				
B.2.1	Painting of walls externally.	m ²	52		
B.3	<u>Ground Floor</u>				
B.3.1	Painting of walls externally.	m ²	279		
B.4	<u>Roof</u>				
B.4.1	Painting of walls externally.	m ²	122		
B.5	<u>Toilets</u>				
B.5.1	Painting of walls externally.	m ²	86		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 7
TILING WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>TILING WORKS</u>				
	<u>Supply & install of tiles & skirting including cement sand screed, grouting, and pointing</u>				
A.1	<u>Main Entrance</u>				
A.1.1	Floor type F1; Ceramic Tiles size 400 x 400 mm.	m ²	10		
A.1.2	Skirting type S1; Ceramic Skirting 100 mm high to match color.	ML	10.5		
A.2	<u>Ground Floor</u>				
A.2.1	Wall type W2; Glazed Ceramic Tiles for kitchen; size 300 x 450 mm.	m ²	41		
A.2.2	Floor type F1; Ceramic Tiles size 400 x 400 mm.	m ²	205		
A.2.3	Skirting type S1; Ceramic Skirting 100mm high to match color.	ML	516		
A.2.4	Floor type F3; Red Marble Granite treads (with anti-slip nosing) for staircase; size 300 x 1000mm.	no.	18		
A.2.5	Floor type F3; Red Marble Granite treads (with anti-slip nosing) for stair steps; size 300 x 2000 mm.	no.	3		
A.2.6	Floor type F3; Red Marble Granite treads (with anti-slip nosing) for stair steps; size 300 x 2500 mm.	no.	6		
A.2.7	Floor type F3; Red Marble Granite treads (with anti-slip nosing) for stair steps; size 300 x 3500 mm.	no.	3		
A.2.8	Floor type F3; Red Marble Granite treads (with anti-slip nosing) for stair steps; size 300 x 4500 mm.	no.	3		
A.2.9	Floor type F3; Red Marble Granite risers for staircase; size 150 x 1000mm.	no.	18		

