



**Kenya Marine Fisheries Socioeconomic
Development Project (KEMFSED)
P.O. Box 58187-00200
NAIROBI**



**MINISTRY OF MINING, BLUE ECONOMY AND MARITIME
AFFAIRS**

Request for Bids

CONSTRUCTION OF MOKOWE FISH LANDING SITE

Employer: State Department for Blue Economy & Fisheries
Project: Kenya Marine Fisheries Socio-Economic
Development Project (KEMFSED)
Contract Title: **CONSTRUCTION OF MOKOWE FISH
LANDING SITE**
Country: Republic of Kenya
Loan No./Credit No./Grant No.: 6540-KE
RFBNo.: KE-MOMBE&MA-LM-2024-010-CW
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VOLUME 2 OF 4

BILLS OF QUANTITIES

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A. PREAMBLE

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions, Technical Specifications, and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
3. The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
6. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
7. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clauses 13.4 and 13.5 of the General Conditions except with respect to DAAB Fees and Expenses for which no instruction will be required from the Engineer.
8. The method of measurement of completed work for payment shall be Admeasurement in accordance with ICE Conditions of Contract measurement clauses.¹

¹ The method of measurement should be spelled out precisely in the Preamble to the Bill of Quantities, describing for example the allowances (if any) for timbering in excavation, etc. Many national standard reference guides have been prepared on the subject, and one such guide is the Standard Method of Measurement of the U.K. Institution of Civil Engineers.

B. WORK ITEMS

1. The Bill of Quantities contains the following part Bills, which have been grouped according to the nature or timing of the work:
 1. **BILL NO. 1: PARTICULAR PRELIMINARIES**
 2. **BILL NO. 2 : GENERAL PRELIMINARIES**
 3. **BILL NO. 3: ENVIRONMENTAL SOCIAL MANAGEMENT PLAN**
 4. **BILL NO. 4 : FISH PROCESSING BUILDING**
 5. **BILL NO. 5 : ABLUTION BLOCK**
 6. **BILL NO. 6: GATE HOUSE**
 7. **BILL NO. 7: BOUNDARY WALL**
 8. **BILL NO. 8: LAND RECLAMATION AND JETTY**
 9. **BILL NO. 9: POWER HOUSE**
 10. **BILL NO. 10: DRIVEWAY AND PARKING**
 11. **BILL NO. 11: UNDERGROUND WATER TANK**
 12. **BILL NO. 12: LANDSCAPING**
 13. **BILL NO. 13: MECHANICAL WORKS**
 14. **BILL NO. 14: ELECTRICAL WORKS**
 15. **BILL NO. 15: PUMP ROOM**
 16. **BILL NO. 16: POWER HOUSE**
 17. **BILL NO. 17: DAYWORKS**
2. Bidders shall price the Bill of Quantities in local currency only and shall indicate in the Appendix to Bid the percentage expected for payment in foreign currency or currencies.

DAYWORK SCHEDULE

General

1. Reference should be made to Sub-Clause 13.5 of the General Conditions. Work shall not be executed on a daywork basis except by written order of the Engineer. Bidders shall enter basic rates for daywork items in the Schedules, which rates shall apply to any quantity of daywork ordered by the Engineer. Nominal quantities have been indicated against each item of daywork, and the extended total for Daywork shall be carried forward as a Provisional Sum to the Summary Total Bid Amount. Unless otherwise adjusted, payments for daywork shall be subject to price adjustment in accordance with the provisions in the Conditions of Contract.

Daywork Labour

2. In calculating payments due to the Contractor for the execution of daywork, the hours for labour will be reckoned from the time of arrival of the labour at the job site to execute the particular item of daywork to the time of return to the original place of departure, but excluding meal breaks and rest periods. 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 work with the gangs will also be measured but not the time of foremen or other supervisory personnel.
3. The Contractor shall be entitled to payment in respect of the total time that labour is employed on daywork, calculated at the basic rates entered by the Contractor in the Schedule of Daywork Rates:
 1. Labour, together with an additional percentage payment on basic rates representing the Contractor's profit, overheads, etc., as described below:
 - a) The basic rates for labour shall cover all direct costs to the Contractor, including (but not limited to) 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 [country of Borrower]Kenya law. The basic rates will be payable in local currency only.
 - b) The additional percentage payment to be quoted by the bidder and applied to costs incurred under (a) above shall be deemed to cover the Contractor's profit, overheads, superintendence, liabilities, and insurances and allowances to labour, timekeeping, and clerical and office work, the use of consumable stores, water, lighting, and power; the use and repair of stagings, scaffolding, workshops, and stores, portable power tools, manual plant, and tools; supervision by the Contractor's staff, foremen, and other supervisory personnel; and charges incidental to the foregoing. Payments under this item shall be made in local currency.

Daywork Materials

4. The Contractor shall be entitled to payment in respect of materials used for daywork (except for materials for which the cost is included in the percentage addition to labour costs as detailed heretofore), at the basic rates entered by the Contractor in the Schedule of Daywork Rates: 2. Materials, together with an additional percentage payment on the basic rates to cover overhead charges and profit, as follows:
 - a) the basic rates for materials shall be calculated on the basis of the invoiced price, freight, insurance, handling expenses, damage, losses, etc., and shall provide for delivery to store for stockpiling at the Site. The basic rates shall be stated in local currency, but payment will be made in the currency or currencies expended upon presentation of supporting documentation.
 - b) the additional percentage payment shall be quoted by the bidder and applied to the equivalent local currency payments made under (a) above. Payments under this item will be made in local currency.
 - c) the cost of hauling materials for use on work ordered to be carried out as daywork from the store or stockpile on the Site to the place where it is to be used will be paid in accordance with the terms for Labour and Construction in this schedule.

Daywork Contractor's Equipment

5. The Contractor shall be entitled to payments in respect of Contractor's Equipment already on Site and employed on daywork at the basic rental rates entered by the Contractor in the Schedule of Daywork Rates: **3. Contractor's Equipment.** Said rates shall be deemed to include due and complete allowance for depreciation, interest, indemnity, and insurance, repairs, maintenance, supplies, fuel, lubricants, and other consumables, the cost of drivers, operators, and assistants and all overhead, profit, and administrative costs related to the use of such equipment.
6. In calculating the payment due to the Contractor for Contractor's Equipment 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 Contractor's Equipment was located when ordered by the Engineer to be employed on daywork and the time for return journey thereto shall be included for payment.
7. The basic rental rates for Contractor's Equipment employed on daywork shall be stated in local currency, but payments to the Contractor will be made in local currency.

VOLUME 2: BILLS OF QUANTITIES

PARTICULAR PRELIMINARIES

BILL NO.1

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
	<i>(All rates are V.A.T Inclusive)</i> <u>PARTICULAR PRELIMINARIES</u>	
1.1.1	EMPLOYER The Employer is Ministry of Mining, Blue Economy and Maritime Affairs P.O Box 30009-00100 Nairobi, Kenya The term "Employer" and "Ministry of Mining, Blue Economy and Maritime Affairs" wherever used in the contract document shall be synonymous.	
1.1.2	PROJECT MANAGER The term "PM" wherever used in these Bills of Quantities shall be deemed to imply the project Manager as defined in the Conditions of Contract or such person or persons as may be duly authorised to represent him/her on behalf of the employer.	
1.1.2	ARCHITECT The term "Architect" shall be deemed to mean "The P.M " as defined above whose address unless otherwise notified is Project Engineer	
1.1.3	QUANTITY SURVEYOR The term "Quantity Surveyor" shall be deemed to mean "The P.M " as defined above whose address unless otherwise notified is Project Engineer	
1.1.4	ELECTRICAL ENGINEER The term "Electrical Engineer" shall be deemed to mean "The P.M " as defined above whose address unless otherwise notified is Project Engineer	
1.1.5	MECHANICAL ENGINEER The term "Mechanical Engineer" shall be deemed to mean "The P.M " as defined above whose address unless otherwise notified is Project Engineer	
1.1.6	STRUCTURAL ENGINEER The term "Structural Engineer" shall be deemed to mean "The P.M " as defined above whose address unless otherwise notified is Project Engineer	
1.1.7	PROJECT ENGINEER (PE) (Member of NPCU, State Department of Fisheries) The term "Project Engineer" shall be deemed to mean "The ENGINEER " as defined above whose address unless otherwise notified is National Project Coordination Unit (NPCU), State Department of Fisheries. P.O. Box 58187-00200 NAIROBI	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
1.1.8	LOCATION OF SITE The site of the proposed works is at Mukowe fish landing site in Lamu County. The Contractor is advised to visit the site, to familiarize with the nature and position of the site. No claims arising from the Contractor's failure to do so will be entertained.	
1.1.9	DESCRIPTION OF THE WORKS The works to be carried out under this contract is the construction of Mukowe Fish Landing site in Lamu County. The project consists of the following: 1. Excavation & Earthworks including fillings 2. Waterproofing. 3. Concrete works 4. Reinforcement 5. Formwork. 6. Walling. 7. Roofing. 8. Doors 9. Windows 10. Fittings. 11. Finishes. 12. Civil Works 13. Electrical works. 14. Mechanical works	
1.1.10	FORM OF CONTRACT The Form of Contract shall be as stipulated in the World Bank's Standard Procurement Document for Small Works(March 2021 Edition) included herein The Conditions of Contract are also included herein Particulars of insertions to be made in the Appendix to the Contract Agreement will be found in the Particular Preliminaries part of these Bills of Quantities	
1.1.11	BID BOND A bid bond shall be required in the amount stated in the invitation to tender or advertisement. Bid bond shall be from EITHER an insurance or bank.	
1.1.12	CLEARING AWAY The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate and upon completion of the works, remove and clear away all plant, equipment, rubbish, unused materials and stains and leave in a clean and tidy state to the reasonable satisfaction of the Project Manager. The whole of the works shall be delivered up clean, complete and in perfect condition in every respect to the satisfaction of the Project Manager.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
1.1.13	WORKING CONDITIONS The Contractor shall allow in his rates for any interference that he may encounter in the course of the works for the Client may in some cases ask the Contractor not to proceed with the works until some activities within the site are completed, as the facility will be operating as usual during the course of the contract. The contractor must allow for compliance with all County & Statutory Authorities' laws & regulations.	
1.1.14	CLAIMS It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and / or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such a claim or intent to claim notice to the PROJECT MANAGER within the contract period. No claim shall be entertained upon the expiry of the said contract period.	
1.1.15	LABOUR CAMPS The Contractor shall not be allowed to house labour on site. Allow for transporting workers to and from the site during the tenure of the contract.	
1.1.16	PRICING RATES The tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items for which no rate or price is entered by the tenderer will not be paid for when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, all to comply with the said Conditions of Contract. Prices quoted should be net inclusive of all taxes, must be in Kenya shillings Prices shall remain valid for One Hundred and twenty (120) days from the closing date of tender. The rates and prices quoted by the tenderer shall only be subject to adjustment during the performance of the Contract if provided for in the Appendix to Conditions of Contract and provisions made in the Conditions of Contract.	
1.1.17	MATERIALS FROM DEMOLITIONS Any materials arising from demolitions SHALL NOT BE re-used shall become the property of the client unless otherwise advised.	
1.1.18	URGENCY OF THE WORKS The Contractor is notified that these “ works are urgent ” and should be completed within the period stated in these Particular Preliminaries. The Contractor shall allow in his rates for any costs he/ she deems that he/she may incur by having to complete these works within the stipulated contract period.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
1.1.19	PAYMENTS GENERALLY The tenderer's attention is drawn to the fact that the CLIENT WILL NOT MAKE ADVANCE PAYMENTS but pays for work done and materials delivered to sit: all in accordance with the Conditions of Contract Agreement. In order to facilitate this, a list of the general component elements for the works is given at the summary page of these specifications and the tenderer is requested to break down his tender sum commensurate to the said elements. The contractor is advised to deliver & concur on his claim for payment with the PM before the following site visit to enable approval of the same by the Acceptance & Approval Committee. The claim shall be prepared in the same format as these bills clearly showing quantities & rates (both work & materials). Both the PM & contractor should be able to locate & identify the items claimed from the main bill.	
1.1.20	PAYMENT FOR MATERIALS ON SITE All materials for incorporation in the works must be stored on site before payment is effected, unless specifically exempted by the Project Manager. This is to include materials of the Contractor, nominated sub-Contractors and nominated suppliers.	
1.1.21	ADVANCE PAYMENTS The tenderer's attention is drawn to the fact that the Client does not make any advance payments	
1.1.22	EXISTING SERVICES Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and he/she shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services.	
1.1.23	TENDER DOCUMENTS Tender documents are as listed in Clause 2.1 of the Instruction to Tenderer's Page 8	
1.1.24	DELIVERY OF TENDER Tenders and all documents in connection therewith, as specified above must be delivered in the addressed envelope which should be properly sealed and deposited at the offices as specified in the letter accompanying these documents or as indicated in the advertisement. Tenders will be opened at the time specified in the letter accompanying these Tender Documents or as indicated in the advertisement. Tenders delivered/received later than the above time will not be opened.	
1.1.26	SIGNING OF THE TENDER DOCUMENTS The bidder shall append his / her signature and / or company's rubberstamp on each and every page of tender document.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
1.1.27	<p>MEASUREMENTS</p> <p>In the event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract documents shall immediately be referred to the PROJECT MANAGER in accordance with Clause 22 of the Conditions of Contract. The discrepancies shall then be treated as a variation and be dealt with in accordance with Clause 22 of the said Conditions</p>	
1.1.28	<p>VALUE ADDED TAX</p> <p>The Contractor's attention is drawn to the Legal Notice in the Finance Act part 3 Section 21(b) operative from 1st September, 1993 which requires payment of VAT on all contracts. The Contractor should therefore include allowance in his rates and prices for prices for VAT and any other Government taxes currently in force. NB: The Contractor should therefore include the tax within the rates.</p>	
1.1.29	<p>CONTRACT COMPLETION PERIOD</p> <p>The contract completion period in accordance with conditions of the Conditions of contract must be adhered to.</p> <p>The 'PROJECT MANAGER' shall strictly monitor the Contractors progress in relation to the progress chart and should it be found necessary the 'PROJECT MANAGER' shall inform the Contractor in writing that his actual performance on site is not satisfactory. In all such cases the Contractor shall accelerate his rate of performance production and progress by all means such as additional labour, plant, e.t.c and working overtime all at his cost.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
1.1.30	<p><u>PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT</u></p> <p>The following are the insertions to be made in the appendix to the Contract Agreement: -</p> <p>Period of Final Measurement - 3 Months From Practical completion</p> <p>Defects Liability Period - 6 Months from Practical completion</p> <p>Date for Possession - To be agreed with the Project Manager</p> <p>Date for Completion - 52 Weeks from date of Possession</p> <p>Liquidated and Ascertained -0.04 % of the Accepted Contract Amount, less provisional sum</p> <p>Period of Interim Certificates - Monthly</p> <p>Period of Honouring Certificates - 56 days</p> <p>Percentage of Certified Value Retained - 10%</p> <p>Limit of Retention Fund - 5%</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (K.SHS)
	<p align="center"><u>COLLECTION</u></p> <p align="center">Brought forward from page PP/1</p> <p align="center">Brought forward from page PP/2</p> <p align="center">Brought forward from page PP/3</p> <p align="center">Brought forward from page PP/4</p> <p align="center">Brought forward from page PP/5</p> <p align="center">Brought forward from page PP/6</p>	
	TOTAL FOR PARTICULAR PRELIMINARIES CARRIED TO GRAND SUMMARY	

