

SECTION 5
Bill of Quantities

**THE PROJECT FOR REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO
AREA**

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PREAMBLE TO BILL OF QUANTITIES

1. General

The Contractor's attention is specifically directed to the Conditions of Contract, the Special Conditions and Technical Specifications, the Description of Works, and the Drawings which are to be read in conjunction with the Bill of Quantities and the Preamble.

2. Application of Preamble to Subsequent Work

The relevant clause of this Preamble shall be deemed to apply equally to work subsequently ordered for execution by the Contractor, either under Provisional Sum Orders or Variation Orders, except where specifically varied therein.

3. Method of Measurement

The Works as executed will be measured for payment in accordance with the method adopted in the Bill of Quantities and under the item as therein set forth. The contractor's rate should include for the complete execution of the works, as depicted in drawings and as specified in Technical Specifications. Measurement rules, definition rules and additional description rules shall apply where appropriate with the "Civil Engineering Standard Method of Measurement" (1974 Edition), and any subsequent edition thereto published by the Institution of Civil Engineers, and Standard Method of Measurements for Building Works 6th Edition (SMM6)" subject to specific changes for this contract.

The net measurement or weight of the finished work in place will always be taken, and except where otherwise stated or where separate items are provided, no allowance will be made for cutting, waste, laps, circular work, etc., and no deductions will be made for grout nicks, joggle holes, rounded arises or for sinkages for fitting ironwork and the like.

Payment will be made for only those materials, which are installed in the permanent works and taken over to the stocks as specified in the Technical Specification to the approval of the Engineer. Construction materials supplied and delivered to the site by the Contractor which become surplus to the above requirements shall become the property of the Contractor who shall reimburse the Employer any money that was paid to the Contractor for the supply and delivery to the site of the surplus materials.

4. Units and Extension of Bill of Quantities

All sizes and quantities have been entered in the Bill of Quantities in Metric Units, Figures involving decimals, including sums of money are written in the British tradition, namely, with a full stop in the decimal position and commas between each successive group of three digits to the left of the decimal position.

The format of the Bill of Quantities is such that it allows the Bidder to insert rates both local currency (Sri Lanka Rupees) and Foreign Currency (Japanese Yen ¥) components for each item. For specific items of imported goods, further columns are provided for the Contractor to insert the rate (in Sri Lankan Rupees) payable on each item for customs duty, cess, GST, National Security Levy, Surcharge, excise duty etc. The total of local currency together with the foreign currency components for each item (including the rate for customs duty etc. where relevant) will be the contractor's contract rate for the item.

5. Rates and Sums to be for Work Complete

Notwithstanding any limits which may be implied by the wording of the individual items and /or explanation in this preamble it is to be clearly understood by the Contractor that the rates and sums which he enters in the Bill of Quantities shall be for the work finished complete in every respect, he shall be deemed to have taken full account of all requirements and obligations, whether expressed or implied, covered by all parts of this Contract, and to have priced the items herein accordingly. The rates and sum must therefore include for all incidental and contingent expenses and risks of every kind necessary to construct, complete and maintain the whole of works in accordance with the Contract. Full allowance shall be made in the rates and/or sums inter alia, which are referred to and/or specified herein.

- (1) All site investigations which may be necessary;
- (2) All setting out and survey work;
- (3) Temporary fencing, watching, and lighting;
- (4) Paying fees and giving notice to authorities;
- (5) Payment of all patent rights and royalties;
- (6) Reinstatement of the site;
- (7) Safety precautions and all measures to prevent and suppress fire and other hazards;
- (8) Interference to the works by persons, vehicles, vessels and the like using the existing land and water facilities;
- (9) Full maintenance of access to the existing roads and waterways during the period of construction;
- (10) Works in connection with the protection and safety of adjacent structures.
- (11) Supplying, maintaining and removing on completion Contractor's own accommodation, offices, stores, workshops, transport, welfare services and all charge in connection therewith.
- (12) Working in the dry except where otherwise permitted by the specification;
- (13) Maintaining public roads and footpaths and maintaining access upon existing roads or recognized routes.
- (14) The supply, inspection, sampling and testing of materials and of the Works under construction, including the provision and use of equipment.
- (15) Except where separate items are provided for bringing plant to the site and removing on completion, for providing transporting to site, setting to work operating (including all fuel and consumable stores), maintaining and removing from the site upon completion all construction plant and equipment necessary for the execution of the work, including the cost of all tests and other requirements in respect to such plant and equipment;
- (16) The recruitment, bringing to and from the site, accommodating and feeding and all incidental costs and expenses involved in the provision of all necessary skilled and unskilled labour and supervision;
- (17) For supporting faces of excavation temporary or permanent shoring, shuttering & scaffolding etc.
- (18) Dewatering if required.

No claim will be considered for further payment in respect of any work or method of execution, which may be described in the Contract or is inherent in the construction of the work and detailed on the drawings on account of;

- (1) items have been omitted from the Bill of Quantities, but depicted in the drawings.
- (2) any omission from the wording of the items or from a clause in the Preamble or
- (3) no mention of such work or method of execution having been in the Preamble

Items against which no rates or sum is entered by the Contractor, whether quantities are stated or not, will not be paid for when executed, but will be regarded as covered by other rates in the Bill of Quantities.

The quantities set out in the Bill of Quantities are the estimated quantities of the work and they shall not be taken as the actual and correct quantities of the works to be executed by the contractor in fulfillment of his obligation under the contract.

The Contractor shall be deemed to have taken into account all of the following in his Tender prices and his construction programmes.

- (1) All recognized holidays, festivals, religious and other customs.
- (2) Any stoppage of work or delays due to adverse weather conditions.

6. Rates and Sums to Bear Proper Relation to Work Described

The rates and sums entered by the Contractor against all items in the Bill of Quantities must bear a proper relationship to the cost of carrying out the work described in the Contract; all on costs and similar charges which are applicable to the Contract as a whole are to be spread over all the rates in the Bill of Quantities, whilst those which are applicable only to particular sections of the Contract are only to be spread over items to which these sections refer.

7. Provisional Sum Items

Provisional sums will be dealt with as provided for in the Conditions of Contract.

Provisional Sums are represented by the words 'Provisional Sum' entered under the description.

Provisional Sum items are followed by an item where the Contractor shall indicate all his financial and administrative costs including cost of liaison with external agencies, profits, overheads and any other costs for the "provisional sum" item as a percentage. This percentage will be the basis of assessing the actual amount payable to the Contractor.

8. Provisional Quantity Items

Certain items in the Bill of Quantities are designated "Provisional Quantity" in the description column to indicate that the quantities for the work covered by such items are the best possible estimates that can be made in advance of the execution of the work, or that the provision of such facilities as are described in the items may not in the event be required under the contract. All items so designated will be used only at the direction and discretion of the Engineer, and if not used either wholly or in part shall, as to the amount not used, be deducted from the Contract Price. Where such items consist of a sum, the Contractor shall enter a lump sum which, shall be the price for the work if executed, as distinct from a 'Provisional Sum' as defined herein. No claim

will be entertained in respect of overhead charges or any other costs which may allegedly result from the omission of all or part of the work covered by such "Provisional Quantity" Items.

9. Payment of Items in a Monthly Basis

Payment under items which are measured on a monthly basis will not be commenced until the full facilities described in the items and the specification have been provided to the satisfaction of the Engineer. Payment will continue until such time as the Engineer shall signify that facilities are no longer required.

10. Payment of Lump Sums for General Items

Lump Sum items stipulated in Bill No. G-1 and where the Tenderer includes additional items for complying with the general conditions etc., will be paid on the basis of a proportion of respective lump sum in the same ratio as the value of the work completed bears to the total value of the Contract.

Lump sum items stipulated in Bill No. G-1 which are related to a specific work (e.g. Items G1.15, 16) will be paid on the basis of the proportion of actual work done to the total work of that specific item as assessed by the Engineer.

Items with quantities and units will be paid against number of units used and/or incorporated in the works.

11. Offices, Field Laboratory and Equipment for Engineer's Representative

(1) Provision

The sums entered to cover the cost of the Engineer's field offices is to include erection, at a location approved by the Engineer, and subsequent removal on termination of the works. If these offices cannot be located on the site, Contractor has to find an alternative suitable land at contractors own cost. This is to include for provision of all the items specified and also for the supply of electricity, water supply, telephone connection and other facilities for the duration of the Contract.

(2) Maintenance

The sums entered to cover the maintenance of above facilities is to include the payment for provision of electricity, gas, water, telephone (except for the amounts charged against international calls), sweeping, cleaning and security services etc.

(3) Provide and Maintenance

The sums entered shall cover (1) & (2) above.

12. Assistance to the Engineer

The sum entered to cover the cost of the assistance to the Engineer shall include for the labour, materials and equipment specified.

13. Protection of Completed Work and Clearing upon Completion

The Contractor shall allow in his rates for protecting completed work from subsequent operations making good all damage to complete work, for clearing away all rubbish as it accumulates, and leaving the site in a tidy condition to the satisfaction of the Engineer.

14. Earthworks

(1) Excavation in all Material except Rock

The rates and prices for excavations including dredging shall be for all types of ground encountered except rock including ground conditions above or below water level. The Contractor must make the allowance for the possibility of permission not being granted to the use of explosives for blasting and other operations.

- (a) For structures, volume of material excavated as the product of the horizontal area of the base of permanent work to be contracted and the mean depth below ground level, or measured as the volume to be occupied by permanent work below ground level, whichever is the greater.

In no case shall any of the following quantities be included in the measurement for payment.

- (1) Quantity outside the vertical planes of neat outline of foundation structures unless shown otherwise on the drawings.
 - (2) Quantity of excavation and/or backfill for pipeline, storm sewers and under drains except as allowed for in pipeline construction as specified in pipe work, valves and fittings laying & installation.
 - (3) Quantity of any excavations performed prior to the taking of measurements of the undisturbed natural ground.
 - (4) Quantity of any material rehandled, except where the drawings indicate or the Engineer directs the excavation after embankment has been placed.
 - (5) Quantity of any excavation outside of cofferdams.
 - (6) Quantity of excavation required due to the swelling of the foundation when driving piles.
 - (7) Removal of slides, cave-ins, silting or filling due to the action of the elements or whether and/or carelessness of the Contractor.
- (b) For unsuitable material, volume of excavated material shall be measured as volume of material directed to be removed by the Engineer.
- (c) For trenches for pipeline etc. are described elsewhere in this Preamble.

No allowance is made for any bulking or for any extra transport required due to bulking. The rates shall include, but not by way of limitation, for:

- (1) Excavation to the correct depth and preserving the bottoms of excavations in a state suitable for the reception of concrete, pipes or pipe bedding, and no payment will be made for any concrete or pipe bedding required for filling over-excavated volumes or disturbed areas to the net dimensions as indicated on the Drawings.
- (2) Any additional excavation required for shuttering, working space, temporary or permanent shoring, and subsequent refilling and ramming and disposal of surplus.
- (3) Provision of storage areas for the temporary storage of any material required for backfilling which cannot be stored alongside the excavation for any reason,

together with the cost of transporting, loading including disposal of surplus and unloading such material and all other charges incurred in this respect.

- (4) Trimming the bottoms of excavations including bottoming to falls, and trimming to sloping surfaces where required or indicated on the Drawings.
 - (5) Taking all precautions by supporting faces of excavation to ensure the safety of the workmen and to prevent damage to adjacent walls, building and all other structures and services and to prevent damage to road and other surfaces by slip or breaking away of trench sides or other cause, including permanent and/or temporary shoring of trenches.
 - (6) Keeping the site and trenches and all other excavations free from water from whatever cause arising.
 - (7) For clearing any scrub or other vegetable growth including all trees and for disposing of the whole of the cleared material to top provided by the Contractor.
 - (8) All temporary and permanent measures required to protect and support all existing pipes, cables and services, including all chambers, gullies and foundations thereto, or repair or replace them should they become damaged due to the Contractor's activities.
 - (9) All barriers, lighting, warning signs and any other measures necessary to ensure complete safety around the area of the works.
 - (10) Reinstatement except where separate items are included.
- (2) **Excavation in Rock**
Excavation in rock which, shall in all cases be measured extra over measurement under 1(a), 1(b) or 1(c) above by volume from the level at which rock is encountered. For work described under 1(a) and 1(b), measurement shall be as specified therein. For work under 1(c) the volume measured shall be to the maximum bottom width of trench permitted under the Specification or actual width, whichever is less, and to the depth authorised.
- (3) **Fill**
Fill shall be measured as the net volume above ground level of the permanent earthwork to the dimensions shown on the Drawings or directed by the Engineer, irrespective of source of material. The rate shall include for selection, handling, placing, and compaction of excavated or imported material.
- (4) **Backfill**
Backfill shall be measured (where items provided in BOQ) as the net difference between the volume measured under 1(a) above and the volume of permanent work below ground level. The rate shall include for selection, handling placing and compaction of excavated or imported material.

15. **Concrete**

Concrete using major construction shall be ready-mix concrete, and subject to Engineers approval. Contractors ready-mix concrete suppliers together with relevant cement & steel price lists shall be provided as per Clause 70 of Particular Conditions of Contract.

The rates for concrete are to include for:

- (1) All costs incurred in determining the mixes to satisfy the Specification (including any admixtures)
- (2) supplying all material (including any admixtures), storing, mixing, transporting, placing and compaction (whether by hand or vibration).
- (3) Excavation as required below previously filled levels and backfilling (except where separate items are provided).
- (4) Roughening the surface of previously executed work as required in order to provide the necessary bond with new concrete.
- (5) Achieving specified tolerance.
- (6) Forming sloping, falls and the like.
- (7) Forming holes or boxing out for pipes, bolts, frames for covers and other steel work.
- (8) Building in cable conduit, pipes, junction boxes etc.
- (9) Forming 25mm chamfers on all external arises to exposed concrete.
- (10) Forming all construction joints, keys, stop ends, temporary stops and shuttering of other than permanently exposed faces (except where separate items are provided).
- (11) Providing all shuttering/ form work required.
- (12) Curing the concrete and all measures to protect freshly poured concrete from direct sunlight and wave action.
- (13) Trawling, rubbing down etc. and making good the concrete surfaces to provide the specified finishes.
- (14) The cost of control testing throughout the period of concreting and for the testing of concrete and remedial work ordered by the Engineer consequent to the results of control tests falling below the minimum specified.
- (15) Overtime working to maintain continuity of casting.
- (16) A daily return to the Engineer showing the quantities of cement and the number of mixing of each class of concrete used in each section of the works and temporary works.
- (17) Leakage Testing of Concrete structures including provision of Water for Testing structures.
- (18) Cleaning & disinfecting of concrete structures including provision of water & chemicals required for the operation.

The measurement of concrete shall be by cubic metre, square metre or linear metre of completed structure. Where volumetric measure is used, no deductions will be made for channels recesses, or rebates less than 600mm girth, for splays or chamfers less than 300mm measured on the splay nor for holes or ducts formed in the concrete less than 1 m girth. Fillets less than 300 mm on the splay will be measured.

16. Shuttering/Form work

No separate measurement will be made for shuttering/form work unless otherwise stated in the item description that the cost of shuttering/form work to be paid separately.