BILL No. 7

TILING WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A.2.10	Floor type F3; Red Marble Granite risers for staircase; size 150 x 2000mm.	no.	3		
A.2.11	Floor type F3; Red Marble Granite risers for staircase; size 150 x 2500mm.	no.	6		
A.2.12	Floor type F3; Red Marble Granite risers for staircase; size 150 x 3500mm.	no.	3		
A.2.13	Floor type F3; Red Marble Granite risers for staircase; size 150 x 4500mm.	no.	3		
A.2.14	Skirting type S2; Red Marble Granite Skirting 100mm high for staircase.	ML	13		
A.3	<u>Roof</u>				
A.3.1	Floor type F1; Ceramic Tiles size 400 x 400 mm.	m ²	10		
A.3.2	Floor type F4; Terazzo Tiles size 400 x 400 x 20mm for Terrace.	m ²	223		
A.3.3	Floor type F4; Terazzo Tiles size 400 x 400 x 20mm for entrance, ground floor and toilets roofs.	m ²	279		
A.4	<u>Toilets</u>				
A.4.1	Wall type W2; Glazed Ceramic Tiles size 300 x 450 mm.	m ²	47		
A.4.2	Floor type F2; Non slip Ceramic Tiles on mortar bed for toilets; size 300 x 300mm.	m ²	22		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 8
DOORS AND WINDOWS WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
DOORS AND WINDOWS WORKS					
<u>Supply and fix complete doors and windows complete with all accessories as detailed on drawings and specified and to the Engineer's approval:</u>					
A	<u>Ground Floor</u>				
A.1	<u>Doors</u>				
A.1.1	Door type D1; size 2000 mm x 2200 mm.	no.	1		
A.1.2	Door type D2; size 1000 mm x 2200 mm.	no.	11		
A.1.3	Door type D3; size 1500 mm x 2200 mm.	no.	1		
A.1.4	Door type D4; size 800 mm x 2100 mm.	no.	4		
A.1.5	Door type D5; size 3000 mm x 2300 mm.	no.	1		
A.2	<u>Windows</u>				
A.2.1	Windows type W1; size 1000 mm x 1400 mm.	no.	20		
A.2.2	Windows type W2; size 500 mm x 500 mm.	no.	4		
A.2.3	Windows type W3; size 2000 mm x 2500 mm.	no.	1		
B	<u>Roof</u>				
B.1	<u>Doors</u>				
B.1.1	Door type D2; size 1000 mm x 2200 mm.	no.	1		
B.2	<u>Windows</u>				
B.2.1	Windows type W1; size 1000 mm x 1400 mm.	no.	1		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 9
MISCELLANEOUS WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>WOOD WORKS</u>				
A.1	Design, supply and install wooden roof for children's playing room as detailed in the drawings.	m ²	22		
B	<u>METAL WORKS</u>				
B.1	<u>Decorative Metal Works:</u>				
B.1.1	Supply and install decorative steel grill for boundary wall as detailed in drawings.	job	1		
B.2	<u>Handrail</u>				
B.2.1	Supply and install stainless steel handrail for staircase as detailed on drawings.	ML	7		
B.2.2	Supply and install stainless steel handrail for roof as detailed in the drawings.	ML	109		
B.3	<u>Windows Grill</u>				
B.3.1	Supply and install steel window grill; with sizes detailed in drawings.	m ²	37		
B.4	<u>Canopy Work</u>				
B.4.1	Supply and install canopy steel columns and fabric canopy as shown in drawings.	job	1		
C	<u>INTERLOCK WORKS</u>				
C.1	Supply and install precast concrete interlocking tiles including sand bedding all as detailed in the drawings.	m ²	400		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 10
LANDSCAPE WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>EXCAVATION WORKS</u>				
A.1	Excavation for wall to be filled with excavated soil; excavation starting from existing ground level (1.0m depth extend below foundations level) including leveling and ramming bottom, dewatering (if any) as directed by the Engineer.	m ³	401		
A.2	Excavation and disposal for area 30cm to be filled with Nile Clay soil as directed by the Engineer.	m ³	35		
B	<u>PLAIN CONCRETE</u>				
B.1	Supply and cast Plain Concrete; Grade 20N/mm ² , rate to include formwork and shuttering.	m ²	38		
C	<u>BRICK WORKS</u>				
	<u>Supply and build Red Brick walls in (1:6) cement/ sand mortar:</u>				
C.1	1½ Brick wall.	m ²	259		
D	<u>DAMP-PROOF AND WATER-PROOF WORKS</u>				
D.1	Supply and lay in position one layer of 4mm APP Membrane for wall internal side as per drawings and including shop drawing, treatment details, method of statement and material data sheet submittal for the Engineer's approval.	m ²	259		
E	<u>BACKFILLING WORKS</u>				
E.1	Backfilling for wall area with excavated soil.	m ³	286		
E.2	Provide and lay light Nile Clay soil, free from weeds; 30cm depth.	m ³	35		
F	Supply and plant grass with good quality grown thick in small plastic bags; rate shall include replacement of existing soil by approved planting soil (river sand-silty soil) including irrigation; contractor to maintain irrigation of the plants during one year warranty period.	m ²	115		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 11
ELECTRICAL WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>DISTRIBUTION PANEL SWITCH BOARD</u>				
	<u>Supply, install & test distribution panel switchboard enclosure, form 2, IP 44, including circuits breakers, wires, connections, earthing, pilot light, ammeters, voltmeters, glands & all necessary accessories as specified & as per SLD:</u>				
A.1	SMDB: 50 A, 9 way TPN+E.	no.	1		
A.2	DB:AC: 63 A, 5 way TPN+E.	no.	1		
B	<u>POWER CABLE</u>				
	<u>Supply, install, test & terminate LV power cables, CU/XLPE/SWA/PVC, with trenching, backfilling, cable markers, cable tiles, supports and fixing to cable trays, trunks, and conduits, tagging, lugs, glands and all necessary accessories as specified and as per SLD:</u>				
B.1	Dia 16 mm².	ML	10		
C	<u>LIGHTING SYSTEM</u>				
	<u>Supply, install & test lighting outlet & fixtures, rosace, pendant cables, conduits, wiring, junction boxes & all necessary accessories as specified and as per drawing:</u>				
C.1	Surface Scone Light 2 x18 W.	no.	12		
C.2	Surface Plain Lighting 2 x 36 W.	no.	20		
C.3	Surface Plain Lighting 36 W IP 65.	no.	15		
C.4	Surface Down Light CAN 30 W IP 42.	no.	10		
C.5	Wall Pack Light 50 W IP 56.	no.	8		
C.6	Flood Light Wall Mounted IP 65.	no.	7		