GENERAL PRELIMINARIES

BILL NO.2

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
	<i>(All rates are V.A.T Inclusive)</i> <u>GENERAL PRELIMINARIES</u>	
2.1.1	<p>PRICING OF ITEMS OF PRELIMINARIES AND PREAMBLES</p> <p>Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specification.</p> <p>The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract.</p> <p>Failure to price an item shall not exempt the contractor from carrying out works described therein. Should the contractor fail to carry out works which he/she did not price and after having received a written instruction from the PM, then the value of such works shall be deducted from the very immediate certificate issued to the contractor.</p> <p>MoPW current rates, JBC, IQSK, manufacturers or fair rates shall be used by the PM in valuation of unpriced items which the contractor shall fail to execute.</p> <p>The contractor is advised to read and understand all preliminary items.</p> <p>The Contractor is advised to visit the site, to familiarize with the nature and position of the site. No claims arising from the Contractor's failure to do so will be entertained.</p>	
2.1.2	<p>VISIT SITE AND EXAMINE DRAWINGS</p> <p>The Contractor is recommended to examine the drawings and visit the site the location of which is described in the Particular Preliminaries hereof. He shall be deemed to have acquainted himself therewith as to its nature, position, means of access or any other matter which, may affect his tender. No claim arising from his failure to comply with this recommendation will be considered.</p>	
2.1.3	<p>SUFFICIENCY OF TENDER</p> <p>The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of this tender for the works and of the rates and prices stated in the Priced Bills of Quantities, which rates and prices shall cover all his obligations under the Contract and all matters that are necessary for the proper completion and maintenance of the works.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.4	<p>BONDS</p> <p>The Contractor shall find and submit with the Form of Tender a guarantor and who will be willing to be bound the Government in the amount of the bond. The amount of the bond is SPECIFIED IN THE PARTICULAR PRELIMINARIES. The guarantor shall be an approved institution as specified in the particular preliminaries or invitation to tender and who will when and if called upon, sign a Bond to that effect on the relevant standard form included herein. (without the addition of any limitations) on the same day as the Contract Agreement is signed, by the Government, the Contractor shall furnish within seven days another Surety to the approval of the Government.</p>	
2.1.5	<p>PERFORMANCE BOND</p> <p>10% bond shall be required from the specified institution.</p> <p>The period for supplying the bond shall be 14 days.</p> <p>No contract shall be signed, NOR shall any payment be made before the bidder has complied with the bond requirements</p> <p>Failure to deliver the bond within the specified period shall automatically disqualify the bidder and the tender shall be awarded to next most responsive bidder without reference to the defaulting bidder.</p> <p>Should the bidder commence works and subsequently fail to provide the bond, he shall be evicted from site without any reimbursement notwithstanding the site having been handed over by the PM and client. The handing over only kick-starts the process and is not a waiver to bond conditions.</p> <p>The bond for the due performances of the Contract shall be valid up to the date of completion as certified by the PROJECT MANAGER.</p> <p>Any bond which provides otherwise or attempts to vary the duration of validity shall be invalid.</p> <p>The bond shall comply in all respects with the PPOA copy enclosed in the instructions to tender. A bond that does not match the PPOA copy shall be rejected.</p>	
2.1.6	<p>EXCEPTION TO THE STANDARD METHOD OF MEASUREMENT</p> <p>Attendance ; Clause B19(a) of the Standard Method of Measurement is deleted and the following clause is substituted:-</p> <p>Attendance on nominated Sub-Contractors shall be given as an item in each case shall be deemed to include: allowing use of standing scaffolding, mess rooms, sanitary accommodation and welfare facilities; provision of special scaffolding where necessary; providing space for office accommodation and for storage of plant and materials; providing light and water for their work; clearing away rubbish; unloading checking and hoisting; providing electric power and removing and replacing duct covers, pipe casings and the like necessary for the execution and testing of Sub- Contractors' work and being responsible for the accuracy of the same.</p> <p>Fix Only:-</p> <p>"Fix Only" shall mean take delivery at nearest railway station (Unless otherwise stated), pay all demurrage charges, load and transport to site where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.7	<p>Throughout these Bills, units of measurement and terms are abbreviated and</p> <p>C.M. Shall mean cubic metre</p> <p>S.M. Shall mean square metre</p> <p>L.M. Shall mean linear metre</p> <p>MM Shall mean Millimetre</p> <p>Kg. Shall mean Kilogramme</p> <p>No. Shall mean Number</p> <p>Prs. Shall mean Pairs</p> <p>B.S. Shall mean the British Standard Specification Published by the British Standards Institution, 2 Park Street, London W.I., England.</p> <p>"K.S" Shall mean the current Kenya Standard specification published by the Kenya Bureau of Standards, P.O. Box 54974, NAIROBI, Kenya.</p> <p>Ditto Shall mean the whole of the preceding description except as qualified in the description in which it occurs.</p> <p>m.s. Shall mean measured separately.</p> <p>a.b.d Shall mean as before described.</p> <p>"Approved" Shall mean approved by the Project Manager and the Employer in writing.</p> <p>"As directed" Shall mean as directed by the Project Manager and the Employer in writing.</p> <p>"Demolish" Shall be deemed to mean cutting away, breaking up, demolishing, pulling down, taking down, removing, etc., as the context requires and shall include in all cases temporarily strutting and supporting and making good remaining work as necessary, and clearing away and removing from Site all debris, etc.</p> <p>"Remove" Shall mean taking down, hacking up, breaking down, removing etc., and clearing away from Site and all other expenses thereby entailed.</p> <p>"Make good" Shall be deemed to mean all making good, fitting, facing up, plastering, paving, repairing and painting to match and jointing to remaining existing work.</p> <p>To "match" Shall mean to be equal to relevant existing work in design, workmanship and all other respects.</p> <p>"Re-fix" Shall apply to existing materials arising from the Works and shall mean take from store and fix in new position, including making good, repairing and adjusting as necessary.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.8	PLANT, TOOLS AND VEHICLES Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.	
2.1.9	TRANSPORT. Allow for transport of workmen, materials, etc., to and from the site at such hours and by such routes as may be permitted by the competent authorities.	
2.1.10	MATERIALS AND WORKMANSHIP. All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are onsite when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.	
2.1.11	SIGN FOR MATERIALS SUPPLIED. The Contractor will be required to sign a receipt for all articles and materials supplied by the PROJECT MANAGER at the time of taking deliver thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and for replacements of any such loss or damage with articles and/or materials which will be supplied by the PROJECT MANAGER at the current market prices including Customs Duty and V.A.T., all at the Contractor's own cost and expense, to the satisfaction of the PROJECT MANAGER	
2.1.12	STORAGE OF MATERIALS The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the PROJECT MANAGER Nominated Sub-Contractors are to be made liable for the cost of any storage accommodation provided especially for their use.	
2.1.13	ORDERING OF MATERIALS The Contractor must assist in alleviating the effects of possible shortages of materials by advance ordering of materials in order to maintain a continuous supply. Early delivery of materials will be permitted and included in interim certificates and upon request by the Project Manager, the Contractor will be required to produce copies of order forms and invoices to establish that materials have been ordered in sufficient time and to check on material deliveries.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.14	<p>SAMPLES</p> <p>The Contractor shall furnish at his own cost any samples of materials or workmanship required for the works that may be called for by the PROJECT MANAGER for his approval until such samples are approved by the PROJECT MANAGER and the PROJECT MANAGER, may reject any materials or workmanship not in his opinion to be up to approved samples. The PROJECT MANAGER shall arrange for the testing of such materials as he may at his discretion deem desirable, but the testing shall be made at the expense of the Contractor and not at the expense of the PROJECT MANAGER. The Contractor shall pay for the testing in accordance with the current scale of testing charges laid down by the Ministry of Public Works.</p> <p>The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the PROJECT MANAGER The Contractor shall allow in his tender for such samples and tests except those in connection with nominated sub-contractors' work.</p> <p>Samples of paint, carpets, curtains & covers, tiles & timber shall be required for approval by the PM together with the employer.</p> <p>No alternate rate shall be offered on account that the employer has chosen a superior finish unless the bidder had attached the sample he priced.</p>	
2.1.15	<p>PUBLIC AND PRIVATE ROADS.</p> <p>Maintain as required throughout the execution of the works and make good any damage to public or private roads arising from or consequent upon the execution of the works to the satisfaction of the local and other competent authority and the PROJECT MANAGER.</p>	
2.1.16	<p>EXISTING PROPERTY.</p> <p>The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the PROJECT MANAGER.</p>	
2.1.17	<p>ACCESS TO SITE AND TEMPORARY ROADS.</p> <p>Means of access to the Site shall be agreed with the PROJECT MANAGER prior to commencement of the work and Contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Site. Upon completion of the works, the Contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the PROJECT MANAGER.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.18	AREA TO BE OCCUPIED BY THE CONTRACTOR The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the PROJECT MANAGER.	
2.1.19	SECURITY OF WORKS ETC. The Contractor shall be entirely responsible for the security of all the works stores, materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public.	
2.1.20	PROGRESS CHART. The Contractor shall provide within two weeks of Possession of Site and in agreement with the PROJECT MANAGER a Progress Chart for the whole of the works including the works of Nominated Sub-Contractors ; one copy to be handed to the PROJECT MANAGER and a further copy to be retained on Site. Progress to be recorded and chart to be amended as necessary as the work proceeds.	
2.1.21	INSURANCE The Contractor shall insure as required in Conditions No 30 of the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the PROJECT MANAGER either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the PROJECT MANAGER shall from time to time ascertain that premiums are duly paid up by the Contractor who shall if called upon to do so, produce the receipted premium renewals for the PROJECT MANAGER's inspection.	
2.1.22	CONTRACTOR'S SUPERINTENDENCE/SITE AGENT The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.23	<p>PROVISIONAL WORK</p> <p>All work described as "Provisional" in these Bills of Quantities is subject to remeasurement in order to ascertain the actual quantity executed for which payment will be made. All "Provisional" and other work liable to adjustment under this Contract shall left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the PROJECT MANAGER Immediately the work is ready for measuring, the Contractor shall give notice to the PROJECT MANAGER. If the Contractor makes default in these respects he shall if the PROJECT MANAGER so directs uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense.</p>	
2.1.24	<p>PROVISIONAL SUMS.</p> <p>The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurement. Such sums are net and no addition shall be made to them for profit.</p>	
2.1.25	<p>ADJUSTMENT OF PROVISIONAL SUMS.</p> <p>In the final account all PROVISIONAL SUMS shall be deducted and the value of the work properly executed in respect of them upon the PROJECT MANAGER's order added to the Contract Sum. Such work shall be valued , but should any part of the work be executed by a Nominated Sub-Contractor, the value of such work or articles for the work to be supplied by a Nominated Supplier, the value of such work or articles shall be treated as a P.C. Sum and profit and attendance comparable to that contained in the priced Bills of Quantities for similar items added.</p>	
2.1.26	<p>PRIME COST (OR P.C.) SUMS.</p> <p>The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement . Persons or firms nominated by the PROJECT MANAGER to execute work or to provide and fix materials or goods are described herein as Nominated Sub Contractors. Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.27	<p>ADJUSTMENT OF P.C. SUMS.</p> <p>In the final account all P.C. Sums shall be deducted and the amount properly expended upon the PROJECT MANAGER'S order in respect of each of them added to the Contract sum. The Contractor shall produce to the PROJECT MANAGER such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C. Sums shall be adjusted pro-rata to the physical extent of the work executed (not pro-rata to the amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them. Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-Contractor.</p>	
2.1.28	<p>NOMINATED SUB-CONTRACTORS</p> <p>When any work is ordered by the PROJECT MANAGER to be executed by nominated sub-contractors, the Contractor shall enter into sub-contracts and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described the Contractor is to provide for such Sub-Contractors any or all of the facilities described in these Preliminaries. The Contractor should price for these with the nominated Sub contract Contractor's work concerned in the P.C. Sums under the description "add for Attendance".</p>	
2.1.29	<p>DIRECT CONTRACTS</p> <p>Notwithstanding the foregoing conditions, the Client reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In any such instances, profit relative to the P.C. Sum the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.</p>	
2.1.30	<p>ATTENDANCE UPON OTHER TRADESMEN, ETC.</p> <p>The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this Contract every facility for carrying out their work and also for use of his ordinary scaffolding. The Contractor, however, shall not be required to erect any special scaffolding for them. The Contractor shall perform such cutting away for and making good after the work of such tradesmen or persons as may be ordered by the PROJECT MANAGER and the work will be measured and paid for to the extent executed at rates provided in these Bills.</p>	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.31	OFFICE ETC. FOR THE PROJECT MANAGER The Contractor shall provide, erect and maintain where directed on site a properly ventilated lockable office for the consultants, having a minimum floor area of 100 Square Metres complete with furniture (Tables, chairs e.t.c). Provision shall be made for artificial lighting and cleaning facilities for the duration of the works. Upon completion the Contractor shall dismantle and clear away the office. He shall also provide a strong metal trunk complete with strong hasp and staple fastening and two keys. He shall provide, erect and maintain a lock-up type water or bucket closet for the sole use of the PROJECT MANAGER including making temporary connections to the drain where applicable to the satisfaction of Government and Medical Officer of Health and shall provide services of cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surfaces. The office and closet shall be completed before the Contractor is permitted to commence the works. The Contractor shall make available on the Site as and when required by the "PROJECT MANAGER" a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic or linen tape.	
2.1.32	WATER AND ELECTRICITY SUPPLY FOR THE WORKS The Contractor shall provide at his own risk and cost all necessary water, electric lighting and power required for use in the works. The Contractor must make his own arrangements for connection to the nearest suitable water main and for metering the water used. He must also provide temporary tanks and meters as required at his own cost and clear away when no longer required and make good on completion to the entire satisfaction of the PROJECT MANAGER . The Contractor shall pay all charges in connection herewith. No guarantee is given or implied that sufficient water will be available from mains and the Contractor must make his own arrangements for augmenting this supply at his own cost. Nominated Sub--contractors are to be made liable for the cost of any water or electric current used and for any installation provided especially for their own use.	
2.1.33	SANITATION OF THE WORKS The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the PROJECT MANAGER.	
2.1.34	SUPERVISION AND WORKING HOURS The works shall be executed under the direction and to the entire satisfaction in all respects of the PROJECT MANAGER who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.35	PROTECTION OF THE WORKS. Provide protection of the whole of the works contained in the Bills of Quantities, existing property, finishes, workmen employed on the site, employer's agents and the public; including casing , casing up, covering or such other means as may be necessary to avoid damage to the satisfaction of the PROJECT MANAGER and remove such protection when no longer required and make good any damage which may nevertheless have been done at completion free of cost to the Client. Any damage or loss incurred due to the insufficiency of such protection must be made good by the Contractor	
2.1.36	WORKS TO BE DELIVERED UP CLEAN Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings, glass inside and outside and any other parts of the works and remove all marks, blemishes, stains and defects from joinery, fittings and decorated surfaces generally, polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the PROJECT MANAGER.	
2.1.37	GENERAL SPECIFICATION. For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works and Housing General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities.	
2.1.38	TRAINING LEVY The Contractor's attention is drawn to the legal notice which requires payment by the Contractor of a Training Levy at the rate of 1/4 % of the Contract sum on all contracts of more than KShs. 50,000.00 in value.	
2.1.38	MATERIALS ON SITE All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the PROJECT MANAGER. This includes the materials of the Main Contractor, Nominated Sub-Contractors and Nominated Suppliers.	
2.1.39	HOARDING The Contractor shall enclose the site or part of the works under construction with a hoarding 2400 mm high consisting of iron sheets on 100 x 50 mm timber posts firmly secured at 1800 mm centres with two 75 x 50 mm timber rails. The Contractor is in addition required to take all precautions necessary for the safe custody of the works, materials, plant, public and Employer's property on the site.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.40	ALTERATIONS TO BILLS, PRICING, ETC. Any unauthorised alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The Contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the priced Bills of Quantities. All items of measured work shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted.	
2.1.41	MATERIALS ARISING FROM EXCAVATIONS Materials of any kind obtained from the excavations shall be the property of the client. Unless the PROJECT MANAGER directs otherwise such materials shall be dealt with as provided in the Contract. Such materials shall only be used in the works, in substitution of materials which the Contractor would otherwise have had to supply with the written permission of the PROJECT MANAGER. Should such permission be given, the Contractor shall make due allowance for the value of the materials so used at a price to be agreed.	
2.1.42	PREVENTION OF ACCIDENT, DAMAGE OR LOSS The Contractor is notified that these works are to be carried out on a restricted site where the client is going on with other normal activities. The Contractor is thus instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of activities being carried out by the Client. The Contractor shall allow in his rates any expense he deemed necessary by taking such care within the site.	
2.1.43	GOVERNMENT ACTS REGARDING WORK, PEOPLE ETC. Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the Contractor's attention is drawn to the provisions of the Factory Act 1950 and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurances, pensions and holidays for workpeople or so the safety, health and welfare of the workpeople. The Contractor must make himself fully acquainted with current Acts and Regulations, including Police Regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc. It is most important that the Contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the organisation of the works, supply and control of labour, etc., and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained.	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
2.1.44	BLASTING OPERATIONS Blasting will only be allowed with the express permission of the PROJECT MANAGER in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost in accordance with any Government regulations in force for the time being, and any special regulations laid down by the PROJECT MANAGER governing the use and storage of explosives.	
2.1.45	SIGNBOARD Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away a signboard as designed, specified and approved by the Project Manager.	
2.1.46	NUISANCE The Contractor must take such steps and exercise such care and diligence so as to minimize nuisance from dust, noise or any other cause, to the occupiers of adjacent properties	
2.1.47	PROTECTION OF TREES The Contractor shall in the course of construction take all necessary precautions to preserve any existing trees. The contractor will not cut down any tree(s) without express authority or written instruction by the Project Manager and relevant authorities. He must at all times liaise with the Project Manager in this regard. The cost of obtaining any necessary permits will be borne by the Contractor.	
2.1.48	EXTENDED PRELIMINARIES In case the Contractor suffers costs due to extended preliminaries as a result of excusable delays. Then the Employer shall compensate the Contractor the ACTUAL COST of such extended preliminaries plus 10% administrative costs. Such costs will be proven with payment receipts, payroll etc. No further claims shall be allowed with respect to the same.	
2.1.49	TIMELY PAYMENT FOR LABOURERS The Contractor shall ensure that his workers are paid their wages promptly and on time. If such payments are effected weekly the Contractor shall ensure that workers are paid on the appointed day to avoid any disruption of work occasioned by the failure of the Contractor to pay workers on time and shall be required to furnish proof to that effect,	
	<i>Carried to collection</i>	

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	AMOUNT (KSHS)
	<p align="center">COLLECTION</p> <p align="center">Brought Forward From Page GP/1</p> <p align="center">Brought Forward From Page GP/2</p> <p align="center">Brought Forward From Page GP/3</p> <p align="center">Brought Forward From Page GP/4</p> <p align="center">Brought Forward From Page GP/5</p> <p align="center">Brought Forward From Page GP/6</p> <p align="center">Brought Forward From Page GP/7</p> <p align="center">Brought Forward From Page GP/8</p> <p align="center">Brought Forward From Page GP/9</p> <p align="center">Brought Forward From Page GP/10</p> <p align="center">Brought Forward From Page GP/11</p> <p align="center">Brought Forward From Page GP/12</p>	
	TOTAL FOR GENERAL PRELIMINARIES CARRIED TO GRAND SUMMARY	

ESMP

BILL NO.3

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.1.1	<p>ELEMENT NO.1</p> <p><u>PRELIMINARIES FOR HEALTH AND SAFETY, AIR AND NOISE MONITORING & CONTROL, WASTE MANAGEMENT</u></p> <p><u>The Tenderer's attention is drawn to the fact that the Employer reserves the right to hold back the amount priced against below items either in full or in part due to any non-performance on the Contractor's part of his obligations.</u></p> <p><u>The Contractor will be required to monitor, keep records and report on the following environmental and social issues for the project in manner acceptable to the World Bank and Government of Kenya:</u></p> <p><u>SAFETY, HEALTH AND WELFARE OF WORKERS</u></p> <p>The Contractor shall allow for providing for the safety, health and welfare of work people and for complying with any relevant Ordinances, Regulations or Union Agreement</p> <p>In addition to complying with the requirements of the Occupational Safety & Health Act 2007 and the Factories Act, the Contractor and Sub-Contractors shall be required to comply in all respects with the Factories (Building Operations and Work of Engineering Construction) rules together with the Construction Safety Plan in compliance with International Labour Organizations (ILO) Regulations.</p> <p>The Contractor will further be required to identify a Site Environment Health and Safety Officer in accordance with the above Rules who will be responsible for the health and safety of workers on the site. This includes awareness and sensitization on environmental protection, occupational and community health and safety, code of conduct for contractors personnel, risk of spread of communicable diseases including sexually transmitted diseases such as HIV/AIDS, Gender Equity, Sexual Harassment and abuse amongst workers in the workplace, Spread of COVID-19 amongst community members during the consultation processes and Grievance redress mechanism.</p>	Item	1	1,800,000	1,800,000
	Total Carried to Collection			Ksh	1,800,000

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p>The Contractor will also be required to provide approved personal protective equipment such as good quality hard hats, gumboots, safety boots and other necessary protective gear for all workers on site including Sub-Contractors' workers and also for the exclusive use by the Clerk of Works and representatives of the Employer and Consultants.</p> <p>The tenderer's attention is further drawn to the fact that he is required to submit with his tender a detailed write-up on how he intends to implement the above Construction Safety Plan. It should be noted that this write-up will form a heavily weighted criteria in the evaluation of the tenders.</p> <p>The contractor will be required to provide adequate temporary Notices and Signs shall be posted to indicate e.g. that "construction is in progress" and "entry is at ones own risk" or "trespassers are liable to be prosecuted" or such other Notices and Signs as the Architect may consider necessary from time to time. The design and location of such signs will be to the approval of the Architect.</p> <p>The Contractor is expected to also come up with an Emergency Response plan</p> <p><u>SANITATION OF THE WORKS</u></p> <p>The sanitation of the works shall be provided, maintained and removed on completion of works by the Contractor to the satisfaction of the Architects, health department and local Authorities.</p> <p>The sanitation facilities should be gender sensitive (separate for male and female)shall be for the use by Contractors and sub- Contractors workmen etc without charge.</p> <p>The Latrine/toilet shall be enclosed plastered and painted masonry wall, corrugated sheets roofs ,with concrete tiled floors to facilitate washing. Their location shall be agreed with the Architects and the works shall not be commenced before the sanitary accommodation has been approved by the above mentioned authorities.</p>				
3.2.1		Item	1	500,000	500,000
	Total Carried to Collection			Ksh	500,000

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p>The Contractor will be required to pay all conservancy charges and shall ensure clean daily maintenance and disinfecting of the latrines/toilet, and not less than once per week, the whole area shall be sprayed with disinfectant and insecticides and any temporary drains shall be removed and all works and surfaces disturbed made good and then the whole area disinfected and left clean and free from pollution to the satisfaction of the Architect and local authorities.</p> <p><u>PREVENTION OF DISTURBANCE AND NUISANCE</u></p> <p>3.3.1 Tenderers should note that normal activities shall be continuing in the surrounding buildings during the construction period.</p> <p>Minimum disturbance by noise, dust, water or movement of vehicles, materials, labour or plant must be caused to the function of the existing adjacent buildings in the vicinity and the occupants and staff therein. The Contractor shall comply with all instructions issued by the Employer or Architect with regard to minimizing such disturbances.</p> <p>The Contractor shall not directly or indirectly or otherwise by himself or through his agents cause nuisance. Should he do so he shall be directly responsible for such acts.</p> <p>The works and such sections of the site necessary shall be under the entire care and control of the contractor during the whole period of the contract and shall take all possible precautions to prevent any nuisance, inconvenience or injury to the holder or occupiers of the existing or surrounding properties and to the public generally, and shall at all times keep all paths and roads affected by the works in a safe and clear state, and shall use proper precautions to ensure the safety of all wheeled traffic and pedestrians.</p>				
	<p><u>GRIEVANCE REDRESS MECHANISM (GRM) WORKER</u></p> <p>3.3.2 The Contractor shall employ, maintain and equip throughout the project duration staff assigned the functions for GRM and the implementation of social safeguard issues.</p>	Item	1	500,000	500,000
		Item	1	1,020,000	1,020,000
	Total Carried to Collection			Ksh	1,520,000

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.4.1	<u>CLEANING, REMOVAL OF PLANT AND RUBBISH ETC</u>				
	The Contractor shall upon completion of the works remove and clear away all temporary buildings, scaffolding, plant, rubbish and unused materials, surplus excavated materials and shall leave the whole of the site of the works in a clean and tidy state to the satisfaction of the Architect, including clearing away and making good all traces of dirt.				
	The contractor will come up with a Solid and liquid Waste Management and handling Plan to guide and manage the collection and disposal of solid/liquid waste at the site.				
	Particular care shall be taken in leaving windows, floors and fittings clean and the removal of all paint and cement stains therefrom.				
	He shall also remove all rubbish and dirt from the site as it accumulates or as directed by the Architect. The Contractor is to find his own dump and shall pay all charges in connection therewith.	Item	1	400,000	400,000
3.4.2	<u>AMBIENT AIR QUALITY AND NOISE MONITORING</u>				
	The Contractor to carry out continuous monitoring of the ambient air quality and Noise measurements as well as vibration monitoring on quarterly basis during the construction phase and this should be done at different weather and seasons to ensure that all the weather patterns are taken into consideration during the monitoring process.	Item	1	300,000	300,000
3.4.3	<u>TRAFFIC CONTROL AND MANAGEMENT</u>				
	It will be necessary for the Contractor to provide safety road signage on busy roads around the construction site, temporarily during the construction period. The contractor should arrange diversions for providing alternative route for transport. After breaking up, closing or otherwise interfering with any street or footpath to which the public has access, the Contractor shall make such arrangements as may be reasonably necessary so as to cause as little interference with the traffic in that entrance road or footpath during construction as shall be reasonably practicable.	Item	1	300,000	300,000
	Total Carried to Collection			Ksh	1,000,000

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p>The Contractor will also come up with a Traffic Management Plan to ensure safety of local communities from construction traffic</p> <p><u>MOVEMENT OF TRUCKS OR MACHINERY</u></p> <p>The Contractor moving solid or liquid construction materials and waste shall take strict measures to minimize littering of roads by ensuring that vehicles are licensed and loaded in such a manner as to prevent falling off or spilling of construction materials and by sheeting the sides and tops of all vehicles carrying mud, sand, other materials and debris. Construction materials should be brought from registered/approved sources in the city or from the city and debris should be transferred to assigned places in the landfill with documented confirmation.</p> <p><u>PROTECTION OF EXISTING INSTALLATION</u></p> <p>The Contractor shall take all necessary measures required for the support and protect structures, pipes, cables, sewers and other apparatus during the construction period, and to repair any damage occurs in coordination with local resident association, Government and any concerned authorities.</p> <p><u>PHYSICAL CULTURAL RESOURCES</u></p> <p>The contractor will train construction crews and supervisors to spot potential archaeological finds. In the event of a potential find, the contractor will inform the implementing partner who will in turn liaise with the archaeological department at the Ministry of Culture, and Social Services or a local university for quick assessment and action. Clear record keeping and expert verification procedures, criteria for temporary work stoppages that may be required to allow for rapid resolution of issues in the field and the chain of custody must be clear from the onset.</p> <p>The Contractor will come up with a Water Resource Protection Plan to prevent contamination of drinking water</p>				
3.5.1		Item	1	300,000	300,000
3.5.2		Item	1	100,000	100,000
3.5.3		Item	1	100,000	100,000
	Total Carried to Collection below			Ksh	500,000

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>SECTION SUMMARY- ESMP</u>				
	Total Brought Forward from Page ESMP/1				1,800,000
	Total Brought Forward from Page ESMP/2				500,000
	Total Brought Forward from Page ESMP/3				1,520,000
	Total Brought Forward from Page ESMP/4				1,000,000
	Total Brought Forward from Page ESMP/5 above				500,000
	TOTAL FOR ESMP CARRIED TO GRAND SUMMARY				5,320,000