17. Steel Reinforcement

The rates for steel bar and steel fabric reinforcement shall include for supplying, transporting, storing, cleaning, cutting bending, all labours in working, distribution to the various parts of the works, fixing in position and supporting and for the use of binding wire and for welding where indicated.

The unit of measurement for steel reinforcement is the Metric Tonne (mt - 1000 kg.) and the weight of steel has been calculated net with no allowance made for wastage or laps and the cost of these will be deemed to be covered in the rates.

The weight of steel supports, spacer bars and ties, but including stirrups and binders, used to locate and hold the reinforcement in place is not included in the quantity and the cost of these will be deemed to be covered in the rates.

18. Site Clearance

Rates for site clearance shall include for the removal and all trees, shrubs, boulders or other debris from the area of the site and disposal of same in an approved location, spreading at least 100 mm of topsoil over the site upon completion.

19. Piling

Driven piles shall be measured net as length of pile supplied and driven measured from pile toe to pile cap soffit. Rates for piles shall include but not be limited to the costs of provision of all materials labour plant and tools needed to manufacture transport store, pitch, drive, cut off surplus, strip pile head, apply load test to one pile at each site and provide and effect all other incidentals necessary for the complete installation of piles.

The Contractor shall allow in his rates the cost of ascertaining the subsoil conditions at the various sites and for his detailed calculations and method statement to the Engineer for approval.

Cast in situ piles shall be measured net as length of pile measured from pile toe to pile cap soffit. Rate of piles shall include, but not limited to the cost of excavation and boring, casings, linings, dewatering, use of any drilling mud, provision of all material (excluding reinforcements), labour, plant and tools needed for the whole work, cost of any remedial work, cost of all other incidentals necessary for the complete installation of piles to the approval of the Engineer. Reinforcements will be paid separately.

The rate for testing of piles shall include the cost of all plants, equipment, tools and labour to carry out the load tests to the approval of the Engineer.

20. Pipework Valves and Fittings - Supply and Delivery

The rates for supply of pipe work, valves and ancillary fittings shall include but not be limited to:

- (1) All costs of design, royalties and drawings and related data
- (2) All costs arising out of inspection and testing at manufactures works before dispatch.
- (3) All minor fittings, bolts, nuts, gaskets, washers, fixings, etc. joining rings and lubricant, and other items not specifically listed but necessary for the proper installation of the pipe work.

- (4) All cost petrolatum - based or plastic backed type cold applied tapes and compatible mastic & primer for protection of all joints, containing fuel components from corrosion.
- (5) All maintenance materials to be supplied to the Employer as per the specifications.
- (6) All costs of packaging and protection for export overseas and storage
- (7) All costs of freight and insurance and related documentation for shipment to Sri Lanka.
- (8) All costs of Custom Duty, Cess, GST, National Security Levy, Surcharge and excise duty etc.
- (9) All costs of loading at the port, road transport offloading, stacking and storage in temporary sheds or weather proof sheds etc. as required at site.

21. Pipework Valves and Fittings - laying and installation

The items provided for pipeline laying & installation in the Bill of Quantities shall cover all the things necessary to excavate and reinstate all trial pits required or as directed by the Engineer including the obtaining of permission from the Road Authorities for the making of the trial holes, and to provide, install or lay and test the complete pipeline without limitation including storing transporting, handling, site clearance, excavation (other than rock excavation), dewatering, bedding, laying, cutting, jointing, incorporation of all required pipe specials and fittings, connections to existing mains, painting where specified, backfilling compacting and testing thereof (other than with granular fill or concrete) protection, security, removal and proper disposal of surplus excavated material all as specified. temporary and permanent, support blocks to pipes and all other things necessary for pipeline installation not measured separately under other items in the Bill of Quantities.

- (a) Pipes - The Quantities for laying of pipes shall be measured by effective length of pipeline along its centre line without deduction for pipes & specials and fittings and separately according to type, diameter and given depth ranges. The laying length of the first depth range includes the laying length of the next depth range.(Depth means ground level to invert level of pipes)
- (b) Pipe Specials and Fittings - Laying of Pipe Specials and Fittings shall be measured as the number of each item installed in accordance with the Drawings and the Engineer's instructions but separately according to type and diameter. The installation rates shall be extra over the laying of pipes, and shall include but in any way not limited to installation. Rate also shall be include for concrete thrust block for distribution systems as shown in drawings, protection joint and for testing. Thrust blocks and piling for transmission main shall be measured separately. Concrete (mass concrete, reinforced concrete) for thrust blocks and piling for transmission main shall be measured separately.
- (c) Yard Piping including Embedded Pipework in Structures - All pipeworks specials and fittings shall be measured by number according to type and size and rate shall include but not limiting for gaskets and other jointing materials, pipe supports and brackets.

Where in Bill of Quantities Items described as plain ended pipe piece, the pipe piece end shall be spigot type for joining with socket end pipes or specials.

Contractor shall not order any pipes, specials and fittings without the prior approval of the shop drawings by the Engineer.

- (d) Section Valves - Rates and prices for the installation of section valves shall be measured as the number of each item installed in accordance with the drawing and shall include for extended spindles, hand wheels, key heads and head stocks surface box assembly with the protection pipe, valve chambers including manhole covers as depicted in drawings or specified in the Specification, and for all necessary spindle guide brackets and for head stock support brackets or steel support members as appropriate, all fixings and painting.
- (e) Part of the number of the valves indicated in the BOQQ for installation within CMC areas will be supplied by National Water Supply & Drainage Board.
- (f) Washout Valves - Rates and prices for installation of washouts shall include for extended spindles, key heads, head stocks, etc., as required and also all the fittings including surface box assembly with PVC protection pipe, and pipes (length not exceeding 6.0m) within the limit of installation as shown in the drawing, including the overflow chamber, head wall, drain as relevant.

If the length of pipes within the limit of installation measured along the centre line of pipe exceeds 6.0 m, the extra length of pipe shall be measured separately.

- (g) Air Valves - Rates and prices for installation shall include installation valves, fittings beyond the Tee or clamp saddle of the main pipe line if it is an installation with the TEE (or including tapping and fixing the clamp saddle if it is an installation with tapping) and including the chamber complete, with chamber cover.
- (h) Waste Meters - Rates and prices for installation shall include installation of all associated fittings and the chamber complete with cover and support blocks, as shown in drawings. (Waste meter will be installed by NWS&DB)
- (i) Fire Hydrants- Rates and prices for installation shall include for all the fittings, beyond the Tee of the main pipeline, valves, surface boxes, chambers within the limit of installation and pipes (length not exceeding 5.0m measured along the centre line)

If the length of pipes within the limit of installation measured along the centre line exceeds 5.0 m, the extra length of pipe shall be measured separately.

- (j) Valve Chambers and Surface Boxes - Chambers and surface boxes will not be measured separately but shall be included with the installation of valve or special. Thus, rate for valve or special shall include for all Contractor's obligations necessary to complete the chambers in accordance with the Drawings including, but not limited to, excavation, concreting, brickwork, associated pipe work manhole covers, drain pipes etc.

If the depth of Butterfly Valve Chambers exceed those minimum depth specified in the drawings. Exceeding depths measured separately.

- (k) Culvert Crossings - Rates and prices for culvert crossings shall be extra over the laying of pipes and shall include installation of all necessary fittings and specials within the limit of installation, as depicted in the drawings measured by number according to type and diameter of pipe. Rate shall include for all construction difficulties, all extra excavation, temporary diversion of water, pumping, stringing & handling pipes any supports that may required making good of any damage to the existing structures, road or embankment and all other works necessary to complete the crossing.
- (l) River Crossings & Stream Crossings - Rates for laying and fixing the pipes at river crossings shall include the cost of all required ancillary materials, installation of air-

valves, isolating valves and protection boxes (where specified in BOQ) cost of welding, supplying and fixing of U bolts, nuts, rubber pads, testing of welds, application of anti-corrosive and protective paints and also any temporary works, coffer damming scaffoldings, use of any equipment, making good of any damages to the approval of the Engineer, and any payments to the relevant authorities with regard to the river crossing.

- (m) Railway Crossings - Items are provided in the Bill of Quantities to cover all the Contractor's obligation to complete railway crossings in accordance with the drawings of the Railway Authority. These include, but not limited to supply of steel pipes, R.C. hume pipes, all jointing materials, excavation & laying of the hume pipes and installation of steel pipe inside the hume pipe. Contractor should provide all plants & equipment required for the work.
- (n) Rock excavation - Rock excavation shall be measured as described elsewhere in the preamble. The excavation in all other materials shall not be measured separately but shall be deemed to be included in the unit rates of other relevant items.
- (o) Special bedding types - The special bedding types shall be measured in length of pipe trench but separately according to diameter of pipe as depicted in the drawing.

The rates shall include for the removal of unsuitable materials from trench bottom and disposal of such materials off the site. The supply and laying of granular material as specified in drawing and geo-textile where relevant and preparation of bedding as required.

The Contractor shall lay the geo-textile material along the two vertical sides and the bottom of the trench in one piece and no lapping shall be allowed. However, overlaps of 500 mm shall be allowed at joints.

- (p) Concrete encasement to Pipes - Grade 15 concrete encasements to pipes shall be measured in effective length.
- (q) Temporary Reinstatement - The rate for temporary reinstatement shall include all the contractor's obligations in accordance with the specification. The measurement shall be in square metres based on length of pipeline and maximum trench width permitted under the specification or actual trench width, whichever is less.
- (r) Permanent Reinstatement of road surfacing - Provisional sums are provided in the BOQ. The estimated costs agreed by the Engineer with the Roads Authority will be paid by the contractor to the Road Authority and the Contractor will be reimbursed from Provisional Sums.

The estimated costs are based on the maximum trench widths specified elsewhere, and the type of road surface to be repaired. Upon completion of the work the reinstatement cost will be recalculated by Road Authority following joint re-measurement and any excess expenditure over the advance payment due to exceeding the maximum pipeline trench widths or due to consequential damage to road surface arising from the Contractor's work in the roads shall be borne by the Contractor.

For reimbursement of actual amounts due to the Contractor shall produce all measurement certificates and payment receipts from the Road Authorities.

In the case of CMC roads only, the contractor has to carry out the permanent reinstatement of roads

Excavating and Reinstatement of Railway Track - The Sri Lanka Railway will remove & refix subsequently the railway sleepers and will be reinstate the railway track. The costs agreed by the Engineer with the Sri Lanka Railway will be paid by the Contractor to the Railway Authority and the Contractor will reimburse from Provisional Sums provided in the BOQ.

- (s) Pressure and Leakage disinfection and Cleaning - Rates for pressure and leakage test and disinfection and cleaning shall cover costs of all materials including water, labour, tools and equipment and incidentals necessary to complete the required work, disconnecting and reconnecting any pipes and specials, any excavation and backfilling involved.

The measurement shall be by length according to the type and diameter of the pipe, and shall be along the centre of the pipe including all the bends, valves, fittings and appurtenances.

The amount for these items will only become payable when the Engineer approves the successful results.

- (t) Bowser Supply Points - Rates and prices shall include all installations within the limit of installation shown in drawing, including the meter chamber and cover, concrete work, welding work and painting.

22. Timber

The rates for timber shall include for all handling, labour and waste, for all chamfers and nosing and for protective treatment except where otherwise provided. The rates for timber for permanent works are to allow for the use of new properly seasoned timber.

23. Floor Finishes

The rate and prices for floor finishes shall include for laying in panels, supply and use of joint materials, all up-stands and skirting including laying on vertical and horizontal surfaces etc.

24. Painting and Protective Coatings

The rate for painting and protective coatings, whether measured separately or included in other items are to include for all temporary staging ladders and the like, covering the adjacent works to prevent splashing providing adequate protection to the work being painted or coated against dust, spray and other foreign matter, for all preparation and priming, carrying out the work in materials and colours to the requirements of the Engineer, curling in edges, washing off stains, and leaving the whole of the work perfect on completion. The rates for painting are to allow the applying of the final coat of paint immediately prior to handing over any section of the work.

25. Brickwork

The basis of measurement for brickwork walls shall be the overall area of the walls measured in plane elevation, no allowance being made for setbacks recesses and nibs. Rates for brickwork shall include for bricks of the thickness stated bounded in cement mortar.

26. Handrailing

Rates and prices for handrailing shall be for handrail materials and forged standards as specified including all bends, removable sections, wall hooks, fixing and painting.

27. Rainwater Outlets

Rates for rainwater down pipes and gutters shall include for all fixings, brackets, holderbats, etc., all bends, swan necks, rainwater shoes, rodding eyes and other fittings complete.

28. Sanitary Installations

Rates for sanitary installations shall include for all sanitary fittings for all necessary associated plumbing complete with cold water pipework from a point adjacent to the building being served, waste pipework to an adjacent solid pipe or gully, and all necessary taps, valves, plugs, ventilators, storage tanks, etc., all fixed in position complete and tested to the approval of the Engineer.

29. Doors and Windows

Rates and prices for doors and windows shall include for thresholds, tiled, masonry, rendered or plastered sills and reveals, frames, surrounds, glass, iron-mongering, and building into brickwork or concrete.

30. Tiling

The rates and prices for tiling shall include for screed and bedding on floors, approved tile adhesive on walls, expansion joints, and all cutting and finishing at openings including round edged tiles where specified. Skirting shall in addition include for bedding, expansion joints, cutting and all angles and corners.

31. Existing Services and Structures

The Contractor's attention is specifically drawn to Connections to and protecting of existing services and installations. The Contractor shall be deemed to have included in his rates and prices for complying with all such requirements.

32. Blinding Concrete

Rates for blinding concrete shall include for all additional excavation and disposal of surplus, necessary sawn shuttering where indicated on the Drawings or directed by the Engineer's Representative.

33. Cables Laid in Trenches

Rates for cables laid in trenches shall include but not by way limitation for laying the cables and supplying and laying indicator tapes both within the backfill material, attendance on the Specialist Contractor during testing, and any repairs and retesting necessary, all as specified.

34. Steel Flooring

Rates and prices for open steel flooring, steel checker plate flooring and steel chamber covers shall include for all curbing, all necessary steel support members and all trimmed cutouts for valves, keys, pipe work, etc., together with the forming of all rebates in concrete, the grouting in and fixing of curbing to same and painting.

35. Amendments to Designs

Where amendments are required to the civil designs due to electrical or mechanical equipment offered not being in accordance with the general dimensions indicated on the Drawings then payment shall be made at tender rates against the net quantities of work executed in accordance with the amended designs produced by the Contractor and approved by the Engineer.

36. Access Facilities for other Contractors

The Contractor shall provide adequate facilities and working and storage areas for other Contractors executing works for the Authority and the tender rates and prices shall include for these provisions.

37A. Marker Posts

Rates for erection of marker posts shall include but not by way of limitation for all excavation, refilling, ramming, disposing of surplus, concrete, shuttering, reinforcement, making good ground surface, information plates and fixing and painting.

37B. Boundary Post

Rates for erection of boundary post shall include but not by way of limitation for all excavation, refilling, ramming, disposing of surplus, concrete, shuttering, reinforcement, making good ground surface, engraving letters "NWS&DB and Logo" and painting.