BILL No. 11
ELECTRICAL WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
C.7	Ceiling Fan 100W.	no.	12		
D	<u>LIGHTING SWITCHES</u>				
	<u>Supply, install & test switch, box in wall, support, wires and conduits from switch to lighting point, and all necessary accessories:</u>				
D.1	One way one gang switch.	no.	3		
D.2	Two way two gang switch.	no.	20		
D.2	One way three gang switch.	no.	3		
D.4	Dimmar switch for ceiling fan	no.	12		
E	<u>SOCKETS</u>				
	<u>Supply, install & test switched outlet sockets, with boxes in walls, supports, wires and conduits including all necessary accessories as specified & as indicated in the drawings:</u>				
E.1	13 A single switched socket with neon indicator.	no.	6		
E.2	13 A twin switched socket with neon indicator.	no.	28		
E.3	13 A twin switched socket with neon indicator IP 65.	no.	8		
E.4	Double pole switch with neon indicator 20 A.	no.	11		
E.5	Shaver socket 10 A.	no.	1		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 12
LOW CURRENT WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>DATA, TELEPHONE & TV POINT</u>				
	<u>Supply install and test the following data & telephone devices & equipments & public address system, including boxes, conduits, cables in between and to data/telephone cabinet:</u>				
A.1	Supply and install of Cat6 Patch Cords 1 Mtr from the patch panel to the data switches as per the Owner/Consultant advise. Cable color should be different from that of telephone network cable color.	no.	20		
A.2	Dual Face Plate (Data + Voice).	no.	10		
A.3	TV Point.	no.	4		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 13

HVAC WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
*	The contractor shall provide all the material, labour, cartage, plant and appliances necessary for supply, install, testing and commission of the works including all other minor and incidental works necessary for the system.				
*	The Specifications and Design Drawings are intended to indicate the nature and scope of the Project. Contractor shall be responsible for the preparation of detailed coordinated working drawings and for installation of plant of the correct capacity, as per approved drawings and in line with the best prevailing engineering practices.				
*	Contractor shall guarantee for the efficient performance of various equipment which shall be not less than the specified rating when working under the max operating conditions in Sudan for respective items as given in the drawings.				
*	All works are to be carried out to relevant standard and relevant internationally accepted codes of practice as well as current Local Authority Regulations.				
*	The Contractor is advised to read carefully the notes on pricing for Air Conditioning when pricing the works in this section.				
*	The mechanical work shall include supply, install, test, adjust, balance, all the way & devices to insure the successful operation including the commissioning				
*	Unless otherwise noted all mechanical equipment should be protected from mechanical & electrical faults and damages, and should be connected to the earthing system.				
*	Supply, install, test, and commission the Air-conditioning (AC) system with all accessories, auxiliaries and controls. This BOQ is all inclusive price rates for complete turn-key AC system execution basis.				