FISH PROCESSING BUILDING

BILL NO.4

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 01-SUBSTRUCTURE (ALL PROVISIONAL)				
	Site clearance				
4.1.1	Demolish existing delapidated fish landing facility(including its substructure, walls, concrete structure, doors, windows, roof structure, electrical and mechanical works) and concrete pavements;cart away the arisings; prepare surfaces to receive new works(approximate area of 500m2)	Item			
4.1.2	Clear the site of all bushes, grass, shrubs, undergrowth and small trees not exceeding 600mm girth and burn arising	SM	448		
	Excavation				
	<u>Excavation including maintaining and supporting sides and keeping free from water, mud and falling materials; No allowance is made in the excavations for working space; contractor to factor in working space in his rates:</u>				
4.1.3	Excavate oversite to remove top vegetable soil average 300mm deep; dispose off site	SM	448		
4.1.4	For column bases commencing at reduced level not exceeding 1.50 metres deep	CM	103		
4.1.5	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	89		
4.1.6	Excavate trenches for strip foundations; not exceeding 1.5m deep from reduced level	CM	217		
4.1.7	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	109		
4.1.8	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	200		
	Dewatering				
4.1.9	Allow for keeping the excavations free from all water including spring and running water	Item			
	Planking & Strutting				
4.1.10	Allow for planking and strutting sides of excavations and keeping excavations clear of all fallen material, rubbish, etc	Item			
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 01 - SUBSTRUCTURE (cont'd)				
	Disposal				
4.1.11	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	349		
4.1.12	Load and cart away from site surplus excavated material as directed	CM	169		
	Imported Fill				
4.1.13	Imported filling to make-up levels; compacted in layers not exceeding 150 mm thick; To atleast 95% MDD (AASHTO T99) compaction	CM	181		
4.1.14	300mm thick hardcore fill in making up levels, deposit and compacting in layers of 150mm maximum thickness	SM	362		
4.1.15	50mm thick stone dust blinding to surfaces of hardcore fill	SM	362		
	Waterproofing				
4.1.16	1000 Gauge polythene; 150mm laps; no allowances made for laps	SM	410		
	Anti-termite treatment				
4.1.17	Treat hardcore surface with approved antitermite applied in accordance with the manufacturer's instructions and subject to a TEN YEAR guarantee	SM	362		
	Insitu Concrete				
	Mass concrete class 15/20				
4.1.18	50mm thick blinding mass concrete to bottoms of foundation strips	SM	145		
4.1.19	Ditto to bases	SM	69		
	Reinforced vibrated insitu concrete; class 25/20mm to:-				
4.1.20	Foundation strips	CM	29		
4.1.21	Column bases	CM	28		
4.1.22	Stub columns	CM	5		
4.1.23	Steps	CM	2		
4.1.24	150mm thick base slab	SM	391		
4.1.25	150mm thick external ramp slab	SM	19		
4.1.26	Extra over in slab to forming or leaving 300mm wide shallow drainage channels;average 300mm deep 'U' channel in hardcore and floor slab; including hand packing to sides of channel;150mm thick concrete class 25/20 to sides and bed of channel including 50mm blinding class 15/20 and all necessary formwork and reinforcement, all to detail and approval	LM	43		
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 01 - SUBSTRUCTURE (cont'd)				
	Reinforcements <u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007</u>				
4.1.27	16mm diameter bars	KG	700		
4.1.28	12mm diameter bars	KG	1400		
4.1.29	10mm diameter bars	KG	1200		
4.1.30	8mm diameter bars	KG	250		
4.1.31	Steel mesh fabric reinforcement to B.S. 4483 Reference A142 mesh 200 x 200 mm , weighing not less than 2.22 kgs per square metre (measured net - no allowance made for laps) including tying wire and distance blocks	SM	410		
4.1.32	Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to: Sides of stub-columns	SM	71		
4.1.33	Sides of column bases	SM	70		
4.1.34	Sides of strip foundations	SM	97		
4.1.35	Edges of ground floor slab; 75-150mm high	LM	103		
4.1.36	Ditto external ramp; 75-150mm high	LM	24		
4.1.37	Ditto steps; 75-150mm high	LM	54		
4.1.38	Walling <u>Approved natural stone or coral stone ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u> 200 mm thick; foundation walling below floor slab (m.s.)	SM	483		
4.1.39	Plinth finish 15mm Thick cement sand (1:3) rendering to plinth; wood float finish (PLEASE NOTE: The render shall be at least 300 mm below natural ground level)	SM	39		
4.1.40	Prepare and apply three coats of premium quality marine grade bituminous paint to rendered walls; externally	SM	39		
4.1.41	Paving slabs 600x600x50mm pre-cast concrete class 20/20 paving slabs pointed in cement sand (1:3) mortar and laid on and including 50mm approved bed of sand; including excavations, cart away and hardcore fill	SM	80		
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 02 - RC SUPERSTRUCTURE				
	Insitu Concrete				
	<i>Reinforced vibrated insitu concrete; class 25/20mm to:-</i>				
4.2.1	Columns	CM	8		
4.2.2	Beams	CM	20		
4.2.3	200mm thick suspended slab	SM	438		
4.2.4	150mm thick roof slab	SM	120		
	Reinforcements				
	<i>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :- Ribbed bars to KS ISO 6935-2:2007</i>				
4.2.5	Assorted bars	KG	20880		
	Marineply formwork as Described. Allow for setting to special steel proping, strutting, fillets, nails, etc to:				
4.2.6	Soffits of suspended slabs	SM	558		
4.2.7	Sides and soffits of beams	SM	254		
4.2.8	Sides of columns	SM	126		
4.2.9	Edges of slabs; 75-150mm high	LM	61		
4.2.10	Edges of slabs; 150-225mm high	LM	116		
	Staircase				
	Insitu Concrete				
	<i>Vibrated reinforced concrete class 25 (20mm aggregate) in:</i>				
4.2.11	Staircase steps & waist	CM	2		
4.2.12	150mm thick horizontal landing	SM	4		
	Reinforcements				
	<i>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :- Ribbed bars to KS ISO 6935-2:2007</i>				
4.2.13	Assorted bars	KG	450		
	Marineply formwork as Described. Allow for setting to special steel proping, strutting, fillets, nails, etc to:				
4.2.14	Sloping soffits of stairs	SM	9		
4.2.15	Soffits of horizontal landing	SM	4		
4.2.16	Edges of landing 75-150mm high	LM	9		
4.2.17	Ditto; risers	LM	26		
4.2.18	Open stair edge string 300mm wide including raking cutting to profile of the threads	LM	7		
	TOTAL FOR RC SUPERSTRUCTURE CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 03 - WALLING				
	Natural Stone Walling <i>Machine cut natural stone or machine cut coral stone or hollow concrete block walling ; load bearing 7.0 N/mm2; reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</i>				
4.3.1	200mm thick walling; externally	SM	315		
4.3.2	200mm thick ditto; parapet walling	SM	155		
4.3.3	200mm thick walling; internally	SM	256		
4.3.4	150mm thick walling; internally	SM	21		
4.3.5	300 x 50mm thick precast concrete coping fixed in cement and sand mortar (1:3); including pointing onto parapet	LM	155		
4.3.6	Bituminous or other equal approved damp-proof course; 3 ply membrane Horizontal; 200mm wide under walls	LM	186		
4.3.7	Ditto 150mm wide	LM	10		
4.3.8	Pre-cast concrete class 20/20 precast ventilation blocks 600x600x200mm thick vents block with floral motifs; bedded and jointed in cement and sand (1:3) mortar and reinforced every alternate course with hoop iron.;To architect's details	SM	88		
4.3.9	Aluminium Partition Fabricate supply and fix 75mm x 50mm x 3mm thick approved powder coated aluminium framing with buttressing 25mm x 15mm; 10mm x 10mm beading; 20mm x 10mm glazing bead mounting,1500mm high 20mm thick PVC celuka foam board; 1800mm high with 6mm thick glass to approval (m.s);All accessories, fasteners and ironmongery to meet stainless steel grade 316 for marine environment.	SM	11		
4.3.10	<u>Clear laminated glass: glazing to aluminium framework (ms): including black rubber glazing gaskets: to details</u> 6mm thick glass: in partitions (upper panels)	SM	5		
4.3.11	<u>20mm thick PVC celuka foam board: fixed to middle of aluminium framing (ms) with aluminium beads (ms): to</u> Partitions (lower panels)	SM	6		
	TOTAL FOR WALLING; CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 04 - ROOF				
	<u>FLAT ROOF FINISHES</u>				
4.4.1	50 mm cement sand 1:3 water proof screed to flat roof slab and sides of parapet walls; laid to fall and crossfalls	SM	500		
4.4.2	Apply one coat bituminous primer to surface of screed.	SM	500		
	Supply and apply 4mm thick bituminous felt membrane heat welded in 200mm overlaps and all necessary surface preparations; applied strictly in accordance with printed manufacturer's instructions; provide a 10 year guarantee				
4.4.3	To roof slabs	SM	462		
4.4.4	Ditto sides of wall 200mm high	LM	187		
4.4.5	50 x 50mm internal angle fillet	LM	187		
	<u>Floor Finishes</u>				
	<u>Cement and sand (1:4) screeding smooth trowelled</u>				
4.4.6	32mm Thick floor screed to receive clay tiles	SM	462		
4.4.7	200 x 200 x 25mm thick clay tiles at roof slab; bedding and jointing in cement mortar mix 1:4(m/s)	SM	462		
4.4.8	100mm high matching skirting	LM	187		
	<u>Unplasticized PVC downpipes and fittings: solvent welded joints</u>				
	<u>Rainwater goods</u>				
4.4.9	150mm dia PVC down pipes fixed to wall with holding clips at 1200mm centres	LM	30		
4.4.10	Extra over for running outlet	NO	8		
4.4.11	Extra over for swan neck 1000mm long	NO	8		
4.4.12	Extra over for shoe 1000mm long	NO	8		
4.4.13	Extra over 150mm fulbora outlets including galvanised expanded metal mesh	NO	8		
	TOTAL FOR ROOF CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p align="center">FISH PROCESSING BUILDING ELEMENT 05 - WINDOWS</p> <p>Aluminium Windows <u>Heavy Duty powder coated Aluminium windows to B.S. 4813 to be executed by an approved sub contractor</u></p> <p><u>The following in Heavy Duty Powder Coated Aluminium windows from approved manufacturer(s) complete with 80x55x3 mm frames mullions trasomes railing and necessary intermediate reinforcement elements including all weather strips, rubber glazing strips, couplings, ironmongery including hinges, fasteners and stays, sliding rails(where necessary) bars; all ironmongery to be of stainless steel grade 316 marine grade; panes left open for glazing to Architects detail</u></p> <p><u>Please note that the sliding panels, hingeed panels and fixed lights should not be spaced more than 700 mm wide</u></p>				
4.5.1	Window size: 1200 x 1500mm as WD-001	NO	6		
4.5.2	Ditto; size: 3000 x 800mm as WD-002	NO	2		
	Glazing laminated oneway glass fixed with and including beadings.				
4.5.3	6mm thick glass in panes (0.50-1.00m²)	SM	16		
	Window Cill 200x50mm thick precast concrete window cill; bedding and jointing in cement and sand mortar (1:4)	LM	15		
	Wrot mvule to: Pelmet box; comprising of 150 x 25mm top; 100 x 25mm fascia; 100 x 100 x 25mm ends; and 50 x 32mm beares all to Engineer's approval	LM	10		
4.5.6	Aluminium I - Section curtain tracks; fixing with brackets at 150mm centres; complete with runners, end stops and bending to form overlap	LM	10		
	Burglar Proofing Mild steel grille framed with 50 x 25 x 3mm thick RHS sections, 25x3mm MS bars welded to frame at 150 mm centres both sides; including assembly and fixing to opening cutting and pinning lugs to concrete and bedding frame in cement and sand mortar (1:3)	SM	16		
4.5.8	Painting & Decoration Prepare surface of steel by sand blasting; apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint	SM	32		
	TOTAL FOR WINDOWS CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 06 - DOORS <u>50mm thick mvule panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail ; complete with moulded grooves to door leaf on both sides ;solid blocking to iron mongery (m/s) to door</u>				
4.4.1	Double leaf door overall size 1200 x 2400mm high; 6mm thick laminated glass(m/s) at fanlight size 1200x300mm high as D00-001	NO	6		
4.4.2	Single leaf door overall size 1000 x 2400mm high; 6mm thick laminated glass(m/s) at fanlight size 1000x300mm high as D00-003	NO	6		
4.4.3	Single leaf door overall size 900 x 2400mm high; 6mm thick laminated glass(m/s) at fanlight size 900x300mm high as D00-002	NO	7		
	<u>Supply and fix 45mm solid core mvule flush door; veneered on facing to both sides ; Hardwood lipping on all edges : solid blocking for iron mongery (m/s) to door</u>				
4.4.4	Single leaf door overall size 800 x 2100mm high as D00-004	NO	2		
	Door Frame <u>Wrot mvule prime grade:</u>				
4.4.5	Frame; 150 x 50 mm; rebated with rounded edge	LM	121		
4.4.6	Transome with two labour; 150 x 50mm	LM	20		
4.4.7	Architrave; 75 x 25 mm	LM	121		
4.4.8	Quadrant beading; 20mm	LM	121		
4.4.9	Glazing bead; 15 x 15 mm	LM	51		
	Glazing 6 mm thick laminated glass with glazing beads (m.s) to timber door fanlights; area exceeding 0.1SM but not exceeding 0.5SM				
4.4.10		SM	6		
	Steel Sliding Door Single leaf sliding door overall size 2000 x 2400mm high; 50 x 50 x 3mm RHS frame, stiles and rails at 600mm centres; including 3mm thick mild steel plate welded to frame,stiles and rails on both sides: 2No. 75 x 50 x 6mm RHS steel columns at end; 4000mm long top rail/channel and 4000mm long bottom guiding rail/channel set in concrete slab including metal lugs; approved rollers; complete with all necessary ironmongery as D00-006				
4.4.11		NO	1		
4.4.12	Ditto size 1200 x 2100mm high 2400mm long top rail/channel and 2400mm long bottom guiding rail/channel set in concrete slab including metal lugs; approved rollers; complete with all necessary ironmongery as D00-006	NO	1		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING <u>ELEMENT 06 - DOORS</u> <i>Brought Forward</i>				
	<u>Ironmongery</u> <u>Supply and fix the following ironmongery from an approved manufacturer including all necessary matching screws;all ironmongery to be stainless steel grade 3.1.6 marine grade</u>				
4.4.11	3 - Lever mortice lock; complete with lockcase and handle	NO	13		
4.4.12	2 - Lever mortice lock; ditto with indicator	NO	8		
4.4.13	100mm. Pressed butt hinges	PRS	28.5		
4.4.14	150mm heavy duty double action spring hinges	PRS	12		
4.4.15	38mm. Diameter door stop on floor / wall to approval	NO	33		
4.4.16	Heavy duty Door closer to an approved sample	NO	19		
4.4.17	Ditto double action door closer	NO	8		
4.4.18	800 x 200mm high stainless steel kick plate onto both sides to approval	NO	16		
4.4.19	150 x 150mm sex indicator plate	NO	4		
4.4.20	500 x 150mm signage plate	NO	6		
4.4.21	Coat and hat hook	NO	4		
	Painting and Decoration <u>Prepare and Apply one coat of wood primer to back of frames prior to fixing;</u>				
4.4.22	Surfaces of frames 100 - 200 mm girth	LM	121		
4.4.23	Ditto; not exceeding 100 mm girth;	LM	242		
	<u>Prepare and apply three coats of premium quality marine grade clear varnish; Matt quality to:-</u>				
4.4.24	Surfaces of timber; over 300 mm girth; doors	SM	101		
4.4.25	Ditto; transomes	SM	8		
4.4.26	Ditto; 200 - 300 mm girth; frames	LM	121		
4.4.27	Ditto; 100 - 200 mm girth; Architrave	LM	121		
4.4.28	Ditto; not exceeding 100 mm girth; quadrant & glazing beadings	LM	172		
	Painting & Decoration Prepare surface of steel by sand blasting; apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint				
4.4.29		SM	15		
	TOTAL FOR DOORS CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING <u>ELEMENT 07 - FINISHES</u>				
	Internal Finishes				
	<u>Ceiling Finish</u>				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
4.7.1	12mm thick plaster to soffits of slab; steel trowelled	SM	384		
4.7.2	Ditto to staircase landing	SM	4		
4.7.3	Ditto to sloping soffits of staircase	SM	9		
4.7.4	Ditto to raking edges of staircase average girth of 350mm	LM	7		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
4.7.5	To plastered ceilings	SM	384		
4.7.6	Ditto to staircase landing	SM	4		
4.7.7	Ditto to sloping soffits of staircase	SM	9		
4.7.8	Ditto to raking edges of staircase average girth of 350mm	LM	7		
	<u>Wall Finish</u>				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
4.7.9	12mm thick plaster to wall,beams and columns	SM	816		
4.7.10	15mm cement and sand (1:3) plaster to walls and concrete surfaces trowelled smooth; to receive wall tiles (m/s)	SM	280		
	<u>Ceramic wall tiles</u> 600 x 600 x 10mm Thick glazed ceramic wall tiles bedding and jointing in cement and sand (1:3) mortar and flush pointed with white cement;including matching grouting, waterproof adhesive,spacers and edge protectors where required				
4.7.11		SM	280		
4.7.12	12mm girth PVC Edgings	LM	120		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
4.7.13	To plastered walls,beams and columns	SM	816		
	<u>Floor Finishes</u>				
4.7.14	32mm thick cement and sand (1:4) screed; wood floated backing to receive ceramic tiles	SM	36		
4.7.15	Ditto to receive granito tiles	SM	25		
4.7.16	Ditto to receive carpet	SM	9		
4.7.17	Ditto to receive terrazzo	SM	298		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 07 - FINISHES				
	<i>Brought Forward</i>				
4.7.18	Ditto to receive terrazzo staircase landing	SM	4		
4.7.19	Ditto to treads 300mm wide	LM	26		
4.7.20	Ditto to risers 150mm high	LM	26		
	<u>Ceramic floor tiles</u>				
4.7.21	Supply and fix 10 mm thick non-slip ceramic floor tiles on prepared backing including matching grouting, waterproof adhesive, spacers and edge protectors where required; overall size 600mm x 600mm.	SM	36		
4.7.22	Skirting ditto; 100mm high	LM	57		
4.7.23	Supply and fix 10 mm thick non-slip granito floor tiles on prepared backing including matching grouting, waterproof adhesive, spacers and edge protectors where required; overall size 600mm x 600mm.	SM	25		
4.7.24	Skirting ditto; 100mm high	LM	32		
	Supply and fix 20mm thick high quality heavy duty wall to wall floor carpet with dense yarn with high fade resistant with 100% solution dyed nylon suitable for heavy commercial usage yarn weight minimum 1.2kg/m² and total weight equal or above 2.5kg/m²; electrostatic propensity less than 2.0 kv ; prepare surface and lay complete with underlay as per manufacturer's printed instructions; Allow for brass knaplocks and other necessary accessories; all to approval				
4.7.25	To screeded floor	SM	9		
	Mahogany timber skirting				
4.7.26	150 x 25mm thick moulded timber skirting	m	12		
	<u>Prepare and Apply one coat of wood primer to back of frames prior to fixing;</u>				
4.7.27	Surfaces of frames 100 - 200 mm girth	LM	12		
	<u>Prepare and apply three coats of premium quality marine grade clear varnish; Matt quality to:-</u>				
4.7.28	Surfaces of frames 100 - 200 mm girth	LM	12		
Total Carried to next page					