38. Connections to Existing Pipe work.

Rates and prices for connecting to or capping off existing pipe work shall include but not by way of limitation for;

- (1) All work as defined in Clauses 14 and 20 of this preamble;
- (2) Co-ordinating the work with the Employer as specified;
- (3) Any work necessary outside normal working hours or days;
- (4) Ascertaining the precise outside diameters of existing pipes prior to placing orders for couplings etc.
- (5) Arranging for the location, isolating and drainage of the existing main; and
- (6) Re-commissioning.

39. Fences, Gates and Boundary Walls

Rates for boundary walls, fences and gates shall include but not by way of limitation for excavation, refilling and ramming, disposal of surplus, materials for construction of fences, boundary walls and gates, all painting and supplying a padlock with 2 keys for each gate or pair of gates.

40. Installation of Electro- Mechanical Equipment and Materials

The rates for installation of Electrical and Mechanical equipment and materials shall include but not limited to :

Delivery to site from Contractor's stores

Erection including all fixing to complete work

Erection of all associated pipe work, fittings, valves etc. complete

All cabling, cable termination, conduits, cable trays and associated support cable tiles and marker tape and in addition all minor fittings, bolts, nuts, fixings, wiring, conduits etc., not specifically shown but essential for the proper installation and operation of the system.

All cost of testing, commissioning of the system and equipment

Maintaining the system in accordance with the Contract

41 Installation of Pumps

Depending on the actual dimensions of the pumps to be supplied, the Contractor shall fabricate the necessary pipe fittings to the required specifications in order to connect the pumps to the pipe work.

Dimensions given in the Drawings should not be considered as the final and it may vary depending on the manufacturer's standards.

Contractor shall submit the working Drawings to the Engineer for approval prior to commencement of work.

Rates quoted for mechanical installation shall include but not limited to the supply, installation and fixing, connection and testing of all items shown on the Drawings or as specified.

All minor fittings such as bolts, nuts, gaskets, brackets and supports etc., not specifically shown but essential for the pump installation and operation of the system shall be included in the rates quoted by the Bidder.

42 Reinforcement Mains in CMC area

The longitudinal sections shown in drawings for reinforcements in large, medium and small diameter pipes in CMC area should be considered for guidance only. The actual lines and levels of the existing pipe lines should be verified at site and shop drawings of the proposed pipe line shall be furnished including actual ground profile and invert levels of the existing pipe line before actual construction work commences.

43. "As Built" Drawings and Maintenance Manuals

Rate shall include the provision of originals and copies of approved "As Built" drawings and manuals of operation and maintenance for valves, plant and equipment as specified in Clause 1.3.5 of Technical Specifications.

Payment under item G1.17 of BOQ shall be made as follows:

20% of BOQ item on submission of acceptable draft "As Built" Drawings

75% of BOQ item on submission of approved "As Built" Drawings.

44. Summaries

A summary of BOQ is provided after the relevant BOQ. The totals of each individual BOQ should be carried forward into Grand Summaries of relevant sub schedules and totaled. This sub schedule totals should be carried forward to the summary of relevant schedule. Total of these schedules should be carried forward to the Grand Summary.

The Contractor may allow a discount based on the Grand Total in the Grand Summary.

The Contractor's value of work is calculated by deducting this discount from the Grand Total.

45. Notes on Construction of Maligakanda Office Building**ITEM No. DESCRIPTION****EARTH WORKS**

- OB-4.1 Excavation in any material except rock requiring blasting in foundations up to 1.5m deep, part return fill, well rammed and consolidated to specifications. Rate to include for shoring if necessary and to cart away out of site, unsuitable and surplus material as directed.
- OB-4.2 Excavation in any material except rock requiring blasting in foundations below 1.5m deep; part return fill, well rammed and consolidated to specifications. Rate to include for shoring if necessary, and to cart away out of site, unsuitable and surplus material as directed
- OB-4.3 - 4.6 Approved hard earth filling in foundations in Stages 1, 2 and 3 and around building well watered, rammed and consolidated to required levels, in layers not exceeding 150 mm as per specification.
- OB-4.7 De-watering in foundations if necessary.
- OB-4.8 Anti-termite treatment to be given to surface of filling, top of foundations and existing ground surfaces covered by the building, to the approval of the Engineer.
- OB-4.9 Damp proof membrane (polythene) gauge 1000 with 150mm side and end laps as shown in drawings.

CONCRETE WORKS

- OB-4.10 - 4.11 Grade 15 (25 mm) Ready Mixed Screed Cement Concrete under columns, lift well and wall footings as per drawing.
- OB-4.12 12 mm wide, and 125 mm deep expansion joints, filled with bituminous layer and cement.
- OB-4.13 - 4.18 Reinforced Cement Concrete Grade 35 (20 mm) Ready Mixed in Columns, Wall foundations, Sub Columns, Lift well, Toilet Duct and Plinth Beams up to DPC Level as per drawing.
- OB-4.19 Reinforced Cement Concrete Grade 35 (20 mm) Ready Mixed in 125 mm thick Ground Floor slab, as per drawing.
- OB-4.20 - 4.21 Cement Concrete Grade 20 (20 mm) in front ramp & side ramp including excavation, and compacted back filling, as per detail drawing.
- OB-4.22 Flight of steps with platform as per detailed drawing.
- OB-4.23 - 4.26 Reinforced Cement Concrete Grade 25 (20 mm) Ready Mixed in Columns, Beams, 175mm thick first floor slab, & 125 mm thick hood in Toilet from D.P.C level to First Floor Level as per drawing.
- OB-4.27 - 4.35 Reinforced Cement Concrete Grade 20 (20 mm) in Stair Cases, Fascia, Up-stand

beams, Window Sill and Lintols from D.P.C. level to First Floor Level. Rate to include for formwork, and Reinforcements in lintols & windowsills only as per detail drawing.

- OB-4.36 - 4.39 Reinforced Cement Concrete Grade 25 (20 mm) Ready Mixed in Columns, Beams, 175mm thick floor slab, 125 mm thick hood from First Floor Level to Second Floor Level as per drawing.
- OB-4.40 - 4.46 Reinforced Cement Concrete Grade 20 (20 mm) in Staircases, Fascia, Windowsills, Flower Trough and Lintols from First Floor Level to Second Floor Level. Rate to include for formwork and Reinforcements in flower trough, lintols & windowsills only as per detailed drawing
- OB-4.47 Cement concrete Grade 20 (20 mm) in gargoyles as per detailed drawing.
- OB-4.48 600 X 600 mm (internal) roof light on ground floor hood, complete with fibre glass translucent cover as per detailed drawing.
- OB-4.49 - 4.52 Reinforced Cement Concrete Grade 25 (20 mm) Ready Mixed in Columns, Beams, 175mm thick floor slab, 125 mm thick hood from Second Floor Level to Third Floor Level as per detailed drawing.
- OB-4.53 - 4.58 Reinforced Cement Concrete Grade 20 (20 mm) in Staircases, Fascia, Windowsills and Lintols from Second Floor Level to Third Floor Level. Rate to include for formwork, and reinforcements in lintols & windowsills only as per detailed drawing
- OB-4.59 - 4.62 Reinforced Cement Concrete Grade 25 (20 mm) Ready Mixed in Columns, Beams, 175mm. thick floor slab, 200 mm thick slab from Third Floor Level as per detailed drawing.
- OB-4.63 Reinforced Cement Concrete Grade 25 (20 mm) in 125 mm thick machine room roof slab above third floor level as per detailed drawing.
- OB-4.64 - 4.68 Reinforced Cement Concrete Grade 20 (20 mm) in Staircases, Fascia, Windowsills and Lintols from above Third Floor Level. Rate to include for formwork, and reinforcements in lintols & windowsills only as per detail drawing.
- OB-4.69 Reinforced Cement Concrete Grade 20 (20 mm) in flight of steps as per detailed drawing.

FORMWORK

- OB-4.70 - 4.77 15mm Plywood Formwork smooth finish in foundations of Columns, Plinth Beams, Ramps and Steps & Walls up to DPC Level. The rate to include for dismantling.
- OB-4.78 - 4.85 15 mm Plywood Formwork smooth finish in Columns, sides and Soffits of Beams, Soffits and Edges of First Floor Slab, Fascia Boards, Staircases, etc., from DPC Level to First Floor Level. The rate to include for dismantling.
- OB-4.86 - 4.93 15mm Plywood Formwork smooth finish in Columns, Sides and Soffits of Beams, Soffits and Edges of Second Floor Slabs, Fascia Board & Staircases, etc., from First Floor Level to Second Floor Level. The rate to include for dismantling.
- OB-4.94 - 4.100 15mm Plywood Formwork smooth finish in Columns, Sides and Soffits of Beams, Soffit and edges of Third Floor Slabs, Fascia Board & Staircases, etc., from Second Floor Level to Third Floor Level. The rate to include for dismantling

OB-4.101 - 4.105 15mm Plywood Formwork smooth finish in Columns, Sides and Soffits of Beams, Soffits and Edges of Slabs & Staircases, etc., above Third Floor Level. The rate to include for dismantling.

REINFORCEMENTS

OB-4.106 – 4.111 Tor Steel rod reinforcements supplied fabricated and placed in position in Columns & Wall Footings, Plinth Beams, Toilet Ducts, etc., up to D.P.C. Level.

OB-4.112 Mild steel rod reinforcements supplied fabricated and placed in position in Columns & Ground Floor Slab up to D.P.C. Level.

OB-4.113 – 4.117 Tor Steel rod reinforcements supplied fabricated and placed in position in Columns, Beams, First Floor Slab, Hoods and Staircases from D.P.C. Level to First Floor Level.

OB-4.118 Mild steel rod reinforcements supplied, fabricated and placed in position in Columns from D.P.C. Level to First Floor Level.

OB-4.119 – 4.124 Tor Steel rod reinforcements supplied, fabricated and placed in position in Columns, Beams, Second Floor Slab, Hoods & Staircases from First Floor Level to Second Floor Level.

OB-4.125 Mild steel rod reinforcements supplied, fabricated and placed in position in Columns from First Floor Level to Second Floor Level.

OB-4.126 – 4.130 Tor Steel rod reinforcements supplied, fabricated and placed in position in Columns, Beams, Third Floor Slab, Hoods & Staircases from Second Floor Level to Third Floor Level.

OB-4.131 Mild steel rod reinforcements supplied fabricated and placed in position in Columns, Beams from Second Floor Level to Third Floor Level.

OB-4.132 – 4.135 Tor Steel rod reinforcements supplied, fabricated and placed in position in Columns, Beams, Roof Floor Slab, Hoods & Staircases above Third Floor Level.

OB-4.136 Mild steel rod reinforcements supplied fabricated and placed in position in Columns, & Beams above Third Floor Level.

MASONRY WORKS

OB-4.137 150mm to 225mm Rubble masonry in cement & sand mortar 1:5 mix in foundations.

OB-4.138 150mm to 225mm pointed rubble masonry in cement & sand mortar 1:5 mix from finished ground level to D.P.C. level.

OB-4.139 400 mm thick Brickwork in cement & sand mortar 1:5 mix from D.P.C Level to First Floor Level.

OB-4.140 225 mm thick Brickwork in cement & sand mortar 1:5 mix from D.P.C Level to First Floor Level.

OB-4.141 200 mm thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from D.P.C Level to First Floor Level.

- OB-4.142 150 mm thick 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from D.P.C Level to First Floor Level.
- OB-4.143 100 mm thick 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from D.P.C Level to First Floor Level.
- OB-4.144 225 mm thick Brickwork in cement & sand mortar 1:5 mix from First Floor Level to Second Floor Level.
- OB-4.145 200 mm thick Brickwork in cement & sand mortar 1:5 mix from First Floor Level to Second Floor Level.
- OB-4.146 150 mm. thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from First Floor Level to Second Floor Level.
- OB-4.147 100 mm thick 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from First Floor Level to Second Floor Level.
- OB-4.148 225 mm thick, Brickwork in cement & sand mortar 1:5 mix from Second Floor Level to Third Floor Level.
- OB-4.149 200 mm. thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from Second Floor Level to Third Floor Level.
- OB-4.150 150 mm thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from Second Floor Level to Third Floor Level.
- OB-4.151 100 mm thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix from Second Floor Level to Third Floor Level.
- OB-4.152 225 mm thick, Brickwork in cement & sand mortar 1:5 mix above Third Floor Level
- OB-4.153 200 mm. thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix above Third Floor Level.
- OB-4.154 150 mm thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix above Third Floor Level.
- OB-4.155 100 mm thick, 400 mm long and 200 mm high hollow cement blocks in cement and sand mortar 1:5 mix above Third Floor Level.

ALUMINIUM WORKS

Ground Floor

- OB-4.156 Door type D-1, 5100mm x 2650mm double sash, casement glazed, bronze anodised aluminium door with floor mounted door closure, mortice lock, door handle, fixed & openable glazed panels, neoprene and wool beading, including a door for disables with other fittings, fix complete as per detailed drawing.
- OB-4.157 Door type D-2, 1500mm x 2100mm double sash, casement fire proof glazed, bronze anodised aluminium door with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.158 Door type D-3, 900mm x 2100mm single sash, acrylic panel, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle, fix

complete as per detailed drawing.

- OB-4.159 Door type D-4, 900mm x 2100mm single hung, casement acrylic panelled & prostered glazed, bronze anodised aluminium profile with G.I core, with mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.160 Door type D-5, 800mm x 2100mm single hung, casement acrylic panelled, bronze anodised aluminium door with indicator bolt, door handle, complete as per detailed drawing.
- OB-4.161 Door type D-6, 1200mm x 2100mm single hung, casement fire proof glazed, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.162 Door type D-7, 900mm x 2100mm single hung, casement, acrylic panelled, bronze anodised aluminium door with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.163 Door type D-800 x 2100 mm single hung, bronze anodised aluminium door, G.I. profile 45 mm thick timber core fined complete with mortice lock as per detailed drawing.
- OB-4.164 Door type D- 9, 1200mm x 2100mm single hung, casement aluminium panelled, with 300mm x 300mm viewing panel and panic bolt, including neoprene and wool beading fix complete as per detailed drawing.
- OB-4.165 Door type D-10, 1500mm x 2100mm double hung, casement aluminium louvered, anodised aluminium door including door handle and mortice lock fix complete as per detailed drawing.
- OB-4.166 Door type FD, 1650mm x 2100mm double sash, G.I slide and folding door, including handle and lock fix complete as per detailed drawing.
- OB-4.167 Window type W-1, 4000mm x 1650mm glazed, bronze anodised aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.168 Window type W-2, 2667mm x 1650mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.169 Window type W-3 2000mm x 1650mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.170 Window type W-4, 450 x 1750 mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.171 Fanlight type F-1, 1400mm x 950mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.172 Fanlight type F-2, 450mm x 2650mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.173 Aluminium work partitions with bronze anodised aluminium frames with beadings fix complete as per detailed drawing.