BILL No. 13

HVAC WORKS

UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
*	All the AC system shall operate on power supply for Sudan: 380 - 415V / 3Ph / 50Hz. 220 - 240V / 1Ph / 50Hz. Ambient Temp 46°C.				
A	<u>AIR COOLER UNITS</u>				
	<u>Supply, install, and commission wall mounted air cooler units (Nassma type or equivalent); with high gauge steel sheet coated with weather proof powder and anti-corrosion paint, all complete with switch control motor, water pump, accessories, wall support and water supply piping and valves (size 3/4" PPR) :</u>				
A.1	Air Cooler Unit - Wall mounted 6000 unit.	no.	1		
A.2	Air Cooler Unit - Wall mounted 4000 unit.	no.	3		
A.3	Air Cooler Unit - Wall mounted 3000 unit.	no.	5		
B	<u>EXHAUST FANS</u>				
	<u>Supply, install, and commission wall mounted exhaust fan with nozzle, spring isolator to minimize noise and vibration, with PVC louvers:</u>				
B.1	Kitchen EX.Fan (320 CFM).	no.	1		
B.2	Toilet EX.Fan (140 CFM).	no.	1		
B.3	Toilet EX.Fan (75 CFM).	no.	4		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 14
FIRE FIGHTING WORKS
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>FIRE FIGHTING WORKS</u>				
	<u>Supply, install, and test Fire Extinguishers as follows:</u>				
A.1	4.5 Kg Multi-Purpose Powder Portable Fire Extinguisher against class A. The location and type of fire extinguisher must be according to (NFPA) code, Civil Defence & Engineer requirements. Must be of highest quality and by reputed manufacturer.	no.	3		
A.2	4.5 Kg Carbon Dioxide Portable Fire Extinguisher against class B & C. The location and type of fire extinguisher must be according to (NFPA) code, Civil Defence & Consultant requirements. Must be of highest quality and by reputed manufacturer.	no.	3		
B	<u>SUNDRY WORKS</u>				
B.1	Provide supports for all fire fighting equipment and pipes including fixings, anchors and any anti-vibration devices.	LS	1		
B.2	Provide plates, discs, labels, charts and colour coding as applicable for all fire fighting equipment and pipes indicated above.	LS	1		
B.3	Testing, commissioning and one year free maintenance for all fire fighting installations indicated above.	LS	1		
B.4	Provide all necessary shop drawings in CAD A3 size in colour - 3 copies each.	LS	1		
B.5	Provide all necessary documents drawings, operating instructions, and maintenance manuals for fire fighting installation (3 colour print copies).	LS	1		
B.6	Allow for all costs involved in the preparation and submission of As-Built Drawings and record of works.	LS	1		
B.7	Allow for co-ordination of works with other trades.	LS	1		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 15
WATER SUPPLY SYSTEM
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>TOILETS SANITARY FIXTURES</u>				
	<u>Supply, install, connect, and test the following sanitary fixtures, fittings, and accessories all in accordance with the specifications:</u>				
A.1	<u>W/C complete with the following:</u>				
A.1.1	W/C with anchors and supports; Flush Tank.	no.	2		
A.1.2	Chrome plated copper flex pipes.	no.	2		
A.1.3	Complete all toilets fittings and accessories.	Set	1		
A.2	<u>Hand shower (Shattaf) connections of the following size:</u>				
A.2.1	DN 32 mm diameter hand shower for WC's.	no.	2		
A.3	<u>Lavatory Hand Wash Basin complete with the following:</u>				
A.3.1	Lavatory basin with anchors and supports.	no.	2		
A.3.2	Chrome plated water mixer.	no.	2		
A.3.3	Chrome plated copper flex pipes.	no.	4		
A.3.4	Seal plastic bottle trap plus plastic extension pipe complete with wall flanges.	no.	2		
A.3.5	Wash basin liquid soap dispenser.	no.	1		
A.3.6	Complete all fittings and accessories.	Set	1		
A.4	<u>Shower Tray complete with the following:</u>				
A.4.1	Corner floor shower tray with anchors, supports and all fittings and accessories.	no.	2		