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 07 - FINISHES				
	<i>Brought Forward</i>				
	<u>Polished Terrazzo paving</u>				
4.7.29	25mm thick insitu polished terrazzo laid on concrete in approved coloured aggregate finished smooth including sanding and polishing	SM	298		
4.7.30	Ditto to staircase landing	SM	4		
4.7.31	Ditto to treads 300mm wide	LM	26		
4.7.32	Ditto to risers 150mm high	LM	26		
4.7.33	20 x 100mm high skirting	LM	177		
4.7.34	25 mm wide Slip-resistant Carborandum inserts on Terrazzo bonded with an approved adhesive	LM	200		
4.7.35	32 x 3mm thick plastic dividing strips	LM	385		
	External Finishes				
	<u>Ceiling Finish</u>				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
4.7.36	12mm thick plaster to soffits of slab; steel trowelled	SM	97		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
4.7.37	To plastered ceilings	SM	97		
	<u>Walls</u>				
	<u>25mm thick cement and sand (1:3) render to:-</u>				
4.7.38	25mm thick cement and sand Rendering to walls, beams and columns, finished with a wood float,	SM	710		
	<u>Prepare and apply one undercoat and two finishing coats marine grade weatherguard(silicone based) exterior paint as approved to:</u>				
4.7.39	Fair faced surfaces of walls,beams and columns	SM	710		
	<u>Floor Finishes</u>				
4.7.40	32mm thick cement and sand (1:4) screed; wood floated backing to receive terrazzo	SM	56		
4.7.41	Ditto to 300mm wide treads	LM	54		
4.7.42	Ditto to 150mm high risers	LM	54		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	FISH PROCESSING BUILDING ELEMENT 8 - FITTINGS & FIXTURES				
	Worktop				
4.8.1	100mm thick plain concrete class 15/20 in plinth	SM	23		
4.8.2	Reinforced concrete class 25/20 in 100mm worktops	SM	23		
	Formwork to:-				
4.8.3	Soffites of worktops	SM	23		
4.8.4	Edges of worktops and plinths 75-150mm high	LM	96		
4.8.5	10mm diameter high yield reinforcement bars as described before	KG	345		
4.8.6	100mm thick coral block walling in cement/sand 1:3 mortar	SM	20		
4.8.7	15mm thick cement sand (1:3) plaster of worktop	SM	23		
4.8.8	Ditto walls	SM	40		
	Polished Terrazzo paving				
4.8.9	25mm thick insitu polished terrazzo laid on concrete in approved coloured aggregate finished smooth including sanding and polishing	SM	63		
4.8.10	32 x 3mm thick plastic dividing strips	LM	95		
	Stainless steel grating				
4.8.11	300mm wide stainless steel channel grating grade 3.1:6 marine grade: comprising 40 x 40 x 6mm edge frame : infilled with 40 x 6mm flats at 50mm centres : 40 x 40 x 6mm frame set in concrete with 150mm long stainless steel end split lugs : smooth weld joints	LM	43		
	Handrail -Stainless Steel				
4.8.12	Supply, assemble and fix 1000mm high purpose made stainless steel (grade 3.1.6) comprising of 50mm diameter x 3mm thick stainless steel tube handrail welded to 50mm diameter x 3mm thick stainless steel balusters at fixed to concrete floor at 1000mm centres; balusters fixed to and including 200mm x 150mm x 15mm thick stainless steel base plate fixed to concrete; complete with 4no. 25mm diameter x 3mm thick horizontal middle rails ; including all necessary cleats, brackets,lugs stiffeners and the like; all to Architect's instructions and approval-staircase	LM	7		
4.8.13	Ditto at ramp	LM	27		
	Foot bath				
4.8.14	1500 x 900 x 550mm deep foot bath comprising of 30x30x3mm thick aluminium frame anchored in reinforced concrete slab; 22mm thick entrance matting with 5mm spacing between profiles. Colour: black; All to Architect's detail and approval	NO	2		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p align="center">FISH PROCESSING BUILDING <u>ELEMENT 08 - FITTINGS AND FIXTURES</u></p> <p align="center"><i>Brought Forward</i></p> <p><u>High level cabinets: comprising of 20mm thick PVC celuka foam board in sides, doors, divisions and shelves; 20mm thick PVC celuka foam board as before described top on 20 x50mm mvule timber framing; including matching lipping to edges; secret nailing/screwing on prime timber substructures; complete with doors on malpa hinges; with stainless steel D handle and magnetic ball catches and all other necessary iron mongery; all ironmongery to be of stainless steel grade 316 marine grade</u></p>				
4.8.15	High level kitchen cabinet : overall size: length 2200mm x 300mm wide x 800mm high at women's room	NO	1		
	TOTAL FOR FITTINGS & FIXTURES CARRIED TO MAIN SUMMARY				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p align="center">FISH PROCESSING BUILDING <u>ELEMENT 9 -BUILDERS WORK IN CONNECTION WITH SERVICES (BWICS)</u></p> <p>Builder's Work incidental to sanitary fittings, ventilation, plumbing, drainage, electrical installations, concealed fixings</p>				
4.9.1	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including making good all surfaces	ITEM	1		
	TOTAL FOR BWICS CARRIED TO MAIN SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

FISH PROCESSING BUILDING

SUMMARY PAGE

ITEM	DESCRIPTION	PAGE	AMOUNT
1	SUBSTRUCTURE	<i>FPB/4</i>	
2	R.C. SUPERSTRUCTURE	<i>FPB/5</i>	
3	WALLING	<i>FPB/6</i>	
4	ROOF	<i>FPB/7</i>	
5	WINDOWS	<i>FPB/8</i>	
6	DOORS	<i>FPB/10</i>	
7	FINISHES	<i>FPB/14</i>	
8	FITTINGS & FIXTURES	<i>FPB/15</i>	
9	BWICS	<i>FPB/16</i>	
	TOTAL FOR FISH PROCESSING BUILDING CARRIED TO MAIN SUMMARY		

ABLUTION BLOCK

BILL NO.5

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 01-SUBSTRUCTURE (ALL PROVISIONAL)				
	Site clearance				
5.1.2	Clear the site of all bushes, grass, shrubs, undergrowth and small trees not exceeding 600mm girth and burn arising	SM	80		
	Excavation				
	<u>Excavation including maintaining and supporting sides and keeping free from water, mud and falling materials; No allowance is made in the excavations for working space; contractor to factor in working space in his rates:</u>				
5.1.3	Excavate oversite to remove top vegetable soil average 300mm deep; dispose off site	SM	80		
5.1.4	For column bases commencing at reduced level not exceeding 1.50 metres deep	CM	34		
5.1.5	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	31		
5.1.6	Excavate trenches for strip foundations; not exceeding 1.5m deep from reduced level	CM	50		
5.1.7	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	25		
5.1.8	Extra over all descriptions of excavations in compacted fill	CM	140		
5.1.9	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	50		
	Dewatering				
5.1.10	Allow for keeping the excavations free from all water including spring and running water	Item			
	Planking & Strutting				
5.1.11	Allow for planking and strutting sides of excavations and keeping excavations clear of all fallen material, rubbish, etc	Item			
	Disposal				
5.1.12	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	82		
5.1.13	Load and cart away from site surplus excavated material as directed	CM	58		
	Imported Fill				
5.1.14	Imported filling to make-up levels; compacted in layers not exceeding 150 mm thick; To atleast 95% MDD (AASHTO T99) compaction	CM	29		
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 01 - SUBSTRUCTURE (cont'd)				
5.1.15	300mm thick hardcore fill in making up levels, deposit and compacting in layers of 150mm maximum thickness	SM	58		
5.1.16	50mm thick stone dust blinding to surfaces of hardcore fill	SM	58		
5.1.17	Waterproofing 1000 Gauge polythene; 150mm laps; no allowances made for laps	SM	69		
5.1.18	Anti-termite treatment Treat hardcore surface with approved antitermite applied in accordance with the manufacturer's instructions and subject to a TEN YEAR guarantee	SM	58		
5.1.19	Insitu Concrete Mass concrete class 15/20 50mm thick blinding mass concrete to bottoms of foundation strips	SM	33		
5.1.20	Ditto to bases	SM	23		
	Reinforced vibrated insitu concrete; class 25/20mm to;-				
5.1.21	Foundation strips	CM	7		
5.1.22	Column bases	CM	9		
5.1.23	Stub columns	CM	2		
5.1.24	Steps	CM	1		
5.1.25	150mm thick base slab	SM	63		
5.1.26	150mm thick external ramp slab	SM	6		
	Reinforcements <u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks :-</u> <u>(Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007</u>				
5.1.27	16mm diameter bars	KG	200		
5.1.28	12mm diameter bars	KG	450		
5.1.29	10mm diameter bars	KG	300		
5.1.30	8mm diameter bars	KG	100		
5.1.31	Steel mesh fabric reinforcement to B.S. 4483 Reference A142 mesh 200 x 200 mm , weighing not less than 2.22 kgs per square metre (measured net - no allowance made for laps) including tying wire and distance blocks	SM	69		
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
ABLUTION BLOCK ELEMENT 01 - SUBSTRUCTURE (cont'd)					
	Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to:				
5.1.32	Sides of sub-columns	SM	25		
5.1.33	Sides of column bases	SM	24		
5.1.34	Sides of strip foundations	SM	22		
5.1.35	Edges of ground floor slab; 75-150mm high	LM	33		
5.1.36	Ditto external ramp; 75-150mm high	LM	8		
5.1.37	Ditto steps; 75-150mm high	LM	11		
	Walling <u>Approved natural stone or coral stone ; load bearing 7.0 N/mm2; reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u>				
5.1.38	200 mm thick; foundation walling below floor slab (m.s.)	SM	110		
	Plinth finish 15mm Thick cement sand (1:3) rendering to plinth; wood float finish (PLEASE NOTE: The render shall be at least 300 mm below natural ground level)				
5.1.39		SM	13		
5.1.40	Prepare and apply three coats of premium quality marine grade bituminous paint to rendered walls; externally	SM	13		
	Paving slabs 600x600x50mm pre-cast concrete class 20/20 paving slabs pointed in cement sand (1:3) mortar and laid on and including 50mm approved bed of sand; including excavations, cart away and hardcore fill				
5.1.41		SM	35		
<i>Carried to Collection</i>					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<u>COLLECTION PAGE</u>					
1	Total brought down from page FPB/1				
2	Total brought down from page FPB/2				
3	Total brought down from page FPB/3 above				
TOTAL FOR SUBSTRUCTURE; CARRIED TO SUMMARY					

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p align="center">ABLUTION BLOCK ELEMENT 02 - RC SUPERSTRUCTURE</p> <p>Insitu Concrete <u>Reinforced vibrated insitu concrete; class 25/20mm to:-</u></p> <p>5.2.1 Columns CM 2 5.2.2 Beams CM 3 5.2.3 150mm thick suspended slab SM 91</p> <p>Reinforcements <u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007</u></p> <p>5.2.4 Assorted bars KG 2948</p> <p>Marineply formwork as Described. Allow for setting to special steel proping, strutting, fillets, nails, etc to:</p> <p>5.2.5 Soffits of suspended slabs SM 91 5.2.6 Sides and soffits of beams SM 37 5.2.7 Sides of columns SM 31 5.2.8 Edges of slabs; 75-150mm high LM 38</p>				
	TOTAL FOR RC SUPERSTRUCTURE CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 04 - ROOF				
	<u>FLAT ROOF FINISHES</u>				
5.4.1	50 mm cement sand 1:3 water proof screed to flat roof slab and sides of parapet walls; laid to fall and crossfalls	SM	88		
5.4.2	Apply one coat bituminous primer to surface of screed.	SM	88		
	Supply and apply 4mm thick bituminous felt membrane heat welded in 200mm overlaps and all necessary surface preparations; applied strictly in accordance with printed manufacturer's instructions; provide a 10 year guarantee				
5.4.3	To roof slabs	SM	69		
5.4.4	Ditto sides of wall 200mm high	LM	95		
5.4.5	50 x 50mm internal angle fillet	LM	95		
	<u>Floor Finishes</u>				
	<u>Cement and sand (1:4) screeding smooth trowelled</u>				
5.4.6	32mm Thick floor screed to receive clay tiles	SM	69		
5.4.7	200 x 200 x 25mm thick clay tiles at roof slab; bedding and jointing in cement mortar mix 1:4(m/s)	SM	69		
5.4.8	100mm high matching skirting	LM	95		
	<u>Unplasticized PVC downpipes and fittings: solvent welded joints</u>				
	<u>Rainwater goods</u>				
5.4.9	150mm dia PVC down pipes fixed to wall with holding clips at 1200mm centres	LM	12		
5.4.10	Extra over for running outlet	NO	4		
5.4.11	Extra over for swan neck 1000mm long	NO	4		
5.4.12	Extra over for shoe 1000mm long	NO	4		
5.4.13	Extra over 150mm fulbora outlets including galvanised expanded metal mesh	NO	4		
	TOTAL FOR ROOF CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p align="center">ABLUTION BLOCK ELEMENT 05 - WINDOWS</p> <p>Aluminium Windows <u>Heavy Duty powder coated Aluminium windows to B.S. 4813 to be executed by an approved sub contractor</u></p> <p><u>The following in Heavy Duty Powder Coated Aluminium windows from approved manufacturer(s) complete with 80x55x3 mm frames mullions trasomes railing and necessary intermediate reinforcement elements including all weather strips, rubber glazing strips, couplings, ironmongery including hinges, fasteners and stays, sliding rails(where necessary) bars; all ironmongery to be of stainless steel grade 316 marine grade; panes left open for glazing to Architects detail</u></p> <p><u>Please note that the sliding panels, hingeed panels and fixed lights should not be spaced more than 700 mm wide</u></p>				
5.5.1	Window size: 1200 x 800mm as WD-003	NO	4		
5.5.2	Ditto; size: 2500 x 800mm as WD-004	NO	2		
	Glazing laminated oneway glass fixed with and including beadings.				
5.5.3	6mm thick glass in panes (0.50-1.00m²)	SM	8		
	Window Cill 200x50mm thick precast concrete window cill; bedding and jointing in cement and sand mortar (1:4)	LM	11		
	Burglar Proofing Mild steel grille framed with 50 x 25 x 3mm thick RHS sections, 25x3mm MS bars welded to frame at 150 mm centres both sides; including assembly and fixing to opening cutting and pinning lugs to concrete and bedding frame in cement and sand mortar (1:3)	SM	8		
5.5.6	Painting & Decoration Prepare surface of steel by sand blasting; apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint	SM	16		
	TOTAL FOR WINDOWS CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 06 - DOORS				
	<u>50mm thick mvule panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail ; complete with moulded grooves to door leaf on both sides ;solid blocking to iron mongery (m/s) to door</u>				
5.6.1	Single leaf door overall size 1000 x 2400mm high; 6mm thick laminated glass(m/s) at fanlight size 1000x300mm high as D00-003	NO	6		
	<u>Supply and fix 45mm solid core mvule flush door; veneered on facing to both sides ; Hardwood lipping on all edges : solid blocking for iron mongery (m/s) to door</u>				
5.6.2	Single leaf door overall size 800 x 2100mm high as D00-004	NO	4		
	Door Frame <u>Wrot mvule prime grade;</u>				
5.6.3	Frame; 150 x 50 mm; rebated with rounded edge	LM	55		
5.6.4	Transome with two labour; 150 x 50mm	LM	6		
5.6.5	Architrave; 75 x 25 mm	LM	55		
5.6.6	Quadrant beading; 20mm	LM	55		
5.6.7	Glazing bead; 15 x 15 mm	LM	16		
	Glazing 6 mm thick laminated glass with glazing beads (m.s) to timber door fanlights; area exceeding 0.15M but not exceeding 0.55M				
5.6.8		SM	6		
	<u>Ironmongery</u> <u>Supply and fix the following ironmongery from an approved manufacturer including all necessary matching screws;all ironmongery to be stainless steel grade 3.1.6 marine grade</u>				
5.6.9	3 - Lever mortice lock; complete with lockcase and handle	NO	6		
5.6.10	2 - Lever mortice lock; ditto with indicator	NO	4		
5.6.11	100mm. Pressed butt hinges	PRS	6		
5.6.12	150mm heavy duty double action spring hinges	PRS	9		
5.6.13	38mm. Diameter door stop on floor / wall to approval	NO	16		
5.6.14	Heavy duty Door closer to an approved sample	NO	4		
5.6.15	Heavy duty double action door closer	NO	6		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 06 - DOORS				
	<i>Brought Forward</i>				
5.6.16	800 x 200mm high stainless steel kick plate onto both sides to approval	NO	12		
5.6.17	150 x 150mm sex indicator plate	NO	4		
5.6.18	Coat and hat hook	NO	6		
	Painting and Decoration				
	<u>Prepare and Apply one coat of wood primer to back of frames prior to fixing;</u>				
5.6.19	Surfaces of frames 100 - 200 mm girth	LM	55		
5.6.20	Ditto; not exceeding 100 mm girth;	LM	110		
	<u>Prepare and apply three coats of premium quality marine grade clear varnish; Matt quality to:-</u>				
5.6.21	Surfaces of timber; over 300 mm girth; doors	SM	43		
5.6.22	Ditto; transomes	SM	3		
5.6.23	Ditto; 200 - 300 mm girth; frames	LM	55		
5.6.24	Ditto; 100 - 200 mm girth; Architrave	LM	55		
5.6.25	Ditto; not exceeding 100 mm girth; quadrant & glazing beadings	LM	71		
	TOTAL FOR DOORS CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 07 - FINISHES				
	Internal Finishes				
	Ceiling Finish				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
5.7.1	12mm thick plaster to soffits of slab; steel trowelled	SM	41		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
5.7.2	To plastered ceilings	SM	41		
	Wall Finish				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
5.7.3	12mm thick plaster to wall,beams and columns	SM	125		
5.7.4	15mm cement and sand (1:3) plaster to walls and concrete surfaces trowelled smooth; to receive wall tiles (m/s)	SM	120		
	<u>Ceramic wall tiles</u>				
5.7.5	600 x 600 x 10mm Thick glazed ceramic wall tiles bedding and jointing in cement and sand (1:3) mortar and flush pointed with white cement;including matching grouting, waterproof adhesive,spacers and edge protectors where required	SM	120		
5.7.6	12mm girth PVC Edgings	LM	50		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
5.7.7	To plastered walls,beams and columns	SM	125		
	Floor Finishes				
5.7.8	32mm thick cement and sand (1:4) screed; wood floated backing to receive ceramic tiles	SM	41		
	<u>Ceramic floor tiles</u>				
5.7.9	Supply and fix 10 mm thick non-slip ceramic floor tiles on prepared backing including matching grouting, waterproof adhesive,spacers and edge protectors where required; overall size 600mm x 600mm.	SM	41		
5.7.10	Skirting ditto; 100mm high	LM	62		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 07 - FINISHES				
	<i>Brought Forward</i>				
	External Finishes				
	Ceiling Finish				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
5.7.11	12mm thick plaster to soffits of slab; steel trowelled	SM	30		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to</u>				
5.7.12	plastered surfaces To plastered ceilings	SM	30		
	Walls				
	<u>25mm thick cement and sand (1:3) render to:-</u>				
5.7.13	25mm thick cement and sand Rendering to walls, beams and columns, finished with a wood float,	SM	252		
	<u>Prepare and apply one undercoat and two finishing coats marine grade weatherguard(silicone based) exterior paint as approved to:</u>				
5.7.14	Fair faced surfaces of walls,beams and columns	SM	252		
	Floor Finishes				
5.7.15	32mm thick cement and sand (1:4) screed; wood floated backing to receive terrazzo	SM	18		
5.7.16	Ditto to 300mm wide treads	LM	11		
5.7.17	Ditto to 150mm high risers	LM	11		
	Polished Terrazzo paving				
5.7.18	25mm thick insitu polished terrazzo laid on concrete in approved coloured aggregate finished smooth including sanding and polishing	SM	18		
5.7.19	Ditto to 300mm wide treads	LM	11		
5.7.20	Ditto to 150mm high risers	LM	11		
5.7.21	20 x 100mm high skirting	LM	12		
5.7.22	25 mm wide Slip-resistant Carborandum inserts on Terrazzo treads bonded with an approved adhesive	LM	13		
5.7.23	32 x 3mm thick plastic dividing strips	LM	27		
	TOTAL FOR FINISHES CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ABLUTION BLOCK ELEMENT 8 - FITTINGS & FIXTURES				
	Worktop				
5.8.1	100mm thick plain concrete class 15/20 in plinth	SM	2		
5.8.2	Reinforced concrete class 25/20 in 100mm worktops	SM	2		
	Formwork to:-				
5.8.3	Soffites of worktops	SM	2		
5.8.4	Edges of worktops and plinths 75-150mm high	LM	6		
5.8.5	10mm diameter high yield reinforcement bars as described before	KG	30		
5.8.6	100mm thick coral block walling in cement/sand 1:3 mortar	SM	5		
5.8.7	15mm thick cement sand (1:3) plaster of worktop	SM	2		
5.8.8	Ditto walls	SM	10		
	Polished Terrazzo paving				
5.8.9	25mm thick insitu polished terrazzo laid on concrete in approved coloured aggregate finished smooth including sanding and polishing	SM	12		
5.8.10	32 x 3mm thick plastic dividing strips	LM	18		
	<u>Handrail -Stainless Steel</u>				
5.8.11	Supply, assemble and fix 1000mm high purpose made stainless steel (grade 3.1.6) comprising of 50mm diameter x 3mm thick stainless steel tube handrail welded to 50mm diameter x 3mm thick stainless steel balusters at fixed to concrete floor at 1000mm centres; balusters fixed to and including 200mm x 150mm x 15mm thick stainless steel base plate fixed to concrete; complete with 4no. 25mm diameter x 3mm thick horizontal middle rails ; including all necessary cleats, brackets,lugs stiffeners and the like; all to Architect's instructions and approval-ramp	LM	5		
	TOTAL FOR FITTINGS & FIXTURES CARRIED TO MAIN SUMMARY				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU
COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5.9.1	<p align="center">ABLUTION BLOCK <u>ELEMENT 9 -BUILDERS WORK IN CONNECTION</u> <u>WITH SERVICES (BWICS)</u></p> <p>Builder's Work incidental to sanitary fittings, ventilation, plumbing, drainage, electrical installations, concealed fixings</p> <p>Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including making good all surfaces</p>	ITEM	1		
	TOTAL FOR BWICS CARRIED TO MAIN SUMMARY				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU
COUNTY**

ABLUTION BLOCK

SUMMARY PAGE

ITEM	DESCRIPTION	PAGE	AMOUNT
1	SUBSTRUCTURE	<i>AB/3</i>	
2	R.C. SUPERSTRUCTURE	<i>AB/4</i>	
3	WALLING	<i>AB/5</i>	
4	ROOF	<i>AB/6</i>	
5	WINDOWS	<i>AB/7</i>	
6	DOORS	<i>AB/9</i>	
7	FINISHES	<i>AB/11</i>	
8	FITTINGS & FIXTURES	<i>AB/12</i>	
9	BWICS	<i>AB/13</i>	
	TOTAL FOR ABLUTION BLOCK CARRIED TO MAIN SUMMARY		