First Floor

- OB-4.174 Door type D-2, 1500mm x 2100mm double sash, casement fire proof glazed, bronze anodised aluminium door with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.175 Door type D-3, 900mm x 2100mm single sash, acrylic panel, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.176 Door type D-4, 900mm x 2100mm single hung, casement acrylic panelled & prostered glazed, bronze anodised aluminium profile with G.I core, with mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.177 Door type D-5, 800mm x 2100mm single hung, casement acrylic panelled, bronze anodised aluminium door with indicator bolt, door handle, complete as per detailed drawing.
- OB-4.178 Door type D-6, 1200mm x 2100mm single hung, casement fire proof glazed, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.179 Door type D-7, 900mm x 2100mm single hung, casement, acrylic panelled, bronze anodised aluminium door with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.180 Door type D-8, 800mm x 2100mm single hung, bronze anodised aluminium door, G.I profile with 45mm thick timber core, fixed complete with mortice lock as per detailed drawing.
- OB-4.181 Door type D-9, 1200mm x 2100mm single hung, casement aluminium panelled, with 300mm x 300mm viewing panel and panic bolt, including neoprene and wool beading fix complete as per detailed drawing.
- OB-4.182 Door type D-10, 1500mm x 2100mm double hung, casement aluminium louvered, as per detailed drawing.
- OB-4.183 Window type W-1, 4000mm x 1650mm glazed, bronze anodised aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.184 Window type W-2, 2667mm x 1650mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.185 Window type W-3 2000mm x 1650mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.186 Window type W-4, 450mm x 1750mm glazed, bronze anodised aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.187 Window type W-5, 4000mm x 6450mm glazed, and aluminium louvers, bronze anodised aluminium window with neoprene and wool beading, fix complete between ground floor and second floor, as per detailed drawing.
- OB-4.188 Window type W-6, 4000mm x 6450mm glazed, and aluminium louvers, bronze anodised aluminium window with neoprene and wool beading, fix complete between ground floor and second floor, as per detailed drawing.

- OB-4.189 Window type W-7, 690mm x 1650mm glazed and aluminium anodised window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.190 Fanlight type F-1, 1400mm x 950mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.191 Fanlight type F-2, 450mm x 2650mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.192 Aluminium work partitions with bronze anodised aluminium frames with beadings fix complete as per detailed drawing.

Second Floor

- OB-4.193 Door type D-2, 1500mm x 2100mm double sash, casement fire proof glazed, bronze anodised aluminium door with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.194 Door type D-3, 900mm x 2100mm single sash, acrylic panel, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.195 Door type D-4, 900mm x 2100mm single hung, casement acrylic panelled & prostered glazed, bronze anodised aluminium profile with G.I core, with mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.196 Door type D-5, 800mm x 2100mm single hung, casement acrylic panelled, bronze anodised aluminium door with indicator bolt, door handle, complete as per detailed drawing.
- OB-4.197 Door type D-6, 1200mm x 2100mm single hung, casement fire proof glazed, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.198 Door type D-7, 900mm x 2100mm single hung, casement, acrylic panelled, bronze anodised aluminium door with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.199 Door type D-8, 800mm x 2100mm single hung, bronze anodised aluminium door, G.I profile with 45mm thick timber core, covered with 24 gauge G.I sheet on external side, fixed complete with mortice lock as per detailed drawing.
- OB-4.200 Door type D- 9, 1200mm x 2100mm single hung, casement aluminium panelled, with 300mm x 300mm viewing panel and panic bolt, including neoprene and wool beading fix complete as per detailed drawing.
- OB-4.201 Door type D-10, 1500mm x 2100mm double hung, casement aluminium louvered, anodised aluminium door including door handle and mortice lock fix complete as per detailed drawing.
- OB-4.202 Window type W-1, 4000mm x 1750mm glazed, bronze anodised aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.203 Window type W-2, 2660mm x 1750mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing

- OB-4.204 Window type W-3 2000mm x 1750mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.205 Window type W-4, 450mm x 1750 mm glazed, bronze anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.206 Window type W-7, 690mm x 1750mm glazed and aluminium anodised window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.207 Fanlight type F-1, 1300mm x 950mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.208 Fanlight type F-2, 600mm x 950mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.209 Aluminium work partitions with bronze anodised aluminium frames and acrylic panels with beadings fix complete as per detailed drawing.

Third Floor

- OB-4.210 Door type D-2, 1500mm x 2100mm double sash, casement fire proof glazed, bronze anodised aluminium door with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.211 Door type D-3, 900mm x 2100mm single sash, acrylic panel, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.212 Door type D-4, 900mm x 2100mm single hung, casement acrylic panelled & prostered glazed, bronze anodised aluminium profile with G.I core, with mortice lock, door handle, fix complete as per detailed drawing.
- OB-4.213 Door type D-5, 800mm x 2100mm single hung, casement acrylic panelled, bronze anodised aluminium door with indicator bolt, door handle, complete as per detailed drawing.
- OB-4.214 Door type D-6, 1200mm x 2100mm single hung, casement fire proof glazed, bronze anodised aluminium profile with G.I core, with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.215 Door type D-7, 900mm x 2100mm single hung, casement, acrylic panelled, bronze anodised aluminium door with door closure, mortice lock, door handle complete as per detailed drawing.
- OB-4.216 Door type D-8, 800mm x 2100mm single hung, bronze anodised aluminium door, G.I profile with 45mm thick timber core, covered with 24 gauge G.I sheet on external side, fixed complete with mortice lock as per detailed drawing.
- OB-4.217 Door type D-9, 1200mm x 2100mm single hung, casement aluminium panelled, with 300mm x 300mm viewing panel and panic bolt, including neoprene and wool beading fix complete as per detailed drawing.
- OB-4.218 Door type D-10, 1500mm x 2100mm double hung, casement aluminium louvered, anodised aluminium door including door handle and mortice lock fix complete as per detailed drawing.

- OB-4.219 Window type W-1, 4000mm x 1650mm glazed, bronze anodised aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.220 Window type W-1a, 4000mm x 1650mm and 1332mm x 1000mm glazed, bronze anodised aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.221 Window type W-3, 2000mm x 1650mm, glazed and anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.222 Window type W-4, 450mm x 1750mm glazed and anodized aluminium window with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.223 Window type W-7, 690mm x 1650mm glazed and anodized aluminium window with neoprene and wool beading, complete as per detailed drawing.
- OB-4.224 Fanlight type F-1, 1400mm x 950mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing
- OB-4.225 Fanlight type F-2, 450mm x 2650mm glazed bronze anodised aluminium fanlight with neoprene and wool beading, fix complete as per detailed drawing.
- OB-4.226 Aluminium work partitions with bronze anodised aluminium frames with beadings fix complete as per detailed drawing.

ROOFING & ROOF PLUMBING

- OB-4.227 Supply and fix complete, 0.47 mm thick long span, colour bonded zinc aluminium roof including all accessories according to manufacture's specification and as per detailed drawing
- OB-4.228 25 mm thick insulation with aluminium foil both side and glass wool, supported on wire mesh with plastic coating, fix complete as per detailed drawing.
- OB-4.229 Supply and fix zinc aluminium colour bonded ridge as per manufacture's specification and detailed drawing
- OB-4.230 Supply and fix zinc aluminium colour bonded 250mm wide fascia board as per manufacture's specification and detailed drawing
- OB-4.231 150mm x 150mm box type zinc aluminium colour bonded eaves gutter including all accessories as per approved manufacture, fix complete with brackets, as per detailed drawing.
- OB-4.232 100mm x 100mm zinc aluminium colour bonded down pipes, including all accessories as per approved manufacture, fix complete with brackets, as per detailed drawing.
- OB-4.233 Supply and fix complete .47 mm thick, and 475 mm girth, zinc aluminium gable capping flashing as shown in detailed drawing.
- OB-4.234 Supply and fix complete .47 mm thick and 395 mm girth, zinc aluminium apron flashing as shown in detailed drawing.
- OB-4.235 Supply and fix complete .47 mm thick and 900 mm girth (average), aluminium wall flashing as shown in detailed drawing.

- OB-4.236 Supply and fix complete. 47 mm thick and 900 mm girth (average), apron flashing in machine room as shown in detailed drawing.
- OB-4.237 Supply and fix complete .47 mm thick and 450mm girth chimney gutter in machine room as shown in detailed drawing.
- OB-4.238 Rainwater outlet in roof slab consisting, stainless steel surface water outlet set in concrete slab, and G.I coul guard fix complete as per detailed drawing.

Roof Machine Room

- OB-4.239 Supply and fix complete, 0.47 mm thick long span colour bonded zinc aluminium sheets in concrete roof including all accessories according to manufacture's specification and as per detailed drawing
- OB-4.240 25 mm thick insulation with aluminium foil both sides and glass wool, supported on wire mesh with plastic coating, fix complete as per detailed drawing.
- OB-4.241 Supply and fix zinc aluminium colour bonded ridge as per manufacture's specification and detailed drawing
- OB-4.242 Supply and fix zinc aluminium colour bonded 250mm wide fascia board as per manufacture's specification and detailed drawing
- OB-4.243 150mm x 150 mm box type zinc aluminium colour bonded eaves gutter including all accessories as per approved manufacture, fixed complete with brackets, as per detailed drawing.
- OB-4.244 100mm x 100mm zinc aluminium colour bonded down pipes, including all accessories as per approved manufacture, fixed complete with brackets, as per detailed drawing.

PLASTER WORKS

- OB-4.245 16 mm thick plaster in lime, cement and sand 1:1:5 finish smooth to projection of plinth beams up to DPC Level.
- OB-4.246 - 4.253 16 mm thick external plaster in cement, lime and sand 1:1:5 finish semi rough including 20 x 10 mm grooves along floor slab lines and beams from Ground Floor Level to First Floor Level
- OB-4.254 - 4.258 16 mm thick internal plaster in lime, cement and sand 1:1:5 finished smooth with lime putty from Ground Floor Level to First Floor Level.
- OB-4.259 - 4.261 16 mm thick soffit plaster in cement, lime and sand 1:1:5 finished smooth with lime putty from Ground Floor Level to First Floor Level
- OB-4.262 - 4.269 16 mm thick external plaster in cement, lime and sand 1:1:5 finish semi rough including 20 x 10 mm grooves along floor slab lines and beams from First Floor Level to Second Floor Level
- OB-4.270 - 4.274 16 mm thick internal plaster in cement, lime and sand 1:1:5 finish smooth with lime putty from First floor Level to Second Floor Level
- OB-4.275 - 4.276 16 mm thick soffit plaster in cement, lime and sand 1:1:5 finish smooth with lime putty from First floor Level to Second Floor Level

- OB-4.277 - 4.284 16 mm thick external plaster in cement, lime and sand 1:1:5 finish semi rough including 20 x 10 mm grooves along floor slab lines and beams from Second floor Level to Third Floor Level
- OB-4.285 - 4.289 16 mm thick internal plaster in cement, lime and sand 1:1:5 finish smooth with lime putty, from Second Floor Level to Third Floor Level.
- OB-4.290 - 4.291 16 mm thick soffit plaster in cement, lime and sand 1:1:5 finish smooth with lime putty, from Second Floor Level to Third Floor Level.
- OB-4.292 - 4.298 16 mm thick external plaster in cement, lime and sand 1:1:5 finish semi rough including 20 x 10 mm grooves along floor slab lines and beams above Third Floor Level
- OB-4.299 - 4.304 16 mm thick internal plaster in cement, lime and sand 1:1:5 finish smooth with lime putty, above Third Floor Level.
- OB-4.304 - 4.308 16 mm thick soffit plaster in cement, lime and sand 1:1:5 finish smooth with lime putty, above Third Floor Level.

PAVING

Ground Floor

- OB-4.309 - 4.312 Insitu terrazzo floors & in tread and rise of internal staircase with 25 x 25 mm nosing in cement and terrazzo chips 1:6 mix, to approved tint and quality with Aluminum strips, including 20 mm thick cement and sand rendering 1:2 and 75 mm high skirting as per instructions. (in places as shown in drawing No. (MK/OB/A-13), in Ground Floor.
- OB-4.312a 2Nos. carborundum strips fix to each step of internal & external staircases, as per detailed drawing.
- OB-4.313 - 4.316 20 mm thick cement and sand rendering 1:2 and finished smooth with coloured cement in floors, stair case and 75 mm high skirting laid in one operation and the skirting to be rounded off to a radius of 25 mm. as per instructions.
- OB-4.317 18 mm thick DPC in cement and sand 1:3 finished with 2 coats of DPC tar and blinded with sand.
- OB-4.318 Ceramic 300 x 300 mm floor tiles paving of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.319 75 mm high ceramic tiles skirting of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.320 200 x 200 mm Cement pressed floor tile of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.321 75 mm high cement pressed floor tile skirting of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.

- OB-4.322 Laying of Water proofing membrane shall be Bituthene 1000 coated to polyethylene film as per specifications, and instructions of the water-proofing specialist to walls and floors of toilet
- OB-4.323 150mm thick, hollow cement block work filling, in cement and sand mortar 1:5 mix in toilet floors as per detailed drawing.
- OB-4.324 Ceramic non skid floor tiles 200 x200 mm of approved colour and quality laid on toilet floors with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand rendering as per detailed drawing
- OB-4.325 Ceramic wall tiles 200 x200 mm of approved colour and quality fix on to toilet walls with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand plastering as per detailed drawing

First Floor

- OB-4.326 - 4.329 Insitu terrazzo floors & in tread and rise of internal stair- case with 25 x 25 mm nosing in cement and terrazzo chips 1:6 mix, to approved tint and quality with Aluminum strips, including 20 mm thick cement and sand rendering 1:2 and 75mm high skirting as per instructions. (In places as shown in drawing No.(MK/OB/A-13), in First Floor.
- OB-4.330 2Nos. carborundum strips fix to each step of internal & external staircases, as per detailed drawing.
- OB-4.331 - 4.334 20 mm thick cement and sand rendering 1:2 and finished smooth with coloured cement in floors, stair case and 75 mm high skirting laid in one operation and the skirting to be rounded off to a radius of 25 mm. as per instructions.
- OB-4.335 Ceramic 300 x 300 mm floor tiles paving of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.336 75 mm high ceramic tiles skirting of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.337 200 x 200 mm Cement pressed floor tile of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.338 75 mm high cement pressed floor tile skirting of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.339 Laying of Water proofing membrane shall be Bituthene 1000 coated to polyethylene film As per specifications, and instructions of the water-proofing specialist to walls and floors of toilets.
- OB-4.340 150mm thick, hollow cement block work filling in cement and sand mortar 1:5 mix in toilet floors as per detailed drawing.
- OB-4.341 Ceramic non skid floor tiles 200 x200 mm of approved colour and quality laid on toilet floors with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand rendering as per detailed drawing.

OB-4.342 Ceramic wall tiles 200 x200 mm of approved colour and quality fix on to toilet walls with cement slurry and joints finished with tile grout to match the colour of tiles including 20mm thick 1:3 cement and sand plastering as per detailed drawing.

Second Floor

OB-4.343 - 4.346 Insitu terrazzo floors & in tread and rise of internal stair- case with 25 x 25 mm nosing in cement and terrazzo chips 1:6 mix, to approved tint and quality with Aluminum strips, including 20 mm thick cement and sand rendering 1:2 and 75 mm high skirting as per instructions. (in places as shown in drawing No.MK/OB/A-13), in Second Floor.

OB-4.347 2 nos. carborundum strips fix to each step of internal & external staircases, as per detailed drawing.