BILL No. 15
WATER SUPPLY SYSTEM
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A.4.2	Chrome plated mixer and hand held shower rose with optional rail.	no.	2		
A.4.3	Complete all toilets fittings and accessories.	Set	1		
A.5	<u>Internal Pipes & Fittings</u> <u>Supply and install PPR laid pipes in walls, complete including all fittings and accessories as shown in drawings and or specified to the approval of the Engineer:</u>				
A.5.1	DN 40 mm.	LS	1		
A.5.2	DN 32 mm.	LS	1		
A.6	<u>Internal Valves Fittings</u> <u>Supply and install valves fittings for domestic water of the following sizes all wherever shown in drawings or specified and as approved by the Engineer:</u>				
A.6.1	DN 40 mm Wall Concealed valve.	no.	1		
A.6.2	DN 32 mm Angle valve.	no.	10		
B	<u>KITCHEN SANITARY FIXTURES</u>				
B.1	<u>Kitchen sink complete with the following:</u>				
B.1.1	Stainless steel double bowl two wings kitchen sink complete with over flow & brackets.	no.	1		
B.1.2	Chrome plated water mixer.	no.	2		
B.1.3	Chrome plated copper flex pipe.	no.	2		
B.1.4	Seal plastic bottle trap plus plastic extension pipe complete with wall flanges.	no.	2		

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WATER SUPPLY SYSTEM
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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
B.1.5	Complete all fittings and accessories.	Set	1		
B.2	<u>Internal Pipes & Fittings</u> <u>Supply and install PPR laid pipes in walls, complete including all fittings and accessories as shown on drawings and or specified and to the approval of the Engineer:</u>				
B.2.1	DN 32 mm.	LS	1		
B.3	<u>Internal Valves Fittings</u> <u>Supply and install angle valves of the following size all wherever shown on drawings or specified and as approved by the Engineer:</u>				
B.3.1	DN 32 mm Wall Concealed valve.	no.	1		
B.3.2	DN 32 mm Angle valve for cold water.	no.	4		
C	<u>EXTERNAL WATER SUPPLY SYSTEM</u>				
C.1	<u>Elevated Water Tank</u> <u>Supply, install, test and commission elevated plastic (Polyethylene) water storage tank to be supported on steel structure as shown in drawings. Rate shall include installation with associated pipework including inlets, outlets, washouts, overflow, venting, isolating valves, non-return valves, RC concrete foundation, sunshade, etc. as specified and directed by the Engineer. Location shown in the drawings:</u>				
C.1.1	Storage Tank; Capacity of 4 m³.	no.	1		
C.2	<u>Domestic Feeding Pump (From Authority Water Supply Line to Ground Tank)</u>				

BILL No. 15
WATER SUPPLY SYSTEM
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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
	<u>Supply, install, test and commission identical centrifugal pump with Variable Frequency Drive (VFD). The pump shall be supplied complete, pre-assembled and tested including isolating valves, non-return valves, suitable diaphragm tank, pressure gauges. The pump is automatically operated according to system demand, all complete as specified and shown on the drawings and directed by the Engineer:</u>				
C.2.1	Main Feeding Pump Q= 4 m³/hr @ 22m TDH.	no.	1		
C.3	<u>External Pipes & Fittings</u>				
	<u>Supply and install external PPR pipes in walls, complete including all fittings and accessories as shown on drawings and or specified and to the approval of the Engineer:</u>				
C.3.1	DN 50 mm diameter pipe.	LS	1		
C.3.2	DN 40 mm diameter pipe.	LS	1		
D	<u>SUNDRY WORKS</u>				
D.1	Provide supports for all plumbing equipment and pipes including fixings, anchors, insulating blocks and any anti-vibration devices.	LS	1		
D.2	Provide plates, discs, labels, charts and color coding as applicable for all plumbing equipment and pipes indicated above.	LS	1		
TOTAL CARRIED TO GRAND SUMMARY					