GATE HOUSE

BILL NO.6

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 01-SUBSTRUCTURE (ALL PROVISIONAL)				
	Site clearance				
6.1.1	Clear the site of all bushes, grass, shrubs, undergrowth and small trees not exceeding 600mm girth and burn arising	SM	20		
	Excavation				
	<u>Excavation including maintaining and supporting sides and keeping free from water, mud and falling materials; No allowance is made in the excavations for working space; contractor to factor in working space in his rates:</u>				
6.1.2	Excavate oversite to remove top vegetable soil average 300mm deep; dispose off site	SM	20		
6.1.3	Excavate trenches for strip foundations; not exceeding 1.5m deep from reduced level	CM	13		
6.1.4	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	7		
6.1.5	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	10		
	Dewatering				
6.1.6	Allow for keeping the excavations free from all water including spring and running water	Item			
	Planking & Strutting				
6.1.7	Allow for planking and strutting sides of excavations and keeping excavations clear of all fallen material, rubbish, etc	Item			
	Disposal				
6.1.8	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	12		
6.1.9	Load and cart away from site surplus excavated material as directed	CM	8		
	Imported Fill				
6.1.10	Imported filling to make-up levels; compacted in layers not exceeding 150 mm thick; To atleast 95% MDD (AASHTO T99) compaction	CM	6		
6.1.11	300mm thick hardcore fill in making up levels, deposit and compacting in layers of 150mm maximum thickness	SM	12		
6.1.12	50mm thick stone dust blinding to surfaces of hardcore fill	SM	12		
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 01 - SUBSTRUCTURE (cont'd)				
6.1.13	Waterproofing 1000 Gauge polythene; 150mm laps; no allowances made for laps	SM	14		
6.1.14	Anti-termite treatment Treat hardcore surface with approved antitermite applied in accordance with the manufacturer's instructions and subject to a TEN YEAR guarantee	SM	12		
6.1.15	Insitu Concrete Mass concrete class 15/20 50mm thick blinding mass concrete to bottoms of foundation strips	SM	9		
6.1.16	Reinforced vibrated insitu concrete; class 25/20mm to:- Foundation strips	CM	2		
6.1.17	150mm thick base slab	SM	14		
6.1.18	Reinforcements <u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007</u> 10mm diameter bars	KG	100		
6.1.19	Steel mesh fabric reinforcement to B.S. 4483 Reference A142 mesh 200 x 200 mm , weighing not less than 2.22 kgs per square metre (measured net - no allowance made for laps) including tying wire and distance blocks	SM	14		
6.1.20	Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to: Sides of strip foundations	SM	6		
6.1.21	Edges of ground floor slab; 75-150mm high	LM	15		
6.1.22	Walling <u>Approved natural stone or coral stone ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u> 200 mm thick; foundation walling below floor slab (m.s.)	SM	28		
6.1.23	Plinth finish 15mm Thick cement sand (1:3) rendering to plinth; wood float finish (PLEASE NOTE: The render shall be at least 300 mm below natural ground level)	SM	5		
6.1.24	Prepare and apply three coats of premium quality marine grade bituminous paint to rendered walls; externally	SM	5		
	<i>Carried to Collection</i>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 01 - SUBSTRUCTURE (cont'd)				
6.1.40	Paving slabs 600x600x50mm pre-cast concrete class 20/20 paving slabs pointed in cement sand (1:3) mortar and laid on and including 50mm approved bed of sand; including excavations, cart away and hardcore fill	SM	10		
	<i>Carried to Collection</i>				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>COLLECTION PAGE</u>				
1	<i>Total brought down from page FPB/1</i>				
2	<i>Total brought down from page FPB/2</i>				
3	<i>Total brought down from page FPB/3 above</i>				
	TOTAL FOR SUBSTRUCTURE; CARRIED TO SUMMARY				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 02 - RC SUPERSTRUCTURE				
	Insitu Concrete <u>Reinforced vibrated insitu concrete; class 25/20mm to:-</u>				
6.2.1	Beams	CM	1		
6.2.2	Gutter beams	CM	2		
6.2.3	100mm thick suspended canopy slab	SM	5		
	Reinforcements <u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007</u>				
6.2.4	Assorted bars	KG	555		
	Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to:				
6.2.5	Soffits of suspended slabs	SM	5		
6.2.6	Sides and soffits of beams	SM	11		
6.2.7	Sides and soffits of gutter beams	SM	12		
6.2.8	Edges of slabs; 75-150mm high	LM	17		
	TOTAL FOR RC SUPERSTRUCTURE CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 03 - WALLING				
	Natural Stone Walling <i>Machine cut natural stone or machine cut coral stone or hollow concrete block walling ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</i>				
6.3.1	200mm thick walling; externally	SM	17		
6.3.2	150mm thick walling; internally	SM	12		
	<i>Approved natural handressed zero jointed stone; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</i>				
6.3.3	200mm thick walling; externally	SM	13		
6.3.4	200mm thick at parapet wall	SM	9		
	Pre-cast concrete class 20/20 precast ventilation blocks				
6.3.6	300 x 50mm thick precast concrete coping fixed in cement and sand mortar (1:3); including pointing onto parapet	LM	14		
	Bituminous or other equal approved damp-proof course; 3 ply membrane				
6.3.7	Horizontal; 200mm wide under walls	LM	14		
6.3.8	Ditto 150mm wide	LM	5		
	TOTAL FOR WALLING; CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 04 - ROOF				
	<u>Roof covering</u> Supply and fix 26 gauge approved Prepainted box profile Aluminium roofing sheets to timber Purlins including 12mm diameter x 150mm raw bolts and all necessary accessories; fixing in accordance with manufacturers specification				
6.4.1	Roof covering : to slopes not exceeding 15 degrees to horizontal	SM	10		
6.4.2	Extra over for ridge capping	LM	3		
	<u>Sawn Cypress Timber roof structure: pressure impregnated: obtained from an approved source: with and including bolted connections : in</u>				
6.4.3	150 x 50mm thick ridge	LM	3		
6.4.4	150 x 50mm thick truss rafters	LM	10		
6.4.5	150 x 50mm thick tie beams	LM	9		
6.4.6	100 x 50mm thick internal truss member	LM	8		
6.4.7	100 x 50mm thick purlins	LM	18		
6.4.8	150 x 50mm thick wallplate secured to concrete with hoop iron and raw bolts	LM	5		
	<u>FLAT ROOF FINISHES</u>				
6.4.9	50 mm cement sand 1:3 water proof screed to canopy slabs and sides of parapet walls; laid to fall and crossfalls	SM	19		
6.4.10	Apply one coat bituminous primer to surface of screed.	SM	19		
	Supply and apply 4mm thick bituminous felt membrane heat welded in 200mm overlaps and all necessary surface preparations; applied strictly in accordance with printed manufacturer's instructions; provide a 10 year guarantee				
6.4.11	To gutters	SM	11		
6.4.12	To canopy	SM	5		
6.4.13	Ditto sides of wall 200mm high	LM	14		
6.4.14	50 x 50mm internal angle fillet	LM	14		
	<u>Unplasticized PVC downpipes and fittings: solvent welded joints</u>				
	<u>Rainwater goods</u>				
6.4.15	150mm dia PVC down pipes fixed to wall with holding clips at 1200mm centres	LM	12		
6.4.16	Extra over for running outlet	NO	4		
6.4.17	Extra over for swan neck 1000mm long	NO	4		
6.4.18	Extra over for shoe 1000mm long	NO	4		
6.4.19	Extra over 150mm fulbora outlets including galvanised expanded metal mesh	NO	4		
	TOTAL FOR ROOF CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p align="center">GATE HOUSE ELEMENT 05 - WINDOWS</p> <p>Aluminium Windows <u>Heavy Duty powder coated Aluminium windows to B.S. 4813 to be executed by an approved sub contractor</u></p> <p><u>The following in Heavy Duty Powder Coated Aluminium windows from approved manufacturer(s) complete with 80x55x3 mm frames mullions trasomes railing and necessary intermediate reinforcement elements including all weather strips, rubber glazing strips, couplings, ironmongery including hinges, fasteners and stays, sliding rails(where necessary) bars; all ironmongery to be of stainless steel grade 316 marine grade; panes left open for glazing to Architects detail</u></p> <p><u>Please note that the sliding panels, hingeed panels and fixed lights should not be spaced more than 700 mm wide</u></p>				
6.5.1	Window size: 750 x 1500mm as W-03	NO	3		
6.5.2	Ditto; size: 600 x 900mm as W-04	NO	2		
	Glazing laminated oneway glass fixed with and including beadings.				
6.5.3	6mm thick glass in panes (0.50-1.00m²)	SM	5		
	Window Cill 200x50mm thick precast concrete window cill; bedding and jointing in cement and sand mortar (1:4)	LM	5		
	Burglar Proofing Mild steel grille framed with 50 x 25 x 3mm thick RHS sections, 25x3mm MS bars welded to frame at 150 mm centres both sides; including assembly and fixing to opening cutting and pinning lugs to concrete and bedding frame in cement and sand mortar (1:3)	SM	5		
6.5.6	Painting & Decoration Prepare surface of steel by sand blasting; apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint	SM	10		
	TOTAL FOR WINDOWS CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 06 - DOORS				
	<u>DOORS</u>				
	<u>Louvred Doors</u>				
	<u>50mm thick mvule louvred door comprising of 50x3mm louvres set at 45 degrees at 50mm centres;solid blocking for iron mongery (m/s) to door : all in accordance with Architect's details</u>				
6.6.1	Single leaf door overall size 900 x 2400mm high;complete with timber louvred fanlight size 900x300mm high as DOO1	NO	2		
	<u>Panel Doors</u>				
	<u>50mm thick mvule panelled door: comprised of 200 x 50mm thick stiles, top and middle rail: 200 x 50mm thick bottom rail ; complete with moulded grooves to door leaf on both sides ;solid blocking to iron mongery (m/s) to door</u>				
6.6.2	Single leaf door overall size 900 x 2400mm high; complete with timber louvred fanlight size 900x300mm high as DOO2	NO	1		
	<u>Door Frame</u>				
	<u>Wrot mvule prime grade:</u>				
6.6.3	Frame; 150 x 50 mm; rebated with rounded edge	LM	17		
6.6.4	Transome with two labour; 150 x 50mm	LM	3		
6.6.5	Architrave; 75 x 25 mm	LM	17		
6.6.6	Quadrant beading; 20mm	LM	17		
	<u>Ironmongery</u>				
	<u>Supply and fix the following ironmongery from an approved manufacturer including all necessary matching screws;all ironmongery to be stainless steel grade 3.1.6 marine grade</u>				
6.6.7	3 - Lever mortice lock; complete with lockcase and handle	NO	1		
6.6.8	2 - Lever mortice lock; ditto with indicator	NO	2		
6.6.9	100mm. Pressed butt hinges	PRS	4.5		
6.6.10	38mm. Diameter door stop on floor / wall to approval	NO	3		
6.6.11	Heavy duty Door closer to an approved sample	NO	3		
6.6.12	800 x 200mm high stainless steel kick plate onto both sides to approval	NO	2		
6.6.13	150 x 150mm sex indicator plate	NO	2		
6.6.14	Coat and hat hook	NO	2		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 07 - FINISHES				
	Internal Finishes				
	Ceiling Finish				
	Chipboard Ceiling				
6.7.1	12mm thick chipboard ceiling : fixed to and including 50 x 50mm sawn cypress bandering at 600 centre to centre; secrete nailed	SM	10		
6.7.2	100mm girth polyutherane cornice	LM	23		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
6.7.2	To chipboard ceilings	SM	10		
	Wall Finish				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
6.7.3	12mm thick plaster to wall,beams and columns	SM	40		
6.7.4	15mm cement and sand (1:3) plaster to walls and concrete surfaces trowelled smooth; to receive wall tiles (m/s)	SM	24		
	<u>Ceramic wall tiles</u>				
6.7.5	600 x 600 x 10mm Thick glazed ceramic wall tiles bedding and jointing in cement and sand (1:3) mortar and flush pointed with white cement;including matching grouting, waterproof adhesive,spacers and edge protectors where required	SM	24		
6.7.6	12mm girth PVC Edgings	LM	21		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to plastered surfaces</u>				
6.7.7	To plastered walls,beams and columns	SM	40		
	Floor Finishes				
6.7.8	32mm thick cement and sand (1:4) screed; wood floated backing to receive ceramic tiles	SM	10		
	<u>Ceramic floor tiles</u>				
6.7.9	Supply and fix 10 mm thick non-slip ceramic floor tiles on prepared backing including matching grouting, waterproof adhesive,spacers and edge protectors where required; overall size 600mm x 600mm.	SM	10		
6.7.10	Skirting ditto; 100mm high	LM	21		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 07 - FINISHES				
	<i>Brought Forward</i>				
	External Finishes				
	Ceiling Finish				
	<u>Plaster; 9mm first coat of cement and sand (1:3) and 3mm second coat of cement and lime putty (1:5) as described in:-</u>				
6.7.11	12mm thick plaster to soffits of slab; steel trowelled	SM	5		
	<u>Prepare surface, apply undercoat and apply three coats PVA based premium quality marine grade silk vinyl emulsion paint or other equal and approved to</u>				
6.7.12	plastered surfaces To plastered ceilings	SM	5		
	Walls				
	<u>25mm thick cement and sand (1:3) render to:-</u>				
6.7.13	25mm thick cement and sand Rendering to walls, beams and columns, finished with a wood float,	SM	43		
	<u>Prepare and apply one undercoat and two finishing coats marine grade weatherguard(silicone based) exterior paint as approved to:</u>				
6.7.14	Fair faced surfaces of walls,beams and columns	SM	43		
	TOTAL FOR FINISHES CARRIED TO SUMMARY				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	GATE HOUSE ELEMENT 8 -BUILDERS WORK IN CONNECTION WITH SERVICES (BWICS)				
	Builder's Work incidental to sanitary fittings, ventilation, plumbing, drainage, electrical installations, concealed fixings				
6.8.1	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installations including making good all surfaces	ITEM	1		
	TOTAL FOR BWICS CARRIED TO MAIN SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

GATE HOUSE

SUMMARY PAGE

ITEM	DESCRIPTION	PAGE	AMOUNT
1	SUBSTRUCTURE	GH/3	
2	R.C. SUPERSTRUCTURE	GH/3	
3	WALLING	GH/4	
4	ROOF	GH/5	
5	WINDOWS	GH/6	
6	DOORS	GH/8	
7	FINISHES	GH/10	
8	BWICS	GH/10	
	TOTAL FOR GATE HOUSE CARRIED TO MAIN SUMMARY		

BOUNDARY WALL

BILL NO.7

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT 01				
	<u>BOUNDARY WALL</u>				
7.1.1.	Clear site of all bushes, tufts and any small or large trees, including grubbing out roots and burn on site where directed	SM	156		
7.1.2.	Excavate oversite to remove top vegetable soil average 300mm deep; dispose off site	SM	156		
7.1.3.	Ditto for foundation trenches from reduced level : not exceeding 1.50 metres deep	CM	81		
7.1.4.	Ditto for column bases from reduced level not exceeding 1.50 metres deep	CM	106		
7.1.8	Extra over all descriptions of excavations in compacted fill	CM	150		
7.1.5.	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	100		
	<u>Disposal of excavated material</u>				
7.1.6.	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	97		
7.1.7.	Remove surplus spoil from site and deposit in spoil heaps and later spread on site as directed	CM	90		
	<u>Planking and strutting</u>				
7.1.8.	Planking and strutting to sides of all excavations: keep excavations free from all fallen materials	ITEM	1		
	<u>Disposal of Water</u>				
7.1.9.	Keep excavations free from all water including spring or running water.	ITEM	1		
	<u>CONCRETE WORK</u>				
	<u>In situ concrete mix class 15 (20mm Maximum aggregate size): vibrated: reinforced</u>				
7.1.10.	50 mm Blinding to strips	SM	54		
7.1.11.	Ditto to column bases	SM	71		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>Insitu concrete class 25 (20mm Maximum aggregate size): vibrated: reinforced</u>				
7.1.12.	Strip foundation	CM	11		
7.1.13.	Stub columns	CM	8		
7.1.14.	Column bases	CM	22		
7.1.15.	Ground beam	CM	6		
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u>				
	<u>Ribbed bars to KS ISO 6935-2:2007</u>				
7.1.16.	Assorted sizes	KG	4190		
	<u>Sawn timber formwork or MS plate formwork: to</u>				
7.1.17.	Vertical: sides of foundations in trenches	SM	36		
7.1.18.	Ditto to stub columns	SM	83		
7.1.19.	Ditto to column bases	SM	71		
7.1.20.	Ditto to ground beams	SM	54		
	<u>WALLING</u>				
	<u>Approved natural stone or coral stone ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u>				
7.1.21.	200mm thick walling	SM	214		
	<u>EXPANSION JOINT</u>				
7.1.22.	30 mm thick approved expansion joint filler	SM	3		
7.1.23.	15mm x 30mm approved expansion joint sealer : raking out groove in concrete	LM	24		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>RC SUPERSTRUCTURE</u>				
	<u>In situ concrete class 25 (20mm Maximum aggregate size): vibrated: reinforced</u>				
7.1.24.	Columns	CM	9		
7.1.25.	Beam	CM	4		
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u>				
	<u>Ribbed bars to KS ISO 6935-2:2007</u>				
7.1.26.	Assorted sizes	KG	1750		
	<u>Sawn timber formwork or MS plate formwork: to</u>				
7.1.27.	To columns	SM	138		
7.1.28.	To beams	SM	36		
	<u>NATURAL STONE WALLING</u>				
	<u>Machine cut natural stone or machine cut coral stone or hollow concrete block walling ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u>				
7.1.29.	200mm. Thick walling	SM	207		
	<u>Pre-cast concrete class 20/20 concrete coping</u>				
7.1.30.	250 x 50 mm high precast concrete coping weathered and throated on both sides and jointed to wall in cement sand mortar 1:3 all to approval	LM	90		
7.1.31.	Ditto 500x500x100mm thick	NO	55		
	<u>EXPANSION JOINT</u>				
7.1.32.	30 mm thick approved expansion joint filler	SM	5		
7.1.33.	15mm x 30mm approved expansion joint sealer : raking out groove in concrete	LM	40		
	<u>FINISHES</u>				
7.1.34.	15mm Thick cement sand (1:3) rendering to columns to receive stone cladding;	SM	73		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
7.1.35.	15mm Thick cement sand (1:3) rendering to beams	SM	90		
7.1.36.	<u>Stone Cladding</u> 25mm thick polished mazeras stone cladding or other equal and approved to columns in cement and sand (1:3) mortar (m/s) with and including galvanised wire reinforcement; pattern to architect's approval	SM	73		
7.1.37.	<u>Key Pointing</u> Extra over dressed stone walling for neat recessed horizontal key pointing in 10mm thick rod in cement mortar (1:3) both internal and external sides of walling; one coat of bituminous paint.	SM	414		
	<u>Vehicular Gate at entrance and at jetty</u> <u>Vehicular gate of purpose made mild steel in 75 x 50 x 3mm thick RHS framing, bottom, top and middle rail; 50 x 50 x 3mm thick SHS internal members at 400 mm centres; 200mm wide x 3mm mild steel plate welded over framing and middle rails on both sides; with and including purpose made heavy duty hinges, lock bolt and other necessary ironmongery; prime before fixing; to architect's detail</u>				
7.1.38.	Overall size 6000 x 2400mm high	No	2		
	<u>Pedestrian Gate at entrance and at jetty</u> <u>Pedestrian gate of purpose made mild steel in 75 x 50 x 3mm thick RHS framing, bottom, top and middle rail; 50 x 50 x 3mm thick SHS internal members at 400 mm centres; 200mm wide x 3mm mild steel plate welded over framing and middle rails on both sides; with and including purpose made heavy duty hinges, lock bolt and other necessary ironmongery; prime before fixing; to architect's detail</u>				
7.1.39.	Overall size 1000 x 1950mm high <u>Prepare surface by sand blasting, apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint</u>	NO	2		
7.1.40.	To steel gates	SM	68		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>COLLECTION</u> <u>BOUNDARY WALL</u> Brought forward from page BW/1 Brought down from above page BW/2 Brought down from above page BW/3 Brought down from above page BW/4				
	TOTAL FOR BOUNDARY WALL CARRIED TO MAIN SUMMARY				