OB-4.348 - 4.351 20 mm thick cement and sand rendering 1:2 and finished smooth with coloured cement in floors, stair case and 75 mm high skirting laid in one operation and the skirting to be rounded off to a radius of 25 mm. as per instructions.

OB-4.352 Ceramic 300 x 300 mm floor tiles paving of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.

OB-4.353 75 mm high ceramic tiles skirting of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.

OB-4.354 Laying of water proofing membrane shall be Bituthene 1000 coated to polyethylene film as per specifications, and instructions of the waterproofing specialist to walls and floors of toilets.

OB-4.355 150mm thick, hollow cement block work filling in cement and sand mortar 1:5 mix in toilet floors as per detailed drawing.

OB-4.356 Ceramic non skid floor tiles 200 x200 mm of approved colour and quality laid on toilet floors with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand rendering as per detailed drawing.

OB-4.357 Ceramic wall tiles 200 x200 mm of approved colour and quality fix on to toilet walls with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand plastering as per detailed drawing.

Third Floor

OB-4.358 - 4.359 Insitu terrazzo floors & in tread and rise of internal stair- case with 25 x 25 mm nosing in cement and terrazzo chips 1:6 mix, to approved tint and quality with Aluminum strips, including 20 mm thick cement and sand rendering 1:2 and 75 mm high skirting as per instructions. (in places as shown in drawing No.(MK/OB/A-13) in Third Floor.

OB-4.360 2 nos. carborundum strips fix to each step of external staircase, as per detailed drawing.

OB-4.361 - 4.364 20 mm thick cement and sand rendering 1:2 and finished smooth with coloured cement in floors, staircase and 75 mm high skirting laid in one operation and the skirting to be rounded off to a radius of 25 mm. as per instructions.

- OB-4.365 Ceramic 300 x 300 mm floor tiles paving of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.366 75 mm high ceramic tiles skirting of approved colour, make and quality with cement slurry including 20 mm thick cement sand rendering 1:2, finish neat with tile grout to match the colour of the tiles, where indicated in drawing.
- OB-4.367 Laying of Water proofing membrane shall be Bituthene 1000 coated to polyethylene film as per specifications, and instructions of the water proofing specialist to walls and floors of toilets.
- OB-4.368 150mm thick, hollow cement block work filling in cement and sand mortar 1:5 mix in toilet floors as per detailed drawing.
- OB-4.369 Ceramic non skid floor tiles 200 x200 mm of approved colour and quality laid on toilet floors with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand rendering as per detailed drawing.
- OB-4.370 Ceramic wall tiles 200 x200 mm of approved colour and quality fix on to toilet walls with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand plastering as per detailed drawing
- OB-4.371 Styrofoam layer, laid according to specifications by specialist and as per instructions in roof slab.
- OB-4.372 Pressed Cement floor tiles 200 x200 mm of approved colour and quality laid on floors with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand rendering as per instructions.
- OB-4.373 75 mm high cement pressed floor tile skirting of approved colour and quality laid on floors with cement slurry and joints finished with tile grout to match the colour of tiles including 20 mm thick 1:3 cement and sand rendering as per instructions.

WATER SUPPLY & SANITARY PLUMBING

Ground Floor

- OB-4.374 Supplying, and fix complete to working order, English make or equivalent close coupled, ceramic water closet and low level cistern with flushing arrangements, with trap, angle valve, flexible hose, and all other fittings and accessories.
- OB-4.375 Supplying, and fix complete to working order, English make or equivalent, ceramic wash basin, with stainless steel brackets, bottle trap, angle valve, flexible hose, and all stainless steel fittings and accessories.
- OB-4.376 Supplying, and fix complete to working order, ceramic urinals 4 bowls complete with built in traps, stainless steel piping, and common high level flushing cistern and divisions as per detailed drawing.
- OB-4.377 Supplying and fix complete to working order, ceramic and stainless steel sanitary facilities including all accessories to disables as per detailed drawing.

- OB-4.378 Supplying and fix complete to working order, stainless steel sink with double draining boards, stainless steel tap, waste outlet, waste plug and chromium plated chain, CP bottle trap, angle valve, flexible hose, and waste water connections as per instructions.
- OB-4.379 Supplying and fixing of mirror 1950 x 650mm bevelled edges fixing to wall with plywood backing.
- OB-4.380 Supplying and fixing to working order, 12 mm chromium plated bib taps.
- OB-4.381 Supplying and fixing, of ceramic paper holder.

NOTE : Supplying , laying, jointing and testing of PVC pipe of type 1000 for water supply, and 600 for others, along walls, under roof, embedded into walls, and under ground Including pipe specials. Rate to include for excavation and back filling where necessary as per detailed drawing.

- OB-4.382 20 mm dia. PVC pipes for water service.
- OB-4.383 25 mm dia. PVC pipes for water service.
- OB-4.384 32 mm dia. PVC pipes for water service.
- OB-4.385 50 mm dia. PVC pipes for water service.
- OB-4.386 63 mm dia. PVC pipes for water service.
- OB-4.387 Construction of RCC under ground water tank, including water proofing as per detailed drawing.
- OB-4.388 Supply and fix to working order submersible type centrifugal pumps including foot valve with strainer and other accessories and spare parts, as per specifications.
- OB-4.389 50 mm dia. brass stop valve fixed to working order.
- OB-4.390 50 mm dia. brass ball valve fixed to working order.
- OB-4.391 225 mm thick brick work in cement mortar 1:5 in 1200 mm dia. internally in soakage pit including 225 wide 150mm thick, cement concrete 1:2:4 (20) ring foundation, and perforated PVC pipes, dry rubble packing in bottom and 150 mm thick RCC covers at top, as per detailed drawing.
- OB-4.392 1350 mm x 750mm grease trap with 450 mm x 450 mm manhole (internal dimensions) including 150mm thick concrete base of 1:2:4 (20), 225 mm brick work, PVC pipes, and 75 mm thick RCC covers as per detailed drawing.
- OB-4.393 Construction of brick manhole internal size 1500 x 900 x 1000 mm deep including necessary excavation and back filling, 150mm thick concrete 1:3:6 (25) in base, 225Thick walls in cement and sand 1:5, and 20 mm thick cement and sand 1:3 rendering to all internal faces and channeling, complete with 75 mm removable RCC cover as per detailed drawing.
- OB-4.394 Construction of brick manhole internal size 450 x 700 x 900mm deep including necessary excavation and back filling, 150mm thick concrete 1:3:6 (25) in base, 225Thick walls in cement and sand 1:5, and 20 mm thick cement and sand 1:3rendering to all internal faces and channelling, complete with 75 mm removable RCC cover as per detailed drawing.

- OB-4.395 Construction of brick drop manhole internal size 1200 x900 x1000 mm deep including necessary excavation and back filling, 150 mm thick concrete 1:3:6 (25) in base, 225 mm thick walls in cement and sand 1:5, and 20 mm thick cement and sand 1:3 rendering to all internal faces and channeling, complete with 75 mm removable RCC cover as per detailed drawing.
- OB-4.396 Construction of gully 300 x 300 x 225mm internal of RCC with removable cover slab as per detailed drawing.
- OB-4.397 150 x 150 x150mm deep 1:3:6 (12) cement concrete catch pits with PVC grating, as per detailed drawing.
- OB-4.398 Supplying & laying 110 mm dia. uPVC sewer pipes, including, cement concrete 1:3:6 (25) haunching as per detailed drawing.
- OB-4.399 Supplying & laying 90 mm dia. uPVC waste water pipes.
- OB-4.400 Supplying & laying 63 mm dia. uPVC waste water pipes.
- OB-4.401 Supplying & laying 50 mm dia. uPVC waste water pipes.

First Floor

- OB-4.402 Supplying, and fix complete to working order, English make or equivalent close coupled, ceramic water closet and low level cistern with flushing arrangements, with trap, angle valve, flexible hose, and all other fittings and accessories.
- OB-4.403 Supplying, and fix complete to working order, English make or equivalent, ceramic wash basin with stainless steel brackets, bottle trap, angle valve, flexible hose, and all stainless steel fittings and accessories.
- OB-4.404 Supplying, and fix complete to working order, ceramic urinals 4 bowls complete with built in traps, stainless steel piping, and common high level flushing cistern and divisions as per detailed drawing.
- OB-4.405 Supplying and fix complete to working order, ceramic and stainless steel sanitary facilities including all accessories to disables as per detailed drawing.
- OB-4.406 Supplying and fix complete to working order, stainless steel sink with double draining boards, stainless steel tap, waste outlet, waste plug and chromium plated chain, CP bottle trap, angle valve, flexible hose, and waste water connections.
- OB-4.407 Supplying and fixing of mirror 1950 x 650 mm bevelled edges fixing to wall with plywood backing.
- OB-4.408 Supplying and fixing to working order, 12 mm chromium plated bib taps.
- OB-4.409 Supplying and fixing, of ceramic paper holder.
- OB-4.410 Supplying and fixing of 20 mm dia. PVC pipes for water service.
- OB-4.411 Supplying and fixing of 25 mm dia. PVC pipes for water service.
- OB-4.412 Supplying and fixing of 32 mm dia. PVC pipes for water service.
- OB-4.413 Supplying and fixing of 50 mm dia. PVC pipes for water service.

- OB-4.414 Supplying and fixing of 63 mm dia. PVC pipes for water service.
- OB-4.415 150 x 150 x150mm deep 1:3:6 (12) cement concrete catch pits with PVC grating as per detailed drawing
- OB-4.416 Supplying & laying 110 mm dia. uPVC sewer pipes, as per detailed drawing
- OB-4.417 Supplying & laying 90 mm dia. uPVC waste water pipes.
- OB-4.418 Supplying and fixing of 63 mm dia. PVC pipes for waste water.
- OB-4.419 Supplying and fixing of 50 mm dia. PVC pipes for waste water.

Second Floor

- OB-4.420 Supplying, and fix complete to working order, English make or equivalent close coupled, ceramic water closet and low level cistern with flushing arrangements, with trap, angle valve, flexible hose, and all other fittings and accessories.
- OB-4.421 Supplying, and fix complete to working order, English make or equivalent, ceramic wash basin with stainless steel brackets, bottle trap, angle valve, flexible hose, and all stainless steel fittings and accessories.
- OB-4.422 Supplying, and fix complete to working order, English make or equivalent ceramic urinals 4 bowls complete with built in traps, stainless steel piping, and common high level flushing cistern and divisions as per detailed drawing.
- OB-4.423 Supplying and fix complete to working order, English make or equivalent ceramic and stainless steel sanitary facilities including all accessories to disables as per detailed drawing.
- OB-4.424 Supplying and fix complete to working order, English make or equivalent, stainless steel sink with double draining boards, stainless steel tap waste outlet, waste plug and chromium plated chain, CP bottle trap, angle valve, flexible hose, and waste water connections.
- OB-4.425 Supplying and fixing of mirror 1950 x 650mm bevelled edges fixing to wall with plywood backing.
- OB-4.426 Supplying and fixing to working order, 12 mm chromium plated bib taps.
- OB-4.427 Supplying and fixing, of ceramic paper holder.
- OB-4.428 Supplying and fixing 20 mm dia. PVC pipes for water service.
- OB-4.429 Supplying and fixing 25 mm dia. PVC pipes for water service.
- OB-4.430 Supplying and fixing 32 mm dia. PVC pipes for water service.
- OB-4.431 Supplying and fixing 50 mm dia PVC pipes for water service.
- OB-4.432 Supplying and fixing 63 mm dia. PVC pipes for water service.
- OB-4.433 150 x150 x 150mm deep 1:3:6 (12) cement concrete catch pits with PVC grating as per detailed drawing
- OB-4.434 Supplying & laying 110 mm dia. uPVC sewer pipes, as per detailed drawing

- OB-4.435 Supplying & laying 90 mm dia. PVC waste water pipes
- OB-4.436 Supplying & laying 63 mm dia PVC waste water pipes
- OB-4.437 Supplying & laying 50 mm dia. PVC waste water pipes.

Third Floor

- OB-4.438 Supplying, and fix complete to working order, English make or equivalent close coupled, ceramic water closet and low level cistern with flushing arrangements, with trap, angle valve, flexible hose, and all other fittings and accessories.
- OB-4.439 Supplying, and fix complete to working order, English make or equivalent, ceramic wash basin, with stainless steel brackets, bottle trap, angle valve, flexible hose, and all stainless steel fittings and accessories
- OB-4.440 Supplying, and fix complete to working order, English make or equivalent ceramic urinals 4 bowls complete with built in traps, stainless steel piping and common high level flushing cistern and divisions as per detailed drawing.
- OB-4.441 Supplying and fix complete to working order, English make or equivalent ceramic and stainless steel sanitary facilities including all accessories to disables as per detailed drawing
- OB-4.442 Supplying and fix complete to working order, English make or equivalent, stainless steel sink with double draining boards, stainless steel tap waste outlet, waste plug and chromium plated chain, CP bottle trap, angle valve, flexible hose, and waste water connections.
- OB-4.443 Supplying and fixing of mirror 1950 x 650mm bevelled edges fixing to wall with plywood backing
- OB-4.444 Supplying and fixing to working order, 12 mm chromium plated bib taps.
- OB-4.445 Supplying and fixing, of ceramic paper holder.
- OB-4.446 Supplying and fixing, of 20 mm dia. PVC pipes for water service.
- OB-4.447 Supplying and fixing, of 25 mm dia. PVC pipes for water service.
- OB-4.448 Supplying and fixing, of 32 mm dia. PVC pipes for water service.
- OB-4.449 Supplying and fixing, of 50 mm dia. PVC pipes for water service.
- OB-4.450 Supplying and fixing, of 63 mm dia. PVC pipes for water service.
- OB-4.451 Supplying and fixing, of 63 mm dia. brass bore valve
- OB-4.452 Supplying and fixing, of 50 mm dia. brass stop valve
- OB-4.453 Supplying and installation of propylene or equivalent water tanks with a capacity of 2000 litres, with accessories as per instructions.
- OB-4.454 150 x 150 x150mm deep 1:3:6 (12) cement concrete catch pits with PVC grating as per detailed drawing
- OB-4.455 Supplying & laying 110 mm dia. uPVC sewer pipes, including vent and flashing collar as per detailed drawing at roof slab.

- OB-4.456 Supplying & laying 90 mm dia. uPVC waste water pipes, including vent and flashing collar as per detailed drawing at roof slab.
- OB-4.457 Supplying and fixing 63 mm dia. PVC waste water pipes.
- OB-4.458 Supplying and fixing 50 mm dia. PVC waste water pipes.
- OB-4.459 Supplying and fixing 110mm dia. PVC dome in vent pipes.
- OB-4.460 Supplying and fixing 90mm dia. PVC dome in vent pipes.

PAINT WORKS

Ground Floor

- OB-4.461 Prepare and apply two coats of filler and two coats of weather proof Emulsion paint of approved colour to external faces of Walls & Columns.
- OB-4.462 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to internal faces of Walls.
- OB-4.463 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to soffits of slabs.