BILL No. 16
WATER DRAINAGE SYSTEM
UNICEF STOP SHOP / LOCATION: KASSALA & GADARIF STATE - SUDAN

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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
A	<u>INTERNAL WATER DRAINAGE FOR TOILETS AND KITCHEN</u>				
A.1	<u>UPVC Pipes and Fittings</u> <u>Supply and install UPVC pipes the following soil, waste and vent pipes laid exposed, in walls and in shafts complete with all accessories and fittings wherever shown on drawings and to the approval of the Engineer:</u>				
A.1.1	DN 100 mm UPVC soil pipe.	LS	1		
A.1.2	DN 80 mm UPVC vent pipe.	LS	1		
A.1.3	DN 50 mm UPVC waste pipe.	LS	1		
A.1.4	DN 40 mm UPVC waste pipe.	LS	1		
A.2	UPVC Floor Clean Out (FCO) with cover.	no.	13		
A.3	DN 50 mm UPVC floor drain.	no.	6		
B	<u>WATER WELL</u>				
B.1	Percolating pit dia 2m and minimum depth 12m, according to specification as indicated in the drawing and directed by the Engineer including all excavation, concrete work, brick work 2m high, water depth, inspection air tight cover heavy duty type ...etc. to complete work.	job	1		
C	<u>SEPTIC TANK</u>				
C.1	Supply, install, test and commission circular precast septic tank (2m dia and 1.6m depth) as shown in the drawings and directed by the Engineer; complete with accessories, the price includes excavation, backfilling, compaction, tank covers, and connections to the services, with capacity of 4.6 m ³ (50 person).	job	1		
D	<u>SEWER MANHOLES</u>				

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WATER DRAINAGE SYSTEM
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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
D.1	<p><u>Supply and build circular reinforced concrete manholes (Grade C35). Rate shall include labour and materials covering excavation, dewatering, sand bedding, backfilling with selected materials, mech compaction, blinding concrete for base, manhole benching, bituminous internal and external water-proof protection, coring, all as specified and shown in drawings:</u></p> <p>Manhole internal dia 1000 mm; wall thickness 15 cm with varying depths to invert from 1.0 to 1.5m.</p>	no.	3		
E	<u>SEWER MANHOLE COVERS</u>				
E.1	<p><u>Supply and install circular heavy duty cast iron manhole cover to match the manhole cone size:</u></p> <p>Cast Iron Manhole Covers size 80 dia.</p>	no.	3		
F	<u>SEWER UPVC PIPES AND FITTINGS</u>				
F.1	<p><u>Provide, install, test and commission heavy duty UPVC pipes (min 16-Bar) and fittings as specified, shown on the drawings and directed by the Engineer all complete with accessories, flexible joints sealed with approved gasket rubber ring, trenching, supporting as necessary, dewatering, excavation, sand backfilling, mech compaction, connections from sewer inlets to sewer outfall:</u></p> <p>100 mm outside diameter UPVC pipe.</p>	LS	1		
G	<u>GULLY TRAPS</u>				
	<p><u>Supply and install precast concrete gulley traps (Grade C30). Rate shall include labour and materials covering excavation, dewatering, backfilling with selected materials, mech compaction, base blinding concrete, benching, bituminous internal and external water-proof protection:</u></p>				

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WATER DRAINAGE SYSTEM
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Item	Description	Unit	Qty.	Unit Rate (SDG / USD)	Total Amount (SDG / USD)
G.1	Gully Traps size 60 x 60cm include medium duty Ductile iron covers	no.	2		
H	<u>RAIN WATER DRAINAGE</u>				
	<u>Supply and install the following UPVC pipes and caps, complete as shown on drawings, specified and directed by the Engineer:</u>				
H.1	Rain water UPVC pipe of the following sizes:				
H.1.1	DN 100 mm diameter UPVC rain water pipe.	LS	1		
H.1.2	DN 50 mm diameter UPVC rain water pipe.	LS	1		
H.2	UPVC Roof Rain Caps (RRC) of the following size:				
H.2.1	DN 50 mm UPVC RRC.	no.	11		
I	<u>SUNDRY WORKS</u>				
I.1	Provide supports for all sewer drainage equipment and pipes including fixings, anchors, insulating blocks and any anti-vibration devices.	LS	1		
I.2	Provide plates, discs, labels, charts and colour coding as applicable for all sewer drainage equipment and pipes indicated above.	LS	1		
TOTAL CARRIED TO GRAND SUMMARY					