LAND RECLAMATION AND JETTY WORKS

BILL NO.8

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT 01-LAND RECLAMATION</u> (ALL PROVISIONAL)				
	<u>Site Preparation</u>				
8.1.1	Clear site of all obstacles, mangrove bushes, debris in water and dispose as directed by the Engineer on site.	SM	600		
	<u>Excavations in water</u>				
8.1.2	Excavate top soil to remove sea vegetation to a depth not exceeding 500mm, and dispose as directed by the Engineer.	CM	300		
8.1.3	Mechanical dredge excavation in water to remove water-logged loosed sand to a depth not exceeding 1.5m deep;	CM	900		
8.1.4	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	500		
8.1.5	Allow for keeping the whole of working area free from water; through mechanical means	Item	1		
8.1.6	Allow for maintaining and upholding sides of working area clear of all fallen material, rubbish e.t.c	Item	1		
8.1.7	Set out works over land and water to the approval of the Engineer.including confirmation of the sea bed depths/profile (in survey leves) along the sea wall	Item	1		
8.1.8	Remove surplus spoil from site and deposit in spoil heaps and later spreadon site as directed	CM	1200		
8.1.9	Provide and lay Imported and approved murram backfill or other approved materials to make up levels, well watered, rolled and compacted to 105% MDD (AASHTO T99)at optimum moisture content in 150mm thick Layers to Engineer's approval	CM	9000		
8.1.10	Provide and lay hardcore fill in making up levels, deposit and compacting in layers of 150mm maximum thickness	CM	300		
	<u>Quay Wall</u>				
8.1.11	Provide and consolidate in layers not exceeding 300mm sand fill from an approved source as directed by the Engineer.Rate to include furnishing material, transport,placing, leveling and others required.Compact to 105% MDD	CM	8350		
8.1.12	Provide and place approved 5.3mm thick geotextile filter cloth . (Rate to include cost of stitching the consecutive pieces of filter cloth together – overlaps to be 300mm).	SM	2960		
8.1.13	Provide and consolidate in layers not exceeding 300mm quarry run as directed by the Engineer.Rate to include furnishing material, transport,placing, leveling and others required.Compact to 105% MDD	CM	13500		
8.1.14	Provide and place Armour Rock (100-200kg) from an approved source. Rate to include furnishing material, transport,placing, leveling and others required.	CM	4320		
	TOTAL FOR LAND RECLAMATION CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT 02-JETTY (ALL PROVISIONAL)				
	Site Preparation				
8.2.1	Clear site and mechanically dredge under water of all obstacles from the sea bed to a depth not exceeding 1m and dispose as directed by the Engineer	CM	250		
	PILES The rates to include,mobilization,demobilization,setting out the piles and piling rig at each individual pile group, transfer to the next group and pitching the piles in position.				
8.2.2	Confirmation of the sea bed depths/land profile (in-survey levels) before the commencement of piling as directed by the engineer; set out in accordance with the drawings	SM	250		
	Main Piles				
8.2.3	Supply and assemble of 600mm dia Steel tubular LSAW pipes, thickness of 20mm; 22 no. to S355JOH specification	LM	946		
8.2.4	Strengthening steel plate at pile top and end for 600mm dia Steel tubular pile, S355JOH specification	NO	44		
	Extra over for:				
8.2.5	Pointed heads fitted to steel tubular pipe S355JOH specification	NO	22		
8.2.6	Rock shoes ditto	NO	22		
8.2.7	Cutting off the top of piles to required levels	NO	22		
	Corrosion Resistant Coating				
8.2.8	Prepare surface by sand blasting to SA 2.5 standard, Supply and apply approved corrosion resistant coating to steel tubular pile, solvent free epoxy at 1000 microns; including any necessary primer; apply strictly to manufacturer's printed instructions	SM	1782		
	Pile Protection				
8.2.9	Sacrificial anode,gross mass 100kg/anode for Cathodic Protection 3.5 including 50 years guarantee including transport, setting and any other accessories required	NO	22		
	Handling				
8.2.10	Handling,transportation and pitching of 600mm dia steel tunular pile; thickness of 20mm; length of 43m	NO	22		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	JETTY <i>Brought Forward</i>				
	<u>Driving of Piles</u>				
8.2.11	Driving of 600mm dia Steel tubular piles, thickness of 20mm in water and land; to approved required set using hydraulic impact hammer	LM	968		
8.2.12	Extra over driving in rock of any class; including coral rock	LM	968		
	<u>Pile Testing</u>				
8.2.13	Dynamic pile testing for 600mm dia Steel tubular pile, thickness of 20mm; 10%	NO	22		
8.2.14	Static pile test	NO	22		
8.2.15	Pile integrity test	NO	22		
8.2.16	Cross hole sonic logging test	NO	22		
8.2.17	Lateral and tension test	NO	22		
8.2.18	Provide all necessary equipment and carry out compression pile tests on vertical circular piles all in accordance with the specification or as directed by engineer	Item	1		
	<u>In situ; non-shrinking reinforced vibrated concrete ; class 35/20</u>				
8.2.19	In steel tubular pipe; with and including waterproofing admixture and approved curing agent; to be delivered by tremie pipe	CM	267		
8.2.20	Concrete plug ditto	CM	22		
8.2.21	Pile cap ditto	CM	16		
8.2.22	Beam ditto	CM	35		
8.2.23	Steps ditto	CM	5		
8.2.24	250mm thick slab; tamped to approved pattern ditto	SM	200		
8.2.25	200mm thick parapet wall ditto	SM	53		
	<u>Reinforcements</u>				
	<i><u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks with and including corrosion inhibitor; apply on the reinforcement steel surfaces to manufacturer's printed instruction: (Provisional) :-</u></i>				
	<i><u>Ribbed bars to KS ISO 6935-2:2007</u></i>				
8.2.26	Assorted bars	KG	51440		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	JETTY <i>Brought Forward</i>				
	<u>Marineply formwork or mild steel sheets as Described.</u> <u>Allow for setting to special steel propping, strutting, fillets, nails, etc to:</u>				
8.2.27	Soffits of suspended slabs	SM	190		
8.2.28	To sides of pile caps	SM	58		
8.2.29	To sides of beams	SM	71		
8.2.30	To sloping soffits of steps	SM	14		
8.2.31	To sides of RC parapet walls	SM	106		
8.2.32	Edges of suspended slab 150-225mm high	LM	74		
8.2.33	Edges of risers 75-150mm high	LM	36		
	<u>Handrail -Stainless Steel</u> Supply, assemble and fix 1050mm high purpose made stainless steel (marine grade 3.1.6) comprising of 50mm diameter solid stainless steel tube handrail welded to 50mm diameter solid stainless steel balusters at fixed to concrete floor at 1000mm centres; balusters fixed to and including 200mm x 150mm x 15mm thick stainless steel base plate fixed to concrete; complete with 4no. 25mm diameter solid horizontal middle rails ; including all necessary cleats, brackets,lugs stiffeners and the like; all to Architect's instructions and approval-STEPS	LM	11		
8.2.35	Ditto at edges of jetty	LM	55		
	<u>Mooring rings</u> Supply,deliver,assemble and fix 18mm dia x 125mm external dia marine grade 316 stainless steel mooring rings fixed to and including anti-corrosive wood with and including M10X100 bolts with washers; as per Eng. drawings.	NO	23		
8.2.37	<u>Bollards</u> Supply,deliver,assemble and fix in position hot dip galvanised morring bollards to BS 729; overall size 300mm dia x 500mm long; curved to profile; fixed to concrete with and including M10X200 bolts with washers	NO	23		
8.2.38	<u>Fenders</u> Pneumatic rubber fenders as specified by the engineer; including hot dip galvanised steel to BS 729 in fender piles,bolts,nuts,washers shackles and tensioners; including furnishing material, transport, setting and any other necessary accessories; overall size 1500 dia x 3000mm long,internal pressure at 80kpa. testing pressure at 250kpa, reaction force at GEA at 761 KN, overall weight at 580 kg	NO	5		
8.2.39	<u>Sleeves</u> 200mm diameter x 200mm long UPVC pipe sleeve ; casting into concrete slab	NO	5		
	TOTAL FOR JETTY CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
JETTY					
<u>SUMMARY PAGE</u>					
ITEM	DESCRIPTION			PAGE	AMOUNT
1	LAND RECLAMATION			JETTY/1	
2	JETTY			JETTY/4	
	TOTAL FOR JETTY CARRIED TO MAIN SUMMARY				

DRIVEWAY AND PARKING

BILL NO.9

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<i>(All rates are V.A.T Inclusive)</i>				
	<u>DRIVEWAY AND PARKING</u>				
	<u>Excavation and Earthworks</u>				
9.1.1	Clear site of all bushes, tufts and any small or large trees, including grubbing out roots and burn on site where directed by the project manager	SM	300		
9.1.2	Excavate oversite average 500mm deep and cart away or stock pile for re-use as directed by the project manager	CM	150		
9.1.3	Extra over all descriptions of excavations in compacted fill	CM	100		
9.1.4	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	50		
	<u>Disposal of excavated material</u>				
9.1.5	Load and cart away surplus material from the site as directed by the project manager.	CM	150		
	<u>Road formation and subbase</u>				
9.1.6	Trim and compact formation to correct levels, cross-falls and longitudinal falls	SM	300		
9.1.7	Provide and lay Imported and approved murrum backfill or other approved materials to make up levels, well watered, rolled and compacted to 100% MDD at optimum moisture content in 150mm thick Layers to Engineer's approval	CM	150		
9.1.8	Provide, lay and compact hand packed hardcore to maximum thickness of 300mm for the parking area. To atleast 100% MDD (AASHTO T99) compaction, including all necessary scarification and water in layers of at most 150mm.	SM	300		
9.1.9	50mm thick quarry dust or any other equal and approved material in blinding surface of hardcore	SM	300		
	<u>Herbicide Treatment</u>				
9.1.10	Herbicides to approval applied to the manufacturer's written instructions and subject to a TEN YEAR guarantee	SM	300		
	<u>Concrete Paving blocks</u>				
9.1.11	Provide, lay and compact 60mm thick medium duty paving blocks min strength 45N/mm2	SM	300		
	TOTAL CARRIED FORWARD				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	DRIVEWAY PARKING WORKS CONTINUED...				
	Precast Concrete Channels class 20/20				
9.1.12	Provide, lay and joint 200x100mm channel in and including concrete Class 20/20 bed and haunch. Include for all necessary excavation and formwork to Eng details	LM	103		
9.1.13	Ditto curved to plan	LM	5		
	Precast Concrete Kerbs class 20/20				
9.1.14	Provide, lay and joint 250x125mm precast concrete half battered kerb including Class 20/20 bed and haunch. Include for all necessary excavation and formwork to Eng details	LM	103		
9.1.15	Ditto curved to plan	LM	5		
	Walkway and Pavements				
	<u>Excavation and Earthworks</u>				
9.1.16	Clear site of all bushes, tufts and any small or large trees, including grubbing out roots and burn on site where directed by the project manager	SM	298		
9.1.17	Excavate oversite average 500mm deep and cart away or stock pile for re-use as directed by the project manager	CM	149		
9.1.18	Extra over all descriptions of excavations in compacted fill	CM	149		
9.1.19	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	50		
	<u>Disposal of excavated material</u>				
9.1.20	Load and cart away surplus material from the site as directed by the project manager.	CM	149		
	<u>Road formation and subbase</u>				
9.1.21	Trim and compact formation to correct levels, cross-falls and longitudinal falls	SM	298		
	TOTAL CARRIED FORWARD				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	DRIVEWAY PARKING WORKS CONTINUED...				
9.1.22	Provide and lay Imported and approved murram backfill or other approved materials to make up levels, well watered, rolled and compacted to 98% MDD at optimum moisture content in 150mm thick Layers to Engineer's approval	CM	149		
9.1.23	Provide, lay and compact hand packed hardcore to maximum thickness of 300mm for the walkway area. To atleast 100% MDD (AASHTO T99) compaction, including all necessary scarification and water in layers of at most 150mm.	SM	298		
9.1.24	50mm thick quarry dust or any other equal and approved material in blinding surface of hardcore	SM	298		
	Herbicide Treatment				
9.1.25	Herbicides to approval applied to the manufacturer's written instructions and subject to a TEN YEAR guarantee	SM	298		
	<u>Concrete Paving blocks</u>				
9.1.26	Provide, lay and compact 60mm thick medium duty paving blocks min strength 45N/mm2	SM	298		
	Precast Concrete Channels class 20/20				
9.1.27	Provide, lay and joint 200x100mm channel in and including concrete Class 20/20 bed and haunch. Include for all necessary excavation and formwork to Eng details	LM	338		
9.1.28	Ditto curved to plan	LM	10		
	Precast Concrete Kerbs class 20/20				
9.1.29	Provide, lay and joint 250x125mm precast concrete half battered kerb including Class 20/20 bed and haunch. Include for all necessary excavation and formwork to Eng details	LM	338	-	-
9.1.30	Ditto curved to plan	LM	10	-	-
	TOTAL CARRIED FORWARD				-

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	DRIVEWAY PARKING WORKS CONTINUED...				
	<u>STORM WATER DRAINAGE</u>				
	<u>Precast Concrete Invert Block Drains Class 20/20</u>				
9.1.31	300mm diameter round precast concrete invert blocks drain manufactured in accordance with BS 340 laid to slope and including 100mm murrum bed;including 600 x 225 x 75mm thick side slabs : jointed and pointed in cement and sand 1:3 mortar : on compacted murrum : as per Engineer's details jointing in cement and sand mortar;including all necessary excavations,strutting, formwork, reinforcements; all as per Eng details.	LM	85		
9.1.32	<u>BOX CULVERT</u> 2000 x 2000 x 400mm thick insitu vibrated reinforced concrete class 25/20 box culvert ;including 600mm high x 200 mm thick; laid on and including 50mm concrete class 15/20 blinding on 150mm hardcore filling; including all necessary excavations,strutting, formwork, reinforcements; all as per Eng details.	LM	7		
9.1.33	<u>Headwalls</u> Headwall comprising of 5000mm long x 2000mm high x 350mm thick insitu vibrated reinforced concrete class 25/20 on and including concrete class 25/20 base size 3900 x 950 x 480mm thick on 50mm concrete class 15/20 blinding;with 100mm thick quarry dust blinding on 150mm hardcore filling; including all necessary excavations,strutting, formwork, reinforcements; all as per Eng details.	NO	6		
9.1.34	<u>OPEN DRAINAGE</u> 600mm wide(internal) open "U" drainage in rectangular fair faced insitu vibrated reinforced concrete class 25/20;including 990mm high(internal) x 400 mm thick reinforced concrete walling in T10 and T8 bars, 400 mm thick bottom slab reinforced in T10 and T8 bars; ,50mm concrete class 15/20 blinding on 150mm hardcore filling; including all necessary excavations,strutting, formwork, plaster to all internal surfaces, plaster to all exposed external surfaces all as per Eng details.	64 LM			
	TOTAL CARRIED FORWARD				-

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9.1.35	DRIVEWAY PARKING WORKS CONTINUED... 600mm wide mild steel channel grating : comprising 40 x 40 x 6mm edge frame : infilled with 40 x 6mm flats at 50mm centres : 40 x 40 x 6mm frame set in concrete with 150mm long mild steel end split lugs : smooth weld joints; Prepare surface by sand blasting, apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint :	64	LM		
	TOTAL CARRIED FORWARD				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ROAD AND PARKING WORKS</u> Brought forward from page DW/1 Brought forward from page DW/2 Brought forward from page DW/3 Brought forward from page DW/4 Brought down from above page DW/5 above				
	TOTAL FOR DRIVEWAY AND PARKING WORKS CARRIED FORWARD TO GRAND SUMMARY				

FOUL DRAINAGE

BILL NO.10

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>EXTERNAL WORKS</u>				
	<u>ELEMENT NO. 1</u>				
	<u>EXTERNAL SOIL WATER DRAINAGE</u>				
10.1.1	Excavate trench for drain pipe average 1500 mm deep, part return fill and ram and remainder cart away	LM	120		
10.1.2	150 mm diameter "Golden Brown" UPVC pipe laid in trench and jointed	LM	120		
	Plain in situ concrete : class 15/20: as per Engineer's detail				
10.1.3	150mm bed and surround to 150mm diameter pipe : including all necessary formwork	LM	120		
	Manholes				
	The following manholes of various sizes to be executed in accordance with the Engineer's drawings, average depths as stated complete and including filling, 150mm thick masonry walling abd, 150mm thick concrete floor slab Class 25/20, concrete blinding and benching Class 15/20, 20mm diameter cast iron stepping irons where necessary; waterproof plaster to internal and external surfaces; complete with and including heavy duty double air seal cast iron cover and frame, all to Engineer's details. (Rate to include cost of all excavations, concrete, formwork, reinforcement, lifting key hole and associated works); prepare surface of steel by Sand blasting; prime with 2 pack epoxy zinc phosphate primer ; apply three coats of marine grade gloss oil paint				
10.1.4	Internal dimensions: 600x 450x 1000mm deep	NO	18		
10.1.5	Ditto 850x1200x1500mm deep	NO	3		
	Carried to Forward				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Brought forward from page FD/1				
	Gulley traps				
10.1.6	Supply and lay 730 x 730 x 500mm deep gulley traps complete with 400 x 400 x 10mm thick mild steel grating welded to 10mm thick mild steel frame at 30mm centres, hot galvanized and painted to approval [Rate to include excavation, 150mm thick plastered masonry walls, class 25/20 concrete base, concrete cover too receive grating and all surface finishes];prepare surface of steel by Sand blasting; prime with 2 pack epoxy zinc phosphate primer ; apply three coats of marine grade gloss oil paint; to Eng details	NO	8		
	Grease Trap				
	The following gulley trap to be executed in accordance with the Engineer's drawings, average depths as stated complete and including filling; 100mm thick concrete class 25/20 to external and internal walling; 150mm thick concrete floor slab Class 25/20, concrete blinding and benching Class 15/20, complete with and including heavy duty double air seal cast iron cover and frame, all to Engineer's details. (Rate to include cost of all excavations, concrete, formwork, reinforcement, lifting key hole and associated works); prepare surface of steel by Sand blasting; prime with 2 pack epoxy zinc phosphate primer ; apply three coats of marine grade gloss oil paint				
10.1.7	Internal dimensions size 1300x 500x 950mm deep	NO	1		
10.1.8	Extra over for back filling with selected imported material all to Project managers approval	CM	50		
	TOTAL OF EXTERNAL SOIL WATER DRAINAGE CARRIED TO ELEMENT SUMMARY				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 2</u>				
	<u>1NO. BIODIGESTER AND 1NO.BIOREACTOR-AS PER ENG DETAILS</u>				
10.2.1	Clear site of shrubs,grass and carting away the arisings	SM	102		
10.2.2	Excavate pit for biodigester not exceeding 1.5m deep	CM	153		
10.2.3	Ditto 1.5 - 3.0M deep	CM	153		
10.2.4	Ditto 3 - 4.5M deep	CM	26		
10.2.5	Extra over excavation in compacted fill	CM	100		
10.2.6	Extra over excavation in rock of any class	CM	50		
10.2.7	Return fill and ram selected excavated soil around walling	CM	50		
10.2.8	Cart away surplus excavated material	CM	282		
10.2.9	Planking and strutting to sides of all excavations: keep excavations free from all fallen materials	Item	1		
10.2.10	Allow for keeping the excavations free from all water by all means	Item	1		
10.2.11	50mm thick blinding class 15/20	SM	102		
10.2.12	200mm thick reinforced concrete class 25/20 slab in surface bed	SM	102		
10.2.13	200mm thick ditto to external walls	SM	114		
10.2.14	Ditto in baffle wall	SM	106		
10.2.15	200mm thick reinforced concrete class 25/20 in cover slab	SM	102		
	Marineply formwork to:				
10.2.16	Sides of Rc external walling	SM	228		
10.2.17	Soffits of suspended slap	SM	102		
10.2.18	Sides of scum baffle wall	SM	212		
10.2.19	Edges of base slab 150-225mm girth	LM	41		
10.2.20	Edges of base slab 150-225mm girth	LM	41		
10.2.21	Box out formwork to opening size 600x450mm	NO	10		
	Carried to Forward				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10.2.22	<u>High Tensile Reinforcement Bars to B. S. 4449</u> <u>including cutting, bending and all necessary spacer</u> <u>blocks : (Provisional) :-</u> Ribbed bars to KS ISO 6935-2:2007 Assorted sizes	KG	12720		
10.2.23	Form or leave hole in 200mm concrete walling for 100mm pipe including making good disturbed surfaces	NO	8		
10.2.24	15mm thick cement/sand (1:3) waterproof plaster to walls and soffit of cover slab	SM	404		
10.2.25	30mm thick cement/sand (1:3) waterproof screed to surface bed of internal floor	SM	84		
10.2.26	600x450mm heavy duty double air seal cast iron cover and frame	NO	10		
10.2.27	Soak Pit Provide materials and erect soak pit 1.2m internal diameter with 150mm thick perforated stone walling and 100mm thick concrete base class 25/20 and 150mm thick RC slab class 25/20 ; including 600 x 450mm heavy duty manhole cover and frame and 200mm dia crushed stone chips filling; allow for inlet; and all necessary excavations, reinforcement and formwork; to Eng details	NO	1		
	Carried to collection				
	<u>BIODIGESTER/BIOREACTOR</u> Brought forward from page FD/3 Brought down from page FD/4 above				
	SUB-TOTAL				
	NO (ONE BIODIGESTER AND ONE BIOREACTOR)				
	TOTAL OF BIODIGESTERS/BIOREACTOR CARRIED TO ELEMENT SUMMARY				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 3</u>				
	<u>PETROL INTERCEPTOR</u>				
10.3.1	Clear site of shrubs,grass and carting away the arisings	SM	8		
10.3.2	Excavate pit for petrol interceptor not exceeding 1.5m deep	CM	12		
10.3.3	Ditto 1.5 - 3.0M deep	CM	8		
10.3.4	Extra over excavation in rock of any class	CM	10		
10.3.5	Return fill and ram selected excavated soil around walling	CM	20		
10.3.6	Cart away surplus excavated material	CM	10		
10.3.7	Planking and strutting to sides of all excavations: keep excavations free from all fallen materials	Item	1		
10.3.8	Allow for keeping the excavations free from all water by all means	Item	1		
10.3.9	50mm thick blinding class 15/20	SM	8		
10.3.10	200mm thick reinforced concrete class 25/20 slab in surface bed	SM	7		
10.3.11	150mm thick ditto	SM	1		
10.3.12	200mm thick ditto to external walls	SM	24		
10.3.13	150mm thick ditto	SM	2		
10.3.14	200mm thick Rc walls in baffle wall	SM	7		
10.3.15	200mm thick reinforced concrete class 25/20 in cover slab	SM	8		
	Marineply formwork as before described to:				
10.3.16	Sides of Rc external walling	SM	52		
10.3.17	Soffits of suspended slap	SM	8		
10.3.18	Sides of scum baffle wall	SM	14		
10.3.19	Edges of base slab 150-225mm girth	LM	12		
10.3.20	Ditto 75-150mm girth	LM	2		
	Carried to Forward				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10.3.21	Edges of suspended slab 150-225mm girth	LM	13		
10.3.22	Box out formwork to opening size 600x450mm	NO	4		
10.3.23	Box out formwork to opening size 800x800mm	NO	1		
10.3.24	<u>High Tensile Reinforcement Bars to B. S. 4449</u> <u>including cutting, bending and all necessary spacer</u> <u>blocks : (Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007</u> Assorted sizes	KG	1448		
10.3.25	Form or leave hole in 200mm concrete walling for 100mm pipe including making good disturbed surfaces	NO	7		
10.3.26	15mm thick cement/sand (1:3) waterproof plaster to walls and soffit of cover slab	SM	37		
10.3.27	30mm thick cement/sand (1:3) waterproof screed to surface bed of internal floor	SM	6		
10.3.28	600x450mm heavy duty double air seal cast iron cover and frame	NO	4		
10.3.29	Ditto 800x800mm	NO	1		
	Carried to collection				
	<u>BIOREACTOR</u> Brought forward from page FD/5 Brought down from page FD/6 above				
	TOTAL OF PETROL INTERCEPTOR CARRIED TO SUMMARY				
	<u>SUMMARY</u> <u>ELEMENT</u> 1 External soil water drainage 2 1No.Biodigester/1No.Bioreactor 3 Petrol Interceptor				
	TOTAL FOR EXTERNAL FOUL WATER DRAINAGE CARRIED TO MAIN SUMMARY				