First Floor

- OB-4.464 Prepare and apply two coats of filler and two coats of weather proof Emulsion paint of approved colour to external faces of Walls & Columns.
- OB-4.465 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to internal faces of Walls
- OB-4.466 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to soffits of slabs

Second Floor

- OB-4.467 Prepare and apply two coats of filler and two coats of weather proof Emulsion paint of approved colour to external faces of Walls & Columns.
- OB-4.468 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to internal faces of Walls.
- OB-4.469 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to soffits of slabs.

Third Floor

- OB-4.470 Prepare and apply two coats of filler and two coats of weather proof Emulsion paint of approved colour to external faces of Walls & Columns.
- OB-4.471 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to internal faces of Walls.
- OB-4.472 Prepare and apply two coats of primer and two coats of Emulsion paint of approved colour to soffits of slabs.

STORM WATER DISPOSAL

- OB-4.473 Construction of RCC drain 300 wide x 225-750mm high with RCC cover slabs including excavation and compacted back filling as per detailed drawing.
- OB-4.474 Laying in position 600 x 200 x 600 mm pre-cast paving stone with drain in grade 25 (20) cement concrete in grade 20 (20) concrete base to a gradient as per detailed drawing including excavation and backfilling as directed.
- OB-4.475 Supply and jointing in position 225mm. dia. hume pipes including collars and haunching. Rate to include for excavation up to 1.5 M. refilling and compaction, as per drawing or as directed by the Engineer.
- OB-4.476 Supply and jointing in position 275mm. dia. hume pipes including collars and haunching. Rate to include for excavation up to 1.5M. refilling and compaction, as per drawing or as directed by the Engineer.
- OB-4.477 Construction of 900 x 900 x 600 mm deep man hole including RCC covers and excavation and back filling and compaction, as per drawing or as directed.

EXTERNAL WORKS

- OB-4.478 Construction of security hut in, 225mm thick bricks in cement mortar 1:5 and zinc aluminium colour bonded sheet roof as per detailed drawing.
- OB-4.479 Laying 600 x 600 x 75 mm pre-cast concrete Slabs of Grade 20(20) on pavement to line and level on 50mm thick sand layer on prepared bed course material. The slabs to be jointed using 1:3 Cement Sand mortar as directed, the space where a complete pre-cast slab cannot be placed due to the restricted area, Grade 20(20mm) concrete shall be laid to a thickness of 75 mm. as per instructions.
- OB-4.480 Laying Grade 25 (20) pre-cast Concrete Kerbs 100 mm wide x 600mm long x 250mm high, set on Grade 20 (20mm) concrete foundation including excavation and compacted backfilling.
- OB-4.481 Supplying laying and compacted 150 mm thick, 37.5 aggregate base course prime coat and DBST including excavation, and spoil to be removed out of sight.
- OB-4.482 150 mm thick 1800 mm high cement hollow block work masonry in 1:5 in boundary wall including 150 mm x 150 mm R.C.C columns at every 3.0 m., rubble masonry foundation and 1:3:6(20) cement concrete coping as per detailed drawing.
- OB-4.483 Plastic coated wire mesh in security fence to a height of 1800 mm including 150 mm x 150 mm R.C.C columns at every 3.0 m & rubble masonry foundation as per detailed drawing.
- OB-4.484 Supplying, making and fixing to working order 4500 mm long and 1800 mm high GI pipe and zinc aluminium colour bounded sheet gate including locking arrangements and one coat of ETCH primer and two coats of enamel paints as per detailed drawing.

FIRE FIGHTING & ALARM SYSTEM

OB-4.485 – 4.495 Specifications are given in the BOQ.

VENTILATION SYSTEM

OB-4.496 – 4.499 Specifications are given in the BOQ

ELECTRICAL INSTALLATION

OB-4.500 – 4.546 Specifications are given in the BOQ

MISCELLANEOUS

Ground Floor

- OB-4.547 Construction of Mineral Fibre suspended ceiling system, consisting of 600 x 600 x 18mm thick mineral fibre ceiling panels, with 24 mm x 38 mm aluminium T section frame work suspended with 3 mm GI rods with adjustable clips as per detailed drawing.
- OB-4.548 600 x 600 mm Exhaust diffusers
- OB-4.549 Construction and fixing in position 300 x 300 mm 18 gauge. G.I. duct, as per detailed drawing.
- OB-4.550 Supplying, making and fixing in position stainless steel hand rails in internal stair case with stainless steel pipes of 50 mm, 38 mm. and 20 mm dia. as per detailed drawing.
- OB-4.551 Supplying, making and fixing in position stainless steel hand rails in internal staircase with stainless steel pipes of 50mm dia, with brackets to wall as per detailed drawing.
- OB-4.552 Construction of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with 40 x 40 mm square steel tubes and 12 x 12 mm square steel tube verticals fixed complete including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.553 Fixing of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with brackets including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.554 Construction of reception counter including polishing as per detailed drawing.
- OB-4.555 Supply, making and fixing in position 540mm x 2650mm iron grill with 20mm x 20mm box iron frame as per detailed drawing including two coats of anticorrosive and two coats of gloss paint.

First Floor

- OB-4.556 Construction of Mineral Fiber suspended ceiling system, consisting of 600 x 600 x 18mm thick mineral fiber ceiling panels, with 24 mm x 38 mm aluminium T section frame work suspended with 3 mm GI rods with adjustable clips as per detailed drawing.

- OB-4.557 600 x 600 mm Exhaust diffusers
- OB-4.558 Construction and fixing in position 300 x 300 mm 18 gauge G.I duct as per detailed drawing.
- OB-4.559 Supplying, making and fixing in position stainless steel hand rails in internal stair case with stainless steel pipes of 50 mm, 38 mm. and 20 mm dia. as per detailed drawing.
- OB-4.560 Supplying, making and fixing in position stainless steel hand rails in internal staircase with stainless steel pipes of 50mm dia, with brackets to wall as per detailed drawing.
- OB-4.561 Construction of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with 40 x 40 mm square steel tubes and 12 x 12 mm square steel tube verticals fixed complete including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.562 Supplying, making and fixing in position GI hand rails in balcony, including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.563 Construction of reception counter including polishing as per detailed drawing.
- OB-4.564 Supply, making and fixing in position 540mm x 2650mm iron grill with 20mm x 20mm box iron frame as per detailed drawing including two coats of anticorrosive and two coats of gloss paint.

Second Floor

- OB-4.565 Construction of Mineral Fibre suspended ceiling system, consisting of 600 x 600 x 18mm thick mineral fibre ceiling panels, with 24 mm x 38 mm aluminium T section frame work suspended with 3 mm GI rods with adjustable clips as per detailed drawing.
- OB-4.566 600 x 600 mm Exhaust diffusers
- OB-4.567 Construction and fixing in position 300 x 300 mm 18 gauge G.I duct as per detailed drawing.
- OB-4.568 Supplying, making and fixing in position stainless steel hand rails in internal stair case with stainless steel pipes of 50 mm, 38 mm. and 20 mm dia. as per detailed drawing.
- OB-4.569 Supplying, making and fixing in position stainless steel hand rails in internal staircase with stainless steel pipes of 50mm dia, with brackets to wall as per detailed drawing.
- OB-4.570 Construction of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with 40 x 40 mm square steel tubes and 12 x 12 mm square steel tube verticals fixed complete including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.571 Fixing of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with brackets including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.572 Supplying, making and fixing in position GI hand rails in balcony, including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing
- OB-4.573 Construction of reception counter including polishing as per detailed drawing.

OB-4.574 Supply, making and fixing in position 540mm x 2650mm iron grill with 20mm x 20mm box iron frame as per detailed drawing including two coats of anticorrosive and two coats of gloss paint.

Third Floor

OB-4.575 Construction of Mineral Fibre suspended ceiling system, consisting of 600 x 600 x 18mm thick mineral fibre ceiling panels, with 24 mm x 38 mm aluminium T section frame work suspended with 3 mm GI rods with adjustable clips as per detailed drawing.

OB-4.576 600 x 600 mm Exhaust diffusers

OB-4.577 Construction and fixing in position 300 x 300 mm 18 gauge G.I duct as per detailed drawing.

OB-4.578 Weather proof gypsum board eave ceiling on hard wood timber frame as per detail drawing including one coat of primer and two coats of emulsion paint.

OB-4.579 Construction of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with 40 x 40 mm square steel tubes and 12 x 12 mm square steel tube verticals fixed complete including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing

OB-4.580 Fixing of 50 mm dia. heavy quality G.I pipe hand rails in external stair case with brackets including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing

OB-4.581 Supplying, making and fixing in position GI hand rails in balcony, including one coat of ETCH primer and two coats of enamel paints to approved tint, as per detailed drawing

OB-4.582 Construction of reception counter including polishing as per detailed drawing.

OB-4.583 Construction of 665 mm x 150 mm openings in above wall including 1:1:5 plastering, as per detailed drawing.

OB-4.584 Supply, making and fixing in position 540mm x 2650mm iron grill with 20mm x 20mm box iron frame as per detailed drawing including two coats of anticorrosive and two coats of gloss paint.

DAYWORKS SCHEDULE**1. General**

Reference should be made to Clause 52.4 of General Conditions of Contract. Work shall not be executed on a Daywork basis except by written order by the Engineer. Contractors shall be entitled to payment in respect of Labour, Material and Plant used for dayworks, at the rates given in the schedules of Day Works.

Percentage overhead and profit indicated in BOQ item G1.32 should cover all administration and financial cost including Contractor's overhead and profit, cost of liaison with external agencies and all other costs related to Day Works

2. Labour

Only the time of classes of labour directly doing work ordered by the Engineer and for which they are competent to perform will be measured. The time of gangers (charge hands) actually doing the work with the gangs will also be measured but not the time of foremen or other supervisory personnel.

The given rate shall cover; all direct costs to the Contractor, including the amount of wages paid to such labour, transportation time, overtime, subsistence, allowances, and any sums paid to or on behalf of such labour for social benefits in accordance with Sri Lankan Law.

Percentage overhead and profit indicated in BOQ item G1.32 should cover all administration and financial cost including Contractor's overhead and profit, cost of liaison with external agencies and all other costs related to Day Work Labour.

SCHEDULE OF DAYWORK RATES**LABOUR**

ITEM	DESCRIPTION	UNIT	RATE (SLRs.cts)
1	Ganger	Day	450
2	Unskilled Labourer	Day	300
3	Operator for Crawler Mounted Machine/ Crane	Day	450
4	Operator for Wheel Mounted Machine	Day	450
5	Operator for Pneumatic tools	Day	450
6	Driver for Trucks / Bowser / Tractor/ Lorry / Trailer etc.	Day	450
7	Mechanic	Day	400
8	Electrician	Day	400
9	Painter	Day	350
10	Welder	Day	400
11	Bar Bender/Reinforcement Worker	Day	400
12	Mason/Concrete Worker	Day	400
13	Carpenter/Form Worker	Day	400
14	Pipe Layer / Fitter / Plumber	Day	400

NOTE : The above rates are subjected to an annual escalation of 10% per annum, from the second year after the date of commencement of the Contract.

3. Daywork Materials

The given rates shall cover; the price, freight, insurance, handling, expenses, damage, losses, etc, and shall provide for delivery to store for stock piling at the site; and

Percentage overhead and profit indicated in BOQ item G1.32 should cover all administration and financial cost including Contractor's overhead and profit, cost of liaison with external agencies and all other costs related to Day Work Materials.

The cost of any materials supplied by NWSDB for use on Dayworks shall not be taken into account and additional percentage quoted also not applicable.

The Contractor must submit his receipts/bills to the Engineer in support of all Dayworks materials payment claims.

SCHEDULE OF DAYWORK RATES

MATERIALS

ITEM	DESCRIPTION	UNIT	RATE(SLRs./cts)
1	a) Ready mix concrete up to Gr.20	Cu.m	5,000.00
	b) - do - from Gr. 20 up to Gr. 35 A	Cu.m	6,000.00
2	Cement Ordinary Portland or Equivalent in Bags (50 Kg)	Bag	325.00
3	Ribbed Tor Steel reinforcing Bar	Tonne	37,000.00
4	Fine aggregate for concrete as specified	Cu.m	530.00
5	Coarse aggregate for concrete as specified	Cu.m	1200.00
6	a) Timber (Class 1)	Cu.m	35,000.00
	b) Plywood Sheets (½ inch)	Sq.m	370.00
7	a) Bricks/Masonry Blocks	No	2.00
	b) Masonry Blocks (400 x 200 x 400)	No	14.10
	c) Rubble 225 x 150 mm	Cu.m	335.00
8	Hume Pipes 0.6 dia x2.4 m lengths	No	3,660.00
9	Channel Steel (H,L,.I)	Tonne	36,800.00
10	GI Sheets (2.4 x 1.2) - 24 guage	Nr	600.00
11	Sheet Piles	Tonne	40,000.00
12	(a) Paints (Enamel/Emulsion)	Litre	296.00
	(b) Anticorrosive/Al. Paints	Litre	394.00
	(c) Thinner	Litre	134.00
13	Asphalt	Litre	270.00
14	Fuel		
	a) Petrol	Litre	50.00
	b) Diesel	Litre	24.60

NOTE : The above rates are subjected to an annual escalation of 5% per annum, from the second year after the date of commencement of the Contract.

4. Daywork Constructional Plant

In calculating the payment due to the Contractor for Constructional Plant employed on daywork, only the actual number of working hours will be eligible for payment, except that where applicable and agreed with the Engineer, the travelling time from the part of the Site where the Construction Plant was located when ordered by the Engineer to be employed on daywork and the time for return journey thereto shall be included for payment. The cost of drivers and operators will be paid separately as described under the section on "Daywork Labour".

The given rate shall cover; due and complete allowances for depreciation, interest, indemnity and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumables, and all overhead profit and administrative costs related to the use of such equipment; and

Percentage overhead and profit indicated in BOQ item G1.32 should cover all administration and financial cost including Contractor's overhead and profit, cost of liaison with external agencies and all other costs related to Day Work of Constructional Plant.

SCHEDULE OF DAYWORK RATES CONSTRUCTIONAL PLANT

ITEM	DESCRIPTION	Minimum Capacity	UNIT	RATE(SLRs./cts)
1	a) Excavator - Crawler mounted	0.4 Cu.m	Hour	1,200.00
	b) -do-	0.7 Cu.m	Hour	1,900.00
	c) -do-	1.2 Cu.m	Hour	2,100.00
2	a) Bull-Dozer with Ripper- Crawler Mounted	90 HP	Hour	1,200.00
	b) -do-	200 HP	Hour	1,800.00
3	a) Back-Hoe Excavator - Wheel mounted with bucket width 0.3,0.45 and 0.6 m	70 HP	Hour	970.00
	b) -do-	85 HP	Hour	1,200.00
4	a) Front End Loader - Wheel mounted	1.4 Cu.m	Hour	970.00
	b) -do-	2.3 Cu.m	Hour	1,000.00
	c) -do-	3.2 Cu.m	Hour	1,200.00
5	Motor Grader - Wheel mounted	90 HP	Hour	1,500.00
6	a) Mobile Crane	2 Tonne	Hour	1,150.00
	b) -do-	5 Tonne	Hour	1,400.00
7	a) Concrete pump cart	55 Cu.m/Hr	Hour	300.00
	b) -do-	95 Cu.m/Hr	Hour	518.00
8	Boom Truck	15 Tonne	Hour	260.00
9	a) Dump Truck	4 Tonne	Hour	300.00
	b) -do-	8 Tonne	Hour	600.00
	c) -do-	11 Tonne	Hour	825.00
10	a) Trailer Truck for Pipe Transport	17 Tonne	Km	40.00
	b) -do- without load		Km	20.00
11	a) Low bed Trailer with prime mover for Machine / Pipe Transport with load	17 Tonne	Km	48.00
	b) -do- without load		Km	24.00
12	a) Agitator Car/Concrete Transport Truck	3 Cum.	Hour	900.00
	b) -do-	6 Cum.	Hour	1,500.00

ITEM	DESCRIPTION	Minimum Capacity	UNIT	RATE(SLRs./cts)
13	a) Water Bowser	1000 Lit	Hour	500.00
	b) -do-	4000 Lit	Hour	800.00
14	Tractor with Trailer	2 Cu.m.	Hour	175.00
15	a) Lorry / Pickup / Truck	1.5 Tonne	Hour	150.00
	b) Lorry	10 Tonne	Hour	260.00
16	a) Concrete mixer Truck (with self loading Facilities)	1.4 Cum.	Hour	250.00
	b) -do-	3.2 Cum.	Hour	300.00
17	Plate compactor/Vibrator	2 Tonne	Hour	225.00
18	Rammer Compactor / Vibrator	80 Kg.	Hour	150.00
19	a) Roller compactor / Vibrator	4 Tonne	Hour	400.00
	b) -do-	10 Tonne	Hour	750.00
20	Form Vibrator	0.4 Kw	Hour	100.00
21	Poker Vibrator Plant including 25, 32, 50 mm poker	0.4 Kw	Hour	100.00
22	a) Diesel Generator	1 kVA	Hour	100.00
	c) -do-	5 kVA	Hour	150.00
	d) Diesel Generator -	25 kVA	Hour	250.00
	e) -do-	60 kVA	Hour	300.00
23	a) Portable Air Compressor including rock Breakers & Hammers	175 cfm	Hour	400.00
	b) -do-	300 cfm	Hour	600.00
24	a) Submersible Pump	1 HP	Hour	210.00
	b) -do-	3 HP	Hour	240.00
	c) -do-	7 HP	Hour	360.00
25	a) Portable self priming engine driven Centrifugal diesel pump	50 mm	Hour	220.00
	b) -do-	60 mm	Hour	240.00
	c) -do-	75 mm	Hour	260.00
26	Spray painting Equipment		Hour	150.00
27	a) Portable Welding Plant including Welding rods 500 A		Hour	250.00
	b) Oxy-Acetylene Welding Set including welding rods		Hour	250.00
28	Bar Cutting / Bending Machine		Hour	200.00
29	a) Concrete Mixer	0.3 Cum.	Hour	200.00
	b) -do-	1.4 Cum.	Hour	350.00
30	Asphalt Cutter with diamond disc		Hour	300.00
31	Pipe Cutter / Grinder including Cutting Wheels		Hour	250.00

NOTE : The above rates are subjected to an annual escalation of 10% per annum, from the second year after the date of commencement of the Contract.

**THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO
AREA**

BILL OF QUANTITIES

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Grand Summary of Bill of Quantities	Grand - Sum
Grand Summary of Preliminaries and General Works	Gen - Sum
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Grand Summary of Schedule B	Summary B
Grand Summary of Schedule C	Summary C
Grand Summary of Schedule D	Summary D
Grand Summary of Schedule E	Summary E
Schedule A	
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Maligakanda New Reservoir	MK/GR - SUM
Maligakanda Rehabilitation of the Roof Structure of the Existing Reservoir	MK/RF - SUM
Ellie House Reservoir	EH/GR - SUM
Schedule B	
Gothatuwa Kolonnawa Pump House	KMU/PS - SUM
Gothatuwa Transmission Main	KMU/TM - SUM
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Schedule E	
Supply of Equipment and Materials for Reduction of Non-Revenue Water	SUP/EM - SUM

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF BILL OF QUANTITIES

ITEM No	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs/cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc Rs/cts
GEN	Grand Summary of General Works			
SUM-A	Grand Summary of Schedule A			
SUM-B	Grand Summary of Schedule B			
SUM-C	Grand Summary of Schedule C			
SUM-D	Grand Summary of Schedule D			
SUM-E	Grand Summary of Schedule E			
	Grand Total of above summaries			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF BILL OF QUANTITIES

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
	Grand Total of above summaries carried forward from GRAND - SUM			
	Less Discount (If any)			
	Total Tendered Sum carried <u>to Form of Tender</u>			
	GST (Excluding GST for Supply Items Involving Duty Component) 12.5 % (as specified in Clause 14.13 of Instructions to Tenderes)			

GST Registration No. :

Business Address :

.....
 Signature

Date

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : GRAND-SUM GENERAL REQUIREMENTS

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
GEN	General Works			
GEN-SUM	Grand Summary General Works			

GEN - SUM

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF SCHEDULE A

BILL NO. GRAND SUM/A : CONSTRUCTION AND REHABILITATION OF RESERVOIRS

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
MK/OB	Maligakanda Office Building			
MK/GR	Maligakanda New Reservoir			
MK/RF	Maligakanda Rehabilitation of the Roof Structure of the Existing Reservoir			
EH/GR	Ellie House Reservoir			
SUM/A	Grand Summary of Schedule A			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF SCHEDULE B

BILL NO. GRAND SUM/B : WATER SUPPLY ENHANCEMENT IN KOTIKAWATTE AND MULLERIYAWA AREA

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
KMU/PS	Gothatuwa - Kolonnawa Pump House			
KMU/TM	Gothatuwa Transmission Main			
KMU/GR	Gothatuwa Ground Reservoir and Pump House			
KMU/WT	Gothatuwa New Water Tower			
KMU/DM	Distribution Mains in Kotikawatte and Mulleriyawa Area			
SUM/B	Grand Summary of Schedule B			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF SCHEDULE C

BILL NO. GRAND SUM/C : REHABILITATION / REINFORCEMENT OF MEDIUM AND LARGE DIAMETER PIPE NETWORK IN CMC AREA

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
RM/DM-C1	Rehabilitation of Existing Mains			
RM/DM-C2	Reinforcement Mains, Replacement of Existing Valves			
SUM/C	Grand Summary of Schedule C			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF SCHEDULE D

BILL NO. GRAND SUM/D : REHABILITATION / REPLACEMENT OF SMALL DIAMETER PIPE NETWORK IN CB1 AREA

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
RS/DM-D1	Rehabilitation of Small Diameter Pipes			
RS/DM-D2	Replacement of Existing Mains, Service Connections and Valves			
SUM/D	Grand Summary of Schedule D			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

GRAND SUMMARY OF SCHEDULE E

BILL NO. GRAND SUM/E : SUPPLY OF EQUIPMENT AND MATERIALS FOR REDUCTION OF NON-REVENUE WATER

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
SUP/EM	Supply of Water Meters and Leak Detection Equipment			
SUP/EM	Grand Summary of Schedule E			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : MK/OB GRAND SUMMARY

MALIGAKANDA OFFICE BUILDING

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
MK/OB-1	Relocation of Services and Site Works			
MK/OB-2	Demolition of Old Court Building			
MK/OB-3	Demolition of Buildings in Propose Maligakanda New Reservoir Premises			
MK/OB-4	Construction of Office Building			
MK/OB-5	Construction of Generator / Transformer House			
MK/OB	Total of MK/OB Grand Summary to Grand Summary of Schedule A			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : MK/GR GRAND SUMMARY

MALIGAKANDA NEW RESERVOIR

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
MK/GR-1	Construction of New Ground Reservoir - Capacity 22,000 cu.m			
MK/GR-2	Supply and Delivery of DI Pipes and Fittings - Yard Piping			
MK/GR-3	Construction of New Valve Chamber			
MK/GR-4	Supply and Delivery of DI Pipes and Fittings for Valve House			
MK/GR-5	Laying and Installation of DI Pipes and Fittings - Yard Piping			
MK/GR-6	Laying and Installation of Pipes and Fittings in Valve House			
MK/GR-7	Modification of Existing Chlorination House			
MK/GR-8	Supply and Delivery of Chlorination Equipment			
MK/GR-9	Installation of Chlorination Equipment			
MK/GR-10	Supply and Delivery of Local Control Panel			
MK/GR-11	Installation of Local Panel			
MK/GR	Total of MK/GR Grand Summary to Grand Summary of Schedule A			

MK/GR-SUM

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : MK/RF GRAND SUMMARY

MALIGAKANDA REHABILITATION OF THE ROOF STRUCTURE
OF THE EXISTING RESERVOIR

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
MK/RF-1	Rehabilitation of Roof Structure of Existing Reservoir - Demolition			
MK/RF-2	Rehabilitation of Roof Structure of Existing Reservoir - Concrete Works			
MK/RF-3	Rehabilitation of Roof Structure of Existing Reservoir - Intake Structure			
MK/RF-4	Supply and Delivery of Pipes and Fittings, Installation & Refurbishment of Pipe Work			
MK/RF	Total of MK/RF Grand Summary to Grand Summary of Schedule A			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : EH/GR GRAND SUMMARY

ELLIE HOUSE RESERVOIR

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
EH/GR-1	Construction of New Ground Reservoir - Capacity 36,600 cu.m			
EH/GR-2	Supply and Delivery of Material for Yard Piping			
EH/GR-3	Construction of New Valve House and Office			
EH/GR-4	Laying and Installation of Materials for Yard Piping			
EH/GR-5	Supply and Delivery of Chlorination Equipment			
EH/GR-6	Installation of Chlorination Equipment			
EH/GR-7	Supply and Delivery of Local Control Panel			
EH/GR-8	Installation of Local Control Panel			
EH/GR-9	Site Works			
EH/GR-10	Demolition of Existing Reservoir			
EH/GR	Total of EH/GR Grand Summary to Grand Summary of Schedule A			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : KMU/PS GRAND SUMMARY

GOTHATUWA - KOLONNAWA PUMP HOUSE

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
KMU/PS-1	Construction of Pump House			
KMU/PS-2	Supply and Delivery of Mechanical Equipment			
KMU/PS-3	Installation of Mechanical Equipment			
KMU/PS-4	Supply and Delivery of Pipes and Fittings			
KMU/PS-5	Laying and Installation of Yard Piping			
KMU/PS-6	Supply and Delivery of Electrical Equipment			
KMU/PS-7	Installation of Electrical Equipment			
KMU/PS	Total of KMU/PS Grand Summary to Grand Summary of Schedule B			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : KMU/TM GRAND SUMMARY

GOTHATUWA TRANSMISSION MAIN

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
KMU/TM-1	Supply and Delivery of DI Pipes and Fittings			
KMU/TM-2	Supply and Delivery of PVC Pipes and Fittings			
KMU/TM-3	Supply and Delivery of Valve, Fire Hydrants and Specials			
KMU/TM-4	Laying and Installation of DI Pipes and Specials			
KMU/TM-5	Laying and Installation of PVC Pipes and Specials			
KMU/TM-6	Installation of Valves, Fire Hydrants and Specials			
KMU/TM	Total of KMU/TM Grand Summary to Grand Summary of Schedule B			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : KMU/GR GRAND SUMMARY

GOTHATUWA GROUND RESERVOIR AND PUMP HOUSE

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
KMU/GR-1	Site Works			
KMU/GR-2	Construction of Groud n Reservoir and Pump House			
KMU/GR-3	Supply and Delivery of Materials for Yard Piping			
KMU/GR-4	Laying and Installation of Materials for Yard Piping			
KMU/GR-5	Supply of Pumps and Accessories			
KMU/GR-6	Supply and Delivery of Electrical Equipment			
KMU/GR-7	Installation of Mechanical Equipment			
KMU/GR-8	Installation of Electrical Equipment			
KMU/GR	Total of KMU/GR Grand Summary to Grand Summary of Schedule B			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : KMU/WT GRAND SUMMARY

GOTHATUWA NEW WATER TOWER

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
KMU/WT-1	Construction of 1500 cu.m Capacity Water Tower			
KMU/WT-2	Supply and Delivery of DI Pipes and Fittings			
KMU/WT-3	Laying and Installation of DI Pipes and Fittings			
KMU/WT	Total of KMU/WT Grand Summary to Grand Summary of Schedule B			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : KMU/DM GRAND SUMMARY

DISTRIBUTION MAINS IN KOTIKAWATTE AND MULLERIYAWA AREA

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
KMU/DM-1	Supply and Delivery of DI Pipes and Fittings			
KMU/DM-2	Supply and Delivery of PVC Pipes and Fittings			
KMU/DM-3	Supply and Delivery of Valve, Fire Hydrants and Specials			
KMU/DM-4	Laying and Installation of DI Pipes and Specials			
KMU/DM-5	Laying and Installation of PVC Pipes and Specials			
KMU/DM-6	Installation of Valves, Fire Hydrants and Specials			
KMU/DM	Total of KMU/DM Grand Summary to Grand Summary of Schedule B			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : RM/DM-C1 GRAND SUMMARY

REHABILITATION OF EXISTING MAINS

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
RM/DM-1	Scraping and Relining of Pipes			
RM/DM-2	Supply Materials for Scraping and Relining of Pipes			
RM/DM-C1	Total of RM/DM-C1 Grand Summary to Grand Summary of Schedule C			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : RM/DM-C2 GRAND SUMMARY

REINFORCEMENT MAINS, REPLACEMENT OF EXISTING VALVES

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
RM/DM-1 & 2	Refer RM/DM-C1 Rehabilitation of Existing Mains			
RM/DM-3	Supply and Delivery of DI Pipes and Fittings			
RM/DM-4	Supply and Delivery of Valves, Fire Hydrants and Specials			
RM/DM-5	Laying and Installation of DI Pipes and Fittings			
RM/DM-6	Installation of Valves, Fire Hydrants and Specials			
RM/DM-C2	Total of RM/DM-C2 Grand Summary to Grand Summary of Schedule C.			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : RS/DM-D1 GRAND SUMMARY

REHABILITATION OF SMALL DIAMETER PIPE

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
RS/DM-1	Scraping and Relining of Pipes			
RS/DM-2	Supply Materials for Scraping and Relining of Pipes			
RS/DM-D1	Total of RS/DM-D1 Grand Summary to Grand Summary of Schedule D			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : RS/DM-D2 GRAND SUMMARY

REPLACEMENT OF EXISTING MAINS, SERVICE CONNECTIONS AND VALVES

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
RS/DM-1 & 2	Refer RS/DM-D1 Rehabilitation of Small Diameter Pipes			
RS/DM-3	Supply Materials for Scraping and Relining of Pipes			
RS/DM-4	Supply and Delivery of DI Pipes and Fittings			
RS/DM-5	Supply and Delivery of Valves, Fire Hydrants and Specials			
RS/DM-6	Laying and Installation of DI Pipes and Fittings			
RS/DM-7	Laying and Installation of PVC Pipes and Fittings			
RS/DM-8	Installation of Valves, Fire Hydrants and Specials			
RS/DM-D2	Total of RS/DM-D2 Grand Summary to Grand Summary of Schedule D			