UNDERGROUND WATERTANK

BILL NO.11

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	UNDERGROUND WATERTANK ELEMENT 01 (ALL PROVISIONAL)				
	Site clearance				
11.1.1	Clear the site of all bushes, grass, shrubs, undergrowth and small trees not exceeding 600mm girth and burn arising	SM	40		
	Excavation				
	<u>Excavation including maintaining and supporting sides and keeping free from water, mud and falling materials; No allowance is made in the excavations for working space; contractor to factor in working space in his rates:</u>				
11.1.2	Excavate oversite to remove top vegetable soil average 150mm deep; disposing off site average 50m away from excavations	SM	40		
11.1.3	Excavate pit for watertank commencing at reduced level not exceeding 1.50 metres deep	CM	56		
11.1.4	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	56		
11.1.5	Ditto but exceeding 3,0 m deep but not exceeding 4.5m deep	CM	49		
11.1.6	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	50		
	Dewatering				
11.1.7	Allow for keeping the excavations free from all water including spring and running water	Item			
	Planking & Strutting				
11.1.8	Allow for planking and strutting sides of excavations and keeping excavations clear of all fallen material, rubbish, etc	Item			
	Disposal				
11.1.9	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	20		
11.1.10	Load and cart away from site surplus excavated material as directed	CM	161		
11.1.11	300mm thick hardcore fill in making up levels, deposit and compacting in layers of 150mm maximum thickness	SM	37		
11.1.12	50mm thick stone dust blinding to surfaces of hardcore fill	SM	37		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	UNDERGROUND WATERTANK				
	<i>Brought Forward</i>				
	Insitu Concrete				
	Mass concrete class 15/20				
11.1.13	50mm thick blinding mass concrete to bottoms of watertank slab	SM	37		
	Reinforced vibrated insitu concrete; class 25/20mm to:-				
11.1.14	300mm thick RC walls	SM	79		
11.1.15	200mm thick suspended slab	SM	27		
11.1.16	250mm thick base slab	SM	37		
11.1.17	Beams	CM	1		
	Sumps				
11.1.18	Extra over reinforced concrete floor slab; overall size 500 mm long x 500 mm wide; average depth of 500 mm (internal dimensions) including for all necessary excavations, earthworks, formwork and concrete work	NO	1		
	Reinforcements				
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u>				
	<u>Ribbed bars to KS ISO 6935-2:2007</u>				
11.1.19	Assorted sizes	KG	7083		
	Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to:				
11.1.20	Sides of RC walls	SM	158		
11.1.21	Sides of beams	SM	10		
11.1.22	Soffits of suspended slab	SM	27		
11.1.23	Edges of base slab; 150-225mm high	LM	25		
11.1.24	Edges of suspended slab; 150-225mm high	LM	21		
11.1.25	Box out formwork to opening size 600x450mm	NO	2		
	Water bars				
11.1.26	400 x1.5mm upvc water bar, set vertically in concrete wall	LM	20		
	Finishes				
11.1.27	15mm thick cement/sand (1:3) waterproof plaster to walls and soffit of cover slab	SM	92		
11.1.28	30mm thick cement/sand (1:3) waterproof screed to surface bed of internal floor	SM	21		
	Supply and apply two component flexible cementitious waterproofing treatment to concrete surfaces; suitable for portable water; applied strictly to manufacturer's instructions; provide a 10 year Gurantee				
11.1.29	Waterproofing to concrete base slab	SM	21		
	Total Carried to next page				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	UNDERGROUND WATERTANK				
	<i>Brought Forward</i>				
11.1.30	Waterproofing to concrete walls and cover slab	SM	92		
11.1.31	600x450mm heavy duty double air seal cast iron cover and frame	NO	2		
	Sumps				
11.1.32	Extra over reinforced concrete floor slab;overall size 500 mm long x 500 mm wide; average depth of 500 mm (internal dimensions) including for all necessary excavations, earthworks, formwork and concrete work	NO	1		
	Soil Vent Pipe				
11.1.33	110mm diameter weathering apron medium grade grade soil vent pipe and fitting-2000mm long	NO	2		
	Accessories				
11.1.34	3 Metre Heavy duty Aluminium cat ladder from the top to bottom of the tank base complete with fixing to detail;	NO	2		
11.1.35	Making holes through 200mm thick concrete wall for sleeves	NO	2		
	TOTAL FOR UNDERGROUND WATERTANK CARRIED TO MAIN SUMMARY				

LANDSCAPING

BILL NO.12

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>LANDSCAPING WORKS</u>				
	<u>ELEMNET NO 1.</u>				
	<u>GROUND PREPARATION AND GRASSING</u>				
	<u>Clearing and Levelling</u>				
12.1.1	Clear the site of all existing unwanted materials and scarify oversite commencing from main Contractor,s reduced levels, average 150 mm deep to allow for water seepage and retention remove all hardened ground, weeds and any deleterious materials; including carting away all arising wastes, raking and fine levelling of the ground.	SM	500		
12.1.2	Approved imported red soil filling to receive planters irrespective of size and spread; spread at varying depths as directed by the landscape architect or Project Manager	CM	150		
12.1.3	<u>Supply and application of Manure.</u> Supply and apply prime quality fertilizers or compost manure at designated locations and as directed by the landscape architect or Project Manager	SM	500		
	<u>Supply and Installation of Grass and Lawns</u>				
	Supply, plant, water, weed and tend well undermentioned grass sprigs untill fully established / to reasonable maturity. Grass should also be rolled with a light weight roller to even out 'bumby' areas. This should be carried out one to two weeks after installation				
12.1.4	Pemba grass springs spaced at 100mm centres both ways	SM	300		
	<u>Planting of ground Covers</u>				
12.1.4	Clear site, level,excavate pits,supply,import red soil with manure,plant,weed,water and tend well assorted species of ground covers till full establishment as per the designs of the landscape architect or as directed by the Project Manager	SM	100		
	<u>Planting of Shrubs</u>				
12.1.5	Clear site, level,excavate pits,supply,import red soil with manure,plant, weed, water and tend well assorted species of Shrubs; till full establishment/reasonable maturity as per the designs of the landscape achitect or as directed by the Project Manager	SM	100		
	TOTAL CARRIED FORWARD				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN
LAMU COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	LANDSCAPING WORKS CONTINUED...				
	BROUGHT FORWARD FROM PAGE LW/1				
	<u>Clear site, excavate pit, supply, import red soil with manure, plant, weed, water and tend well under-mentioned trees/large shrubs till full establishment/reasonable maturity and support the same with strong bamboo stakes, adequate in thickness for each tree.</u>				
12.1.6	Assorted Species of Palm trees and other ornamental trees as per the designs of the landscape architect or as directed by the project manager	NO	40		
12.1.7	Assorted Species of other indigenous trees as per the designs of the landscape architect or as directed by the project manager.	NO	30		
	<u>MAINTENANCE</u>				
12.1.8	Allow for a follow up of all installations and constructions to insure establishment and concept preservation. Mowing, watering, training and trimming all included	Months	6		
	<u>LITTER BINS</u>				
	<u>Supply, deliver and install litter bins to specification</u>				
12.1.9	Supply and install standard round swivel openable litter bin of galvanised steel with detailed pattern perforation, fixing to concrete footing or any other approved by project architect; overall size 600mm dia x 1500mm high	NO	6		
	TOTAL LANDSCAPING WORKS CARRIED FORWARD TO GRAND SUMMARY				