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : SUP/EM GRAND SUMMARY

SUPPLY OF EQUIPMENT AND MATERIALS FOR REDUCTION OF NON-REVENUE WATER

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
SUP/EM-1	Supply of Water Meters and Leak Detection Equipment			
SUP/EM	<i>Total of SUP/EM Grand Summary to Grand Summary of Schedule E</i>			

Preliminaries and General Works

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

BILL OF QUANTITIES

BILL NO : G 1 - GENERAL REQUIREMENTS

COMMON WORKS

ITEM No.	ITEM DESCRIPTION	UNIT	QTY	RATE			TOTAL AMOUNT		
				Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts	Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
	<p><i>Allow for all costs and expenses for complying with the General Conditions of Contract and General Requirements in Specifications</i></p> <p><i>(Note: Any services not specifically provided for herein will be deemed to be included in the rates of other items in the BOQ)</i></p>								
G1 - 1	Provide all insurances under the contract as in Conditions of Contract Volume 1	Sum							
G1 - 2	Provide performance bond as per Conditions of Contract Volume 1	Sum							
G1 - 3	Provide all temporary facilities and services for Contractor and removal after completion	Sum							
G1 - 4	Maintenance of all temporary facilities and services for Contractor	Month	60						
G1 - 5	Provide and furnish Engineer's Main Field Office, including furniture, office equipment, toilet facilities and other requirements as specified Volume 2.	Nr	1						
G1 - 6	Maintain the Engineer's Main Field Office including provision of electricity, water, telephone, sweeping, cleaning, security services as specified in Volume 2.	Month	60						
G1 - 7	Provide and furnish Engineer's Field Sub Office, including furniture, office equipment, toilet facilities and other requirements as specified in Volume 2.	Nr	7						
	Total of Page 1 Carried to Bill Summary								

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

BILL OF QUANTITIES

BILL NO : G 1 - GENERAL REQUIREMENTS

COMMON WORKS

ITEM No.	ITEM DESCRIPTION	UNIT	QTY	RATE			TOTAL AMOUNT		
				Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts	Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
G1 - 8	Maintain the Engineer's each Field Sub Office including provision of electricity, water, sweeping, cleaning, security services as specified in Volume 2.	Month	420						
G1 - 9	Provide and maintain Engineer's Mobile Offices, approximately 15 m ² space, complete with sanitation facilities, including furniture and office equipment etc. as specified in Volume 2.	Month	420						
G1 - 10	Provide furnish & maintain the Field Laboratory including provision of electricity, water, gas and other consumables for laboratory, sweeping, cleaning and all other services as specified in Volume 2.	Month	60						
G1 - 11	Provide monthly progress report in duplicate with approximately 30 Nos. of photo prints using a digital camera each month.	Set	60						
G1 - 12	Provide and maintain for the sole use of the Engineer and his staff a digital camera with soft ware, survey instruments, protective clothing and equipment as specified in Volume 2.	Sum							
G1 - 13	Provide all the labour required during the continuance of contract to assist the Engineer and the staff in field activities.	Month	60						
G1 - 14	Allow for measures required for maintenance of traffic flows and accesses making road surfaces mortarable immediately after the pipe laying until the roads are been handed over to Road Authorities.	Sum							
	Total of Page 2 Carried to Bill Summary								

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

BILL OF QUANTITIES

BILL NO : G 1 - GENERAL REQUIREMENTS

COMMON WORKS

ITEM No.	ITEM DESCRIPTION	UNIT	QTY	RATE			TOTAL AMOUNT		
				Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts	Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
G1 - 15	Allow for site clearing & levelling, removal of trees, securing/protecting of existing service poles etc. Removal of any structures or part thereof and make accesses necessary to lay pipes on acquired lands or road shoulders.	Sum							
G1 - 16	Allow for keeping all the sites tidy and clean, and for clearance of the sites to the satisfaction of the Engineer on completion of the contract including delivery of any remaining pipes and fittings and other relevant items to the NWSDB stores as specified.	Sum							
G1 - 17	Provide originals and copies of "As Built Drawings" as per Volume 2	Sum							
G1 - 18	Provide originals and copies of operation and maintenance data manuals as per Volume 2.	Sum							
G1 - 19	Allow for the construction of Name Boards (size 1.2m x 2.4m) to be displayed at offices and sites as depicted in Drawing.	Nr	12						
G1 - 20	Supply of tee-handle keys & extension spindles for valves, lifting keys for manhole covers and surface boxes, 24 Nos each as specified in Volume 2	Set	24						
G1 - 21	Supply, laying and consolidation of river sand at major road crossings where directed by the Engineer as specified in Volume 2 (Provisional Quantity)	m ³	1500						
G1 - 22	Temporary road surface reinstatement at road crossings & other places as specified in Volume 2. (Provisional Quantity)	m ²	600						
Total of Page 3 Carried to Bill Summary							-	-	-

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

BILL OF QUANTITIES

BILL NO : G 1 - GENERAL REQUIREMENTS

COMMON WORKS

ITEM No.	ITEM DESCRIPTION	UNIT	QTY	RATE			TOTAL AMOUNT		
				Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts	Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
G1 - 23	Inspection and testing of materials at Manufacturer's work by Engineer representatives/assistants appointed by the Engineer. (Provisional Sum)	Prov.Sum		600,000.00	5,000,000.00	-	600,000.00	5,000,000	-
G1 - 24	Allow for contractors overheads for above item (.....% of above sum in item G1-23)	Sum							
G1 - 25	Payment to Road Authorities for permanent reinstatement of roads (Provisional sum)	Prov.Sum		154,049,424	-	-	154,049,424.00	-	-
G1 - 26	Allow for the Contractor's overheads for the above item (..... % of the sum in item G1-25)	Sum							
G1 - 27	Provisional sum for the Day Works and contingencies. Dayworks will be paid according to given "Daywork Schedules"	Prov.Sum		35,211,297.00	-	-	35,211,297.00	-	-
G1 - 28	Allow for the Contractor's overheads for the above item (.... % of the sum in item G1-27)	Sum							
G1 - 29	Allow for price escalation (Provisional Amount). Price escalation will be paid according to Clause 70 of Conditions of Contract Part I & II in volume 1. (Provisional Amount)	Sum		44,014,121.00	-	-	44,014,121.00	-	-
G1 - 30	Permanent reinstatement of roads in CMC area. (work should be carriedout by the contractor) Rate should cover the cost for permanent reinstatement of roads with in the CMC area <u>by the contractor</u> , according to the CMC Specification and should be approved by the CMC and it should be handed over to CMC after completion the reinstatement work before certifying the payment to the contractor. (Provisional Quantity)	m ²	47,000						
Total of Page 4 Carried to Bill Summary							233,874,842.00	5,000,000.00	-

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

BILL OF QUANTITIES

BILL NO : G 1 - GENERAL REQUIREMENTS

COMMON WORKS

ITEM No.	ITEM DESCRIPTION	UNIT	QTY	RATE			TOTAL AMOUNT		
				Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts	Local Component Rs./cts	Foreign Component Yen.	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
G1 - 31	Topographic survey with in CMC area Rate to include for surveying, longitudinal section and plan.	km	42						
G1 - 32	Breaking and reinstatement of concrete paved roads (Provisional Quantity)	m ³	750						
Total of Page 5 Carried to Bill Summary									

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER IN THE GREATER COLOMBO AREA

SUMMARY OF BILL OF QUANTITIES

BILL NO : G1 SUM

GENERAL REQUIREMENTS

ITEM No.	PAGE TOTAL	TOTAL AMOUNT		
		Local Component Rs./cts	Foreign Component Yen	Custom Duty, Cess, GST, NSL, Excise Duty etc. Rs./cts
G1	Page 1 of Bill G 1			
	Page 2 of Bill G 1			
	Page 3 of Bill G 1			
	Page 4 of Bill G 1	233,874,842.00	5,000,000.00	-
	Page 5 of Bill G 1			
G1	Total of G1 Summary to G-SUM Grand Summary	233,874,842.00	5,000,000	-

THE PROJECT FOR THE REDUCTION OF NON-REVENUE WATER

BILL OF QUANTITIES FOR CIVIL WORKS

		Page No.
GEN	Preliminaries and General Works	1
SCHEDULE A : CONSTRUCTION AND REHABILITATION OF RESERVOIRS		
MK/OB Maligakanda Office Building		
MK/OB-1	Relocation of Services and Site Works	A - 1
MK/OB-2	Demolition of Old Court Building	A - 5
MK/OB-3	Demolition of Existing Buildings at New Reservoir Site	A - 8
MK/OB-4	Construction of Maligakanda Office Building	A - 21
MK/OB-5	Construction of Generator / Transformer Room	A - 78
MK/GR Maligakanda New Reservoir		
MK/GR-1	Construction of 22,000 m ³ Capacity Ground Reservoir	A - 87
MK/GR-2	Supply and Delivery of DI Pipes and Fittings for Yard Piping	A - 93
MK/GR-3	Construction of New Valve Chamber	A - 106
MK/GR-4	Supply and Delivery of DI Pipes and Fittings for Valve House	A - 117
MK/GR-5	Laying and Installation of DI Pipes and Fittings for Yard Piping	A - 124
MK/GR-6	Laying and Installation of DI Pipes and Fittings for Valve House	A - 137
MK/GR-7	Modification of Existing Chlorination House	A - 143
MK/GR-8	Supply and Delivery of Chlorination Equipment	A - 148
MK/GR-9	Installation of Chlorination Equipment	A - 151
MK/GR-10	Supply and Delivery of Local Control Panel	A - 153
MK/GR-11	Installation of Local Control Panel	A - 155
MK/RF Maligakanda Rehabilitation of the Roof Structure of the Existing Reservoir		
MK/RF-1	Rehabilitation of Roof Structure of Existing Reservoir - Demolition	A - 159
MK/RF-2	Rehabilitation of Roof Structure of Existing Reservoir - Concrete Works	A - 163
MK/RF-3	Rehabilitation of Roof Structure of Existing Reservoir - Intake Structure	A - 168
MK/RF-4	Supply & Delivery of Pipes and Fittings, Installation & Refurbishment of Pipe Work	A - 172
EH/GR Ellie House Reservoir		
EH/GR-1	Ground Reservoir	A - 177
EH/GR-2	Supply and Delivery of Material for Yard Piping	A - 185
EH/GR-3	Construction of New Valve House and Office	A - 202
EH/GR-4	Laying and Installation of Material for Yard Piping	A - 210
EH/GR-5	Supply and Delivery of Chlorination Equipment	A - 227
EH/GR-6	Installation of Chlorination Equipment	A - 230
EH/GR-7	Supply and Delivery of Local Control Panel	A - 232

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EH/GR-8 Installation of Local Control Panel	A - 234
EH/GR-9 Site Works	A - 236
EH/GR-10 Demolition of Existing Reservoir	A - 240

SCHEDULE B : WATER SUPPLY ENHANCEMENT IN KOTIKAWATTE & MULLERIYAWA AREA

KMU/PS Gothatuwa, Kolonnawa Pump House

KMU/PS-1 Construction of Pump House	B - 1
KMU/PS-2 Supply and Delivery of Mechanical Equipment	B - 12
KMU/PS-3 Installation of Mechanical Equipment	B - 18
KMU/PS-4 Supply and Delivery of Pipes and Fittings	B - 20
KMU/PS-5 Laying and Installation of Yard Piping	B - 23
KMU/PS-6 Supply and Delivery of Electrical Equipment	B - 26
KMU/PS-7 Installation of Electrical Equipment	B - 32

KMU/TM Gothatuwa Transmission Main

KMU/TM-1 Supply and Delivery of DI Pipes and Fittings	B - 35
KMU/TM-2 Supply and Delivery of PVC Pipes, Specials and Fittings	B - 43
KMU/TM-3 Supply and Delivery of Valves, Fire Hydrants and Specials	B - 46
KMU/TM-4 Laying and Installation of DI Pipes and Fittings	B - 50
KMU/TM-5 Laying and Installation of PVC Pipes, Specials and Fittings	B - 60
KMU/TM-6 Installation of Valves	B - 63

KMU/GR Gothatuwa Ground Reservoir and Pump House

KMU/GR-1 Site Works	B - 67
KMU/GR-2 Construction of Ground Reservoir and Pump House	B - 71
KMU/GR-3 Supply and Delivery of Materials for Yard Piping	B - 86
KMU/GR-4 Laying and Installation of Yard Piping Materials	B - 98
KMU/GR-5 Supply and Delivery of Mechanical Equipment	B - 110
KMU/GR-6 Supply and Delivery of Electrical Equipment	B - 116
KMU/GR-7 Installation of Mechanical Equipment	B - 123
KMU/GR-8 Installation of Electrical Equipment	B - 125

KMU/WT Gothatuwa New Water Tower

KMU/WT-1 Construction of 1500 m ³ Capacity Water Tower	B - 127
KMU/WT-2 Supply and Delivery of DI Pipes and Fittings	B - 134
KMU/WT-3 Laying and Installation of DI Pipes and Fittings	B - 140

KMU/DM Distribution Mains in Kotikawatte and Mulleriyawa Area

KMU/DM-1 Supply and Delivery of DI Pipes and Fittings	B - 147
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KMU/DM-3 Supply and Delivery of Valves, Fire Hydrants and Specials	B - 167
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KMU/DM-5 Laying and Installation of PVC Pipes and Fittings	B - 186
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SCHEDULE C : REHABILITATION/REINFORCEMENT OF MEDIUM & LARGE DIAMETER PIPE NETWORK IN CMC AREA

RM/DM-C1 Rehabilitation of Existing Mains

RM/DM-1 Scraping and Lining of Pipe Network in CMC Area	C - 1
RM/DM-2 Supply Materials for Scraping and Relining of Pipes in CMC Area	C - 19

RM/DM-C2 Reinforcement Mains, Replacement of Existing Valves

RM/DM-3 Supply and Delivery of DI Pipes and Fittings	C - 23
RM/DM-4 Supply and Delivery of Valves, Fire Hydrants and Specials	C - 37
RM/DM-5 Laying and Installation of DI Pipes and Specials	C - 42
RM/DM-6 Installation of Valves, Fire Hydrants and Specials	C - 57

SCHEDULE D : REHABILITATION/REPLACEMENT OF SMALL DIAMETER PIPE NETWORK IN CB1 AREA

RS/DM-D1 Rehabilitation of Small Diameter Pipes

RS/DM-1 Scraping and Relining of Pipe Network in CB1 Area	D - 1
RS/DM-2 Supply Pipes, Specials and Valves for Rehabilitation of Pipe Network	D - 11

RS/DM-D2 Replacement of Existing Mains, Service Connections and Valves

RS/DM-3 Supply and Delivery of DI Pipes and Fittings	D - 20
RS/DM-4 Supply and Delivery of PVC Pipes and Fittings	D - 26
RS/DM-5 Supply and Delivery of Valves, Fire Hydrants and Specials	D - 34
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RS/DM-7 Laying and Installation of PVC Pipes and Fittings	D - 45
RS/DM-8 Installation of Valves, Fire Hydrants, Waste Meters, etc	D - 55

SCHEDULE E : SUPPLY OF EQUIPMENT AND MATERIALS FOR REDUCTION OF NON-REVENUE

WATER

SUP/EM-1 Supply of Water Meters and Leak Detection Equipment	E - 1
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