MECHANICAL WORKS

BILL NO.13

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>BILL 13. MECHANICAL WORKS:</u>				
	<u>ELEMENT NO. 1 (INTERNAL PLUMBING):</u>				
	<i>Supply, deliver and install pipes, tubing and fittings as described and shown on the drawings. The pipes shall be PN 25PPR pipes where exposed to adverse weather conditions and all conforming to the current European standards for PPR installations and to the Engineers Approval. Pipe jointing shall be by polyfusion or use electric coupling, Rates must allow for all metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints support raceways, isolating sheaths, elastic materials, expansion arms and bends cross overs, couplings, clippings, connectors, joints etc. as required in the running legths of pipe work and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system. The pipes will be pressure tested before the plastering of wall commences and as per the manufactures recommended testing pressures</i>				
	<u>PPR Pipes</u>				
13.1.1	25mm diameter pipe	50	LM		
13.1.2	32mm Ditto	40	LM		
13.1.3	40mm Ditto	30	LM		
13.1.4	50mm Ditto	45	LM		
13.1.5	63mm Ditto	50	LM		
	<u>Sockets;</u>				
13.1.6	25mm diameter socket	20	No.		
13.1.7	32mm ditto	10	No.		
13.1.8	40mm Ditto	20	No.		
13.1.9	50mm Ditto	22	No.		
13.1.10	63mm Ditto	15	No.		
	<u>Tees;</u>				
13.1.11	25mm diameter PPR equal tee	23	No.		
13.1.12	32mm diameter PPR equal tee	12	No.		
13.1.13	40mm diameter PPR equal tee	15	No.		
13.1.14	50mm diameter PPR equal tee	25	No.		
13.1.15	63mm diameter PPR equal tee	20	No.		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
	<u>Bends</u>				
13.1.16	25mm diameter bends	15	No.		
13.1.17	32mm ditto	10	No.		
13.1.18	40mm Ditto	15	No.		
13.1.19	50mm Ditto	16	No.		
13.1.20	63mm Ditto	12	No.		
	<u>Tees</u>				
	Extra over GI tubing for the following:				
13.1.21	25mm diameter PPR 90° elbow	25	No.		
13.1.22	32mm diameter PPR 90° elbow	15	No.		
13.1.23	40mm diameter PPR 90° elbow	20	No.		
13.1.24	50mm diameter PPR 90° elbow	20	No.		
13.1.25	63mm diameter PPR 90° elbow	10	No.		
	<u>Reducers</u>				
13.1.26	50x32mm diameter PPR reducer tees	15	No.		
13.1.27	50x40mm diameter PPR reducer tees	10	No.		
13.1.28	63x50mm diameter PPR reducer tees	15	No.		
13.1.29	80x50mm diameter PPR reducer tees	10	No.		
	<u>Threaded Fittings</u>				
13.1.30	50 x 1"ø ditto Male threaded adaptors	12	No.		
13.1.31	25 x 3/4"ø dia Male threaded adaptors (Brass threads)	25	No.		
13.1.32	32 x 1"ø ditto	30	No.		
13.1.33	50 x 1 1/2"ø dia Male threaded adaptors	24	No.		
13.1.34	63 x 1 1/2"ø dia Male threaded adaptors (Brass thread)	10	No.		
	<u>Nipples</u>				
13.1.35	25mm diameter G.I. nipple	20	No		
13.1.36	32mm ditto	20	No.		
	<u>Valves</u>				
13.1.37	25mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 5154 PN 20 for series B rating,with wheel and head jopints to steel tubing and complete with round male threaded transion fittings.	14	No.		
13.1.38	32mm ditto	6	No.		
13.1.39	40mm ditto	6	No.		
13.1.40	50mm ditto	6	No.		
	TOTAL INTERNAL PLUMBING CARRIED FORWARD TO BILL NO. 13 SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	ELEMENT NO. 2: <u>SANITARY FITTINGS:</u> Supply,deliver,install,test and commission the following sanitary appliances complete with all the accessories including all connections to the services,waste,jointing to water supply,overflows,supports and all plugging and screwing to walls and floors. <u>Note.</u> (i). All sanitary fittings shall be in approved colour. (ii). The model and Ref. No. Indicated is only a guide to the type and quality of fittings. (iii). Equivalent and Approved models may be acceptable <u>Squatting Water Closet</u> 600X500X300mm Ceramic Asian toilet suite in approved colour comprising of squatting pan,'p'or's' trap connectora, complete with horizontal outlet to BS 3402 with cocealed 32mm (1.25") Brass flush valve soft touch with dual Flow System and square cover push button <u>Pedestal wash hand basin</u> Wash Hand Basin with pedestal size 510x420mm with one tap hole and chain stay hole,32 mm diameter chrome-plated pop up chain waste and fittings,approved first quality plastic bottle trap(32mm bottle trap) with 75mm seal.The wash hand basin to be as approved.The basin to be supplied and installed complete with 15mm diameter heavy duty Brass Pillar Tap. 450 x 280 mm counter top washhand basin with single taphole wall bracket and taphole plug, push delay tap, c/w Push open slotted basin, waste 1.25in #A38, bottle Trap 1.25". <u>Toilet Roll Holder</u> Semi recessed toilet roll holder in Vitreous China of size 165 x 165mm in approved colour as approved. <u>Soap Dispenser</u> Wall mounted soap dispenser with a capacity of about 1.5 Litre and having a press action soap release mechanism complete with fixing screws.including allowing for initial soap supply as approved.The soap dispenser shall be size125x100x290mm high and shall be as approved.				
13.2.1		4	No.		
13.2.2		3	No		
13.2.3		7	No		
13.2.4		12	No.		
13.2.5		6	No		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
	<u>Mirrors</u>				
13.2.6	610 X 610 X 6mm thick polished plate silver backed with beveled edges mirror fixed with clear silicon to 100 x 25mm thick wrot mahogany molded framing in 4 labors plugged to wall using 4No. Wall plugs with 75mm long stainless steel screws, painted in three coats polyurethane varnish all to approval	12	No		
	<u>Bib Tap</u>				
13.2.7	15mm diameter heavy duty chrome plated bib tap to an approved catalogue	5	No		
	<u>Flexible Tubing</u>				
13.2.8	15mm diameter x 300mm longg flexible connectors complete with Integral brass angle valve for connecting the Sanitary fitting to water supply, to be as approved.	14	No.		
	<u>Robe Hook</u>				
13.2.9	Robe hook mounted to concealed screw to wall wedges as approved	10	No.		
	<u>Shower Fittings</u>				
13.2.10	Concealed shower fitting consisting of 25mm diameter x 2500mm long PPR riser pipe for showers,25mm diameter Stainless Steel cold water swivel/adjustable shower rose, handle and Stop Cock	2	No.		
	<u>Close Couple Water Closet Suite</u>				
13.2.11	Close Couple water closet suite in approved colour comprising of W.C. bowl,'p'or's' trap connector,heavy duty matching plastic seat and cover with metal top fixed to (chrome plated) hinges and secured to floor or wall and complete with horizontal outlet to BS 3402 with 6 litre valveless Ceramic cistern and fittings including siphon,15mm diameter side inlet ball valves,20mm diameter side overflow,plastic flush bend,inlet connection,and chrome-plated lever.	2	No.		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE Disabled persons Water Closet and Wash Hand Basin Facility Wheel chair accessible W.C facility Comprising of the following:- (i) Close coupled W.C with 7.5 litre cistern with bottom inlet and overflow.The bowl shall e of size 375 x 560 x 420mm high.The bowl and cistern shall be manufactured from vitreous china complying with B.S 3402.The unit shall be complete with valveless cistern fitting including syphon,15mm side inlet ball valve,20mm diameter side overflow,plastic flush bend,inlet connector and reversible metallic chrome plated cistern lever.There shall also be a heavy duty seat(25mm high) and cover with chrome plated metal hinges,toilet roll holder,900 x 450 x 6mm thick mirror and Robe hook (ii) Semi-recessed wall mounted W.H.B of size 600 x 500 x 545mm high with flexible connectors to water taps.The basin shall be manufactured from vitreous china complying with B.S 3402.It shall have one L/H tap hole with 15mm chrome plated lever action pillar tap,chrome plated waste,first quality bottle trap,pedestal and wall fixing bolts. (iii) Hinged support rail with toilet roll holder 770mm long manufactured in nylon coated aluminium and mounted on a wall fixing plate size 230x100mm,4No. 600mm grab rails with covered wall plates. <u>Urinal System</u> Urinal Bowl Urinal Bowl with concealed pipework complete with pair of bowl supports Plastics complete with '1 ½ diameter domed outlet plated urinal grating Urinal Bowl Accessories Chrome plated, push button ¾" flush master junior exposed urinal flush valve, top entry with intergral ball-o-stop valve and wall plate complete with; exposed chrome plated urinal flush and tall pipe with inlet adaptor and backmount spary rose/spreader.The fittings shall be as 'Docol' or equal and approved. and c/w 1½ ' diameter plastic bottle P-Trap with plastic extension pipe to wall and wall flange Urinal Division Standard Ceramic Urinal divisions	4	SET		
13.2.12					
13.2.13		3	No.		
13.2.14		3	No.		
13.2.15		5	No.		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
13.2.16	<p><u>Soap dish</u> Semi recessed built in soap dish in vitreous china of size 150x150mm in approved colour as approved .</p>	2	No.		
13.2.17	<p><u>Towel Rail</u> Stainless Steel 20mm diameter x 800mm long approved towel rail and brackets as one piece, plugged and screwed (stainless steel screws) into the wall. The fitting ball shall be as approved.</p>	2	No		
13.2.18	<p><u>Single Bowl Drop-in Sink</u> Heavy Duty 16SWG Stainless Steel (Grade 316) Single bowl sink,Size 510x310x225mm deep suitable for mounting on counter as manufactured by an approved manufacturer, complete with heavy duty swivel high/long neck brass pillar tap as approved.It shall also comprise of 40mm diameter stainless steel sink waste fitting,chain and plug and 40mm diameter x 75mm deep seal first quality chrome plated Bottle Trap,all to approved catalogue.</p>	7	No.		
13.2.19	<p><u>Double bowl, no drainer kitchen sink</u> 16SWG Double Bowl,no Drainer, stainless steel (Grade 316) kitchen sink suitable for mounting on terazzo counter top.The bowl size to be 450x420x 300mm deep complete with plastic 40mm diameter waste fittings,plugs,chain stays,overflow including 1No.15mm diameter heavy duty wall mount stainless steel bib tap.</p>	4	No.		
13.2.20	<p><u>Four Wheel Waste Bin</u> 660 litres Heavy Duty Polyethene four wheel waste bin with snap fit lid, locking handle and 4No. Wheels. All to approval</p>	4	No		
	TOTAL SANITARY FITTINGS CARRIED FORWARD TO BILL NO. 13 SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>ELEMENT NO.3:</u>				
	<u>DRAINAGE:</u>				
	Supply,deliver and install the following UpVC,MUpVC,soil and waste systems,respectively to B.S 5255 with fittings fixed Key Terrain High Grade Golden Brown and Grey UPVC soil and waste pipe and jointing in accordance with manufacture's printed instructions and manufactured by reputable manufacturers.Tenderers must allow in their pipework prices for all the couplings,clippingsconnectors,joints,e.t.c as required in the running lengths of pipework and also where necessary,for pipe fixing clips,holder bats plugged and screwed for the proper and satisfactory functioning of the system				
	<u>Internal:</u>				
13.3.1	40mm diameter Grey UPVC waste pipe in wall chase.	50	LM		
13.3.2	50mm ditto but boxed in concrete floor slab	60	LM		
13.3.3	100mm ditto	50	LM		
13.3.4	150mm ditto	60	LM		
	<u>Extra Ovetubing For:-</u>				
13.3.5	100x50mm diameter UPVC floor trap,grating and cover	6	No		
13.3.6	100mm diameter WC connector	11	No		
	<u>External:</u>				
13.3.7	100mm diameter Grey UPVC soil vent pipe with expansion coupling and fixing to wall with holder bats ducts	16	LM		
13.3.8	100mm diameter Golden Brown UPVC waste pipe in soil	55	LM		
13.3.9	200mm by 200mm u-shaped steel drainage channel	60	LM		
13.3.10	100mm dia Fulbora Outlets	8	No		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	ELEMENT NO. 4: STERILIZATION AND TESTING: Allow for sterilization and flushing out of entire cold water installation with chlorine to the Engineer's Satisfaction Ditto for setting to work and testing the whole of the plumbing and drainage installation works both during progress and at completion to the satisfaction of the Engineer's satisfaction and to leave the whole installation in good working condition	1	ITEM		
		1	ITEM		
	TOTAL TESTING CARRIED FORWARD TO BILL NO. 13 SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>ELEMENT NO. 5:</u>				
	<u>ICE FLAKE MACHINE, ROOM INSULATION AND ACCESSORIES:</u>				
	Supply, deliver, install, test and commission the following Ice Flake Machine, Equipment and accessories as herebelow described and to position indicated on mechanical drawings and as instructed by the Engineer:-				
	The works under this category should be done by an approved sub-contractor				
	<u>Ice Flake Machine</u>				
13.5.1	Modular Ice Flake Machine (Production Capacity 3T/24h, Refrigerating capacity 18Kw, Evaporating temperature -22°C, Power consumption 17.5kW, Approx dimensions 2000 X 1600 X 1490mm) comprising of an air cooled condenser, gear motor, water pump, salt mix pump control box and control panel with PLC , Low water sensor protection, Ice level thermostat, Ice knife and construction made from stainless steel, base frame made from galvanized steel, ice drum/cylinder with stainless steel inner and outer wall fitted with semi-hermetic compressors, stainless steel ball bearings including all other accessories for proper functioning of the unit. The unit shall be as approved and to approved catalogue	1	No		
	<u>Refrigeration Pipework</u>				
13.5.2	A set of Refrigeration Pipework complete with flared connections and fittings in approved copper tubing approx.10metres long,including flexible condensate drip line approx.6.0metres long,properly fixed and encased in 20mm diameter black PVC Conduit in conformity with 'APPROVED REFRIGERATION MANUAL'.The suction line shall be insulated with at least 25mm thickness of Armaflex or other equal and approved material	1	ITEM		
	<u>Testing</u>				
135.3	Allow for testing of the above Ice Flake Machine both during progress of installation and at completion to the Engineers satisfaction,including initial charging of the system with Refrigerant gas R.410A or other equal and approved and to leave the system in good and sound working condition	1	ITEM		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
13.5.4	Allow for the instruction and training to the client staff (2 no.) on the operation and maintenance of the ice flake production plant for a period of not less than Two (2) weeks. The contractor to allow for structured training on all equipment on content to be agreed upon with the Engineer or his representative.	1	ITEM		
13.5.5	Allow for initial service and maintenance including spare parts for the ice flake production plants during the six months' defects liability period	1	ITEM		
13.5.6	Allow for the preparation of record (as installed) drawings and preparation of 2 No. sets of Maintenance and operation manuals	1	ITEM		
	<u>Ice flakes collection room</u>				
13.5.7	Double rebate type cold room door size 900mm wide x 2100mm high constructed from stainless steel tubes mullions transomes with interior lining to match the walls.	1	No		
13.5.8	Supply and install 100mm thick polystyrene insulation fixed to floor between 100 x 50 x 3mm kitchen grade stainless steel RHS bearers plugged to floor slab to receive 5mm thick Non-slip checkered stainless steel plate on the floor spaced at 1000mm center all to approval	11	sm		
13.5.9	Ditto but on the walls	30	sm		
13.5.10	Ditto but on the roof	10	sm		
13.5.11	Supply and install 0.5mm thick 304 Stainless Steel (grade 304) Sheet fixed firmly on the cold room walls and the ceiling complete with the corner panels. The cost to include any other accessory necessary for the installation.	25	sm		
13.5.12	Supply and install 5mm thick Non-slip checkered stainless steel flooring for the cold room, to be firmly fixed on the floor all to approval. The cost to include any other accessory necessary for the installation.	11	sm		
13.5.13	Allow for application of an approved vapour barrier on the walls and water proofing of the floor to the satisfaction of the Engineer.	1	ITEM		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>ELEMENT NO.6:</u>				
	<u>BUILDER'S WORK IN CONNECTION WITH PLUMBING AND DRAINAGE</u>				
	<u>Masonry Gulley Trap</u>				
13.6.1	Construct masonry gulley trap size 200x200mm, approx depth 300mm, complete with seal and Fibre Reinforced Plastics cover, including all disposal and form work	12	No.		
	<u>Manholes and Covers</u>				
13.6.2	Construct Manholes size 600 x 450mm and averaging 750mm deep constructed in 100mm thick concrete base class 15/20, approved 150mm block sides rendered all around in cement and sand (1:4). It shall have an approved Fibre Reinforced Plastics cover to approval, including all necessary excavations, disposal and form work.	19	No.		
	<u>Excavations</u>				
13.6.3	Excavate trench not exceeding 1.5m deep, average depth 600mm for laying of drain pipes as earlier described, part back fill, part load and cart away remainder	70	LM		
	<u>Chasing</u>				
13.6.4	Form chase in both 100mm and 200mm thick coral block wall to receive necessary pipe work and make good disturbed areas	50	LM		
	<u>Holes</u>				
13.6.5	Make a hole through 100mm thick coral block wall for small pipe and make good disturbed areas	8	No.		
13.6.6	Ditto but 200mm thick and for large	6	No.		
	TOTAL BUILDERS WORK CARRIED FORWARD TO BILL NO. 13 SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	ELEMENT NO.7:				
	<u>WATER RETICULATION - ALL PROVISIONAL</u>				
	<u>Roof Top Water Tanks</u>				
13.7.1	Supply, deliver and install vertical close end plastic moulded tank of capacity 1,000 litres and (size 1160mm diameterx 1100mm high). The tank to be assembled complete with cover and having screwed connections fo inlet, outlet, overflow, 32mm high pressure ball valve, drain pipes and any other item necessary for its proper functioning. The tank shall be as approved	2	ITEM		
13.7.2	Supply, deliver and install vertical close end plastic moulded tank of capacity 2,000 litres and (size 1340mm diameterx 1460mm high). The tank to be assembled complete with cover and having screwed connections fo inlet, outlet, overflow, 32mm high pressure ball valve, drain pipes and any other item necessary for its proper functioning. The tank shall be as approved	3	ITEM		
	<u>Excavations</u>				
13.7.3	Excavate trench in soil/murram for Water Mains supply pipe not exceeding 1200mm deep ,lay pipe, part return in,fill ram and surplus cart away	40	LM		
	<u>Pipe Work</u>				
13.7.4	50mm diameter PPR (PN-20) pump suction lines	25	LM		
13.7.5	50mm ditto but delivery lines	20	LM		
13.7.6	40mm diameter (PN-20) PPR Riser in wall duct and on roof terrace	20	LM		
13.7.7	50mm distribution pipework laid and jointed on roof terrace and pipe drop	30	LM		
13.7.8	40mm diameter (PN-20) PPR distribution Pipe laid and jointed in trench	40	LM		
13.7.9	50mm ditto	50	LM		
13.7.10	32mm diameter (PN-20) PPR Pipe laid and jointed in trench from water mains	24	LM		
13.7.11	40mm ditto	40	LM		
	<u>Sockets:</u>				
13.7.12	32mm diameter PPR Sockets	8	No.		
13.7.13	40mm ditto	10	No.		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
13.7.14	50mm ditto	15	No.		
	<u>Bends</u>				
13.7.15	32mm diameter bend/Elbow	3	No.		
13.7.16	40mm ditto	5	No.		
13.7.17	50mm ditto	4	No.		
	<u>Tees</u>				
13.7.18	40mm diameter (PN-20) PPR equal tee	1	No.		
13.7.19	50mm ditto	2	No.		
	<u>Valves</u>				
13.7.20	40mm diameter supply mains full way gate valve as approved	1	No.		
13.7.21	50mm ditto	3	No.		
	<u>Water Connection to Supply mains & Testing</u>				
13.7.22	50mm diameter G.I. equal tee	4	No		
13.7.23	50x40mm diameter G.I. reducer	3	No		
13.7.24	40mm diameter G.I. nipple	2	No		
13.7.25	50mm diameter PPR Adaptor	1	No		
13.7.26	40mm diameter full Way gate valve as approved	4	No		
	<u>Stand Pipe</u>				
13.7.27	15mm diameter bib tap suitable for connecting to a hose pipe complete with threaded adaptors.The tap to be complete with 5-metre long 20mm diameter pipe,bends,e.t.c.The chrome plated bib tap to be as approved	4	ITEM		
	<u>Mains Valve Chamber</u>				
13.7.28	Construct Mains Valve Chamber size 600x600x500mm deep with 100mm thick class 20/20 concrete block rendered all round in cement and and sand mortar (1:4) including hinged iron cover and frame in grease	1	ITEM		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
	<u>Booster Pump Sets</u>				
13.7.29	Booster Pump Sets (2No) for Roof Top water Tanks (M/S) mounted on a common Mild Steel base Frame and to approval,each set comprising of, One pump duty, One pump stand by, and each of capacity 8m³/hr against a Maximum Head of 20(metres) as approved. Each pump set shall be complete with control panel, MCBs, Pressure and Float switches, Overload protection, ON/OFF Buttons, Indicator Lights, Non -Return and Gate valves, and a Pressure Vessel of Approx Capacity 60Litres as approved including all other accessories for proper fuctioning. The pumps shall be connected in that when the Running Duty pump fails the Standby Pump starts up automatically.	1	ITEM		
	<u>Testing</u>				
13.7.30	Allow for connecting the above earlier described Booster pumps to the pump delivery and suction lines, including Test Pumping and testing the whole of the water Reticulation system both during progress and at commissioning to the Engineer's satisfaction and to leave the system in and good sound working condition	1	ITEM		
	<u>Hose Reel Booster Pump Set</u>				
13.7.31	Booster Pump Set for Hose Reels consisting of 2No. parallel duty pumps mounted on a common Mild Steel base Frame to approval,each of capacity 12m³/hr against a Maximum Head of 30(metres) . The pump set shall be complete with control panel, MCBs, Pressure and Float switches, Overload protection, ON/OFF Buttons, Indicator Lights, Non -Return and Gate valves and a Pressure Vessel of Approx Capacity 100Litres including all other accessories for proper fuctioning. The pumps shall be connected in that when the Running Duty pump fails the Standby Pump starts up automatically.	ITEM	1		
	<u>Testing</u>				
13.7.32	Allow for connecting the above earlier described Booster pumps to the pump delivery and suction lines, including Test Pumping and testing the whole of the water Reticulation system both during progress and at commissioning to the Engineer's satisfaction and to leave the system in good and sound working condition	ITEM	1		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
	<u>Surface Mounted Water Storage Tanks</u>				
13.7.33	Supply, deliver and install vertical close end plastic moulded water storage tank of capacity 20,000 litres and (size 3370mm diameterx2550mm high) . The tank to be assembled complete with cover and having screwed connections fo inlet, outlet, overflow, 32mm high pressure ball valve, drain pipes and any other item necessary for its proper functioning.. The tank shall be installed on a reinforced flat surface platform base approx. 900mm high (M/S) and shall be as approved	2	ITEM		
	<u>Tank Base</u>				
13.7.34	Allow for the construction of the above mentioned tank base Approx.size 40000mm diameter x 900mm high consisting of 200mm thick coral block wall,100mm thick well compacted hardcore filling,50mm thick blinding,Approved Damp proof membrane,A142 BRC Mesh,100mm thick vibrated grade 20 concrete floor slab, 15mm thick screed on the general faces of the tank base in (1:3) cement/sand mortar, 600mm widex1500mm deep strip foundation,including all,reinforcement, Excavations and disposal	2	ITEM		
	<u>Testing</u>				
13.7.35	Allow for testing the general water supply and reticulation systems to level in sound working condition and to the Engineer's satisfaction	1	ITEM		
	TOTAL WATER RETICULATION CARRIED FORWARD TO BILL NO.13 SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	ELEMENT NO.08 (FIRE FIGHTING AND PROTECTION SERVICES); <u>Supply,deliver and install the following Air Conditioners to positions indicated on the contract drawings and as instructed by the Engineer:-</u> <u>HOSEREELS</u> <i>Supply , deliver and install galvanised mild steel tubing to BS 1387 Class C, socketed joints to BS21 and galvanised malleable iron fittings including fixing and jointing. Tenderers must allow in their pipework prices for all the couplings, connectors, joints etc.required in the running length of pipework and also where necessary, for pipe fixing clips, holderbats plugged and screwed, brackets and pipe sleeves through structural members.</i>				
13.8.1	25mm diameter GMS tubing Surface Mounted	25	LM		
13.8.2	40mm diameter GMS tubing Surface Mounted	40	LM		
	Extra over GMS tubing for the following:				
13.8.3	25mm diameter galvanised malleable iron elbow	5	No.		
13.8.4	40mm dia ditto	4	No		
	Tees				
13.8.5	25mm galvanised malleable iron equal tee	6	No		
13.8.6	40mm ditto	4	No		
	Reducing Bushes				
13.8.7	25 x 20mm galvanised malleable iron reducing bush	4	No		
13.8.8	40 x 25 mm ditto	3	No		
	Unions				
	50mm diameter galvanised malleable iron union	4	No		
	Gate Valves				
	<i>25mm dia approved high pressure screw- down full way non-rising stem solid wedge disc gate valve to BS 5154 PN 16 for Series B Rating with wheel head and joints to</i>				
13.8.9	steel tubing. As "Crane Model 156 " or equal and approved	2	No		
13.8.10	40 mm Ditto	1	No		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
	Reducing Tee				
13.8.11	50x25 mm malleable iron galvanised reducing tee	4	No		
	<u>Hosereels</u>				
13.8.12	Non recessed swinging type hosereel complete with 30 metres of 20mm internal diameter rubber fire hose with nylon spray/jet shut off nozzle , conforming to BS 5274	1	No		
13.8.13	Wire brush , clean, and paint complete installation with one coat of red oxide primer, undercoat, and gloss coat to Architects colour including banding and colour coding to British Standards	1	Sum		
	<u>Portable Fire Extinguisher</u>				
13.8.14	9Kg catridge type general purpose portable dry powder fire extinguisher fully charged or equal and approved.	7	No.		
	<u>Carbon dioxide Gas Fire Extinguisher</u>				
13.8.15	5kg carbon dioxide gas portale fire extinguisher complete with pressure gauge,initial charge and mounting brackets	7	No.		
	<u>Water Carbon Dioxide</u>				
13.8.16	9.0Litre Water carbon dioxide (WCo2) portable fire extinguisher complete wth pressure gauge,initial charge and mounting brackets.	7	No.		
	<u>Signage</u>				
13.8.17	Allow for the Signage for fire exits and fire instructions all as described in the particular specifications and to the Project Enginneer's Approval.	7	ITEM		
	<u>Testing</u>				
13.8.18	Allow for testing the whole fire fighting equipments to leave in sound working condition and to the Engineer's satisfaction	1	ITEM		
	<u>Breaching Inlet /Booster inlets</u>				
13.8.19	Supply and Install Fire service 4" x 2 way breaching inlet connection complete with Drain Valves complying with BS 336:2010, PN16 Rated and non-return valves. The breaching inlets to be manufatured to comply to BS 5041	1	No.		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	TOTAL B/F FROM PREVIOUS PAGE				
	<u>Breeching Inlet Cabinet</u>				
13.8.20	Supply and install breeching inlet cabinet, recessed type to accommodate 6" x 4 way breeching inlet manufactured to comply to BS5041-5	1	No.		
	<u>Valve Chamber</u>				
13.8.21	Construct Mains Valve Chamber size 600x600x500mm deep with 100mm thick concrete block rendered all round in cement and sand mortar (1:4) including hinged iron cover and frame in grease	2	No.		
	<u>External Fire Hydrant</u>				
13.8.22	Supply 2 way pillar type fire hydrant with dia 63 outlet to LCPB/EN 12845 standard	2	No.		
	<u>100 mm hydrant isolation valve</u>				
13.8.23	UL Listed/ FM Approved, Connection: Flanged as BS EN 1092-2/ Flanged as ASME B16.1, PN 16	2	No.		
	<u>Underground Piping</u>				
	<i>Supply, install below HDPE PN 20 to BS EN 12201, ISO 4427 ground pipe providing, fixing, jointing, testing in position & commissioning, including excavation & backfilling as required.</i>				
	<i>Pipe connection, tees must be electrofusion/butt fusion fittings</i>				
13.8.24	100Ø HDPE	70	LM		
	TOTAL FIRE FIGHTING CARRIED FORWARD TO BILL NO. 13 SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>ELEMENT NO.13.9:</u>				
	<u>ON-SITE WASTEWATER TREATMENT PLANT</u>				
	<u>Preliminaries, Drawings, Manuals, Handovers, Training, Regulatory Matters, Operation & Maintenance</u>				
13.9.1	Allow for Start-Up & Training Programme of Clients designated Site Operators & Maintenance Personnel. A start-up and operator training program enables the operator to learn about the treatment process and the equipment used in the process. Start-up involves pre-commissioning checks of the process mechanical and electrical equipment. After wet-testing procedures, maintenance and servicing requirements are given. When the process has been commissioned, operator training will take place so that the operator/s can learn operational monitoring, process cycle changes, and troubleshooting. Personel to be full capable of of regular and routine maintence tasks and reporting.	1	SUM		
13.9.2	Allow for Monthly Maintenance visits for period of Twelve (12) Months	1	SUM		
13.9.3	Allow to liase with the NEMA authorities, assit client with submiting application and obtaining discharge licence for the Waste Water treatment Plant	1	SUM		
13.9.4	On completion of the Waste water treatment plant, take water samples as necessary to Certified Laboritory for testing. Submit tests and results to NEMA along with all necessary application forms and obtain NEMA approval and licence to operate the Waste Water treatment Plant	1	SUM		
13.9.5	Allow for any other item not necessarily mentioned here to provide a complete working system to the Satisfaction of the engineer	1	SUM		
	<u>Waste Water Treatment Plant</u>				
13.9.6	Supply, Install, Test and Commission the Moving Bed Biofilm Reactor (MBBR) Waste Water Treatment System, With a capacity of treating 100PE with an average flow rate of 15,000 lts per day . With a BOD load of 6Kgs per day , Ammonia Nitrogen load of 4Kgs per day . With minimum treated discharge requirment of BOD <30mg/lit, TSS <30mg/lit, Ammonia Nitrogen <20mg/lit . Complete with all Media, Screens, Pumps, Aeration Blowers, Aeration Diffusers, Manifolds, Level sensors, Valves, Piping, Fittings and Accessories to fully conform to the specified discharge requirements.	1	Item		
	TOTAL CARRIED TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BALANCE B/F FROM PREVIOUS PAGE				
13.9.7	Main control panel (MCP), NEMA 4 free-standing enclosure with forced air ventilation. The MCP is the "intelligence" of the treatment process. Electrical Control Panel with PLC, electrical isolators, overload protection, Equipment running and trip indication lights, automatic and manual override switches. Minimum IP 55 enclosure. Audio-visual alarm indicator to be provided outside the control shed. Allow for PLC complete with Graphical Human Machine Interface (HMI). Alarm, fault and process indicators will be displayed on the process control panel.	1	NO		
13.9.8	Allow for high specification internet based Remote Monitoring & Control using GSM/GPRS/IoT technology with real-time monitoring, control and alerts of the status and alarms of the plant's operations by both supplier and client parties. User access via mobile phone App, web portal, SMS/Email alerts for critical plant condition.	1	SUM		
13.9.9	Allow for MBBR media of High Quality Virgin High Density Polyethylene (HDPE). Quality of media shall have Specific Gravity of 0.96 and bulk density of 125kg/m ³ . Required Surface Area specification shall be 675m ² /m ³ .	1	SUM		
13.9.10	Process Aeration Blowers 1.6 kW / 3 HP positive displacement (PD), one (1) duty, one (1) standby.	2	NO		
13.9.11	Fine bubble aeration system, in-basin pipes and connections to the top of the wall of the basin.	1	SUM		
13.9.12	9" Fine Bubble Disc diffusers. Specification is PTFE coated EPDM membranes. PTFE protective layer is to ensure extended useful lifespan of diffusers over standard EPDM diffuser products.	35	NO		
13.9.13	Allow for Coarse inlet Screen 2" slots for capture of large rags and solids. Fabricated with 50mm polypropylene structure & Stainless Steel.	1	NO		
13.9.14	Allow for PolyLok PL-625 Effluent Filter with 1/32" linear feet filter slot size for capture of smaller fine solids. Effluent Filter shall come with automatic shutoff ball for closing outlet to avoid solids wash through during servicing, as acting as a gas deflector.	3	NO		
13.9.15	1 HP submersible RAS/WAS pumps	1	NO		
13.9.16	Influent pumps, one (1) duty and one (1) standby	2	NO		
	TOTAL CARRIED TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BALANCE B/F FROM PREVIOUS PAGE				
13.9.17	Chemical dosing pumps and controls for sodium hypochlorite, plus chemical makeup tank. System for Chlorine Disinfection of Treated Waste Water.	1	SUM		
13.9.18	All pipe & fittings as required to complete the interconnecting system and all necessary fittings, valves and accessories.	1	SUM		
13.9.19	All Electrical wiring as required to complete the interconnecting system and all necessary conduits, fittings and accessories.	1	SUM		
13.9.20	Allow for Installation of Wastewater Treatment Plant Equipment, incldue all Labour, Transport & Sundries Costs	1	SUM		
	<u>Bio- Reactor</u>				
	<u>Supply, install, test and commission the following</u>				
13.9.21	5000lts/ hr Bio- Reactor DAF- Dissolved Air Floation-system with a bubble size of less than 10um, Dissolved gas efficiency is over 95%, the solid suspended matter content in effluent to be less than 20 mg/L	1	ITEM		
	<u>TOTAL FOR ON-SITE WASTEWATER TREATMENT PLANT CARRIED TO SUMMARY</u>				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

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BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	<u>BILL NO. 13 SUMMARY PAGE:-</u>				
13.1	INTERNAL PLUMBING				
13.2	SANITARY FITTINGS				
13.3	DRAINAGE				
13.4	TESTING				
13.5	ICE FLAKE MACHINE, ROOM INSULATION AND ACCESSORIES				
13.6	BUILDERS WORK				
13.7	WATER RETICULATION				
13.8	FIRE FIGHTING				
13.9	WASTE WATER TREATMENT				
13.10	SERVER ROOM A. C.				
13.11	GENERAL ITEMS				
	TOTAL FOR MECHANICAL WORKS CARRIED FORWARD TO GRAND SUMMARY PAGE				

ELECTRICAL WORKS

BILL NO.14

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	<i>(All Rates are V.A.T Inclusive)</i> <u>BILL NO. 14: ELECTRICAL WORKS</u>				
	<u>SCHEDULE 1:</u>				
	<u>FISHLANDING BANDA & ABOLITION HOUSE</u>				
	<u>Supply Install, Test and Commission Following:-</u>				
	<u>LIGHTING POINTS</u>				
14.1.1	Lighting points wired in 3x4.5mm ² PVC/SC copper cables drawn in concealed 20mm diameter heavy gauge PVC conduit including all boxes, saddles and accessories for				
	i)One way switching	No.	90		
	ii)Two Way switching	No.	11		
14.1.2	<u>10A plastic switch plates as follows</u>				
	i)One gang one way	No.	12		
	ii)One gang two way	No.	2		
	<u>LIGHTING FITTINGS</u>				
14.1.3	Light fittings complete with all the necessary fixing accessories and rated energy lamps as follows:-				
	i) Exit Light	No.	5		
	ii) Type 600X600	No.	2		
	iii)Type 2	No.	23		
	iv) Type 2D	No.	3		
	v) Type 4	No.	22		
	vi) Type N	No.	7		
	viii) Type 4C	No.	11		
	ix) Type M	No.	28		
14.1.4	Motion Sensors for lighting in washrooms	No.	16		
	<u>POWER OUTLETS</u>				
14.1.5	Socket outlet point in Ring wiring of 3x2.5 mm ² PVC-SC-Cu cables drawn inside 20mm diameter HG conduits	No.	32		
14.1.6	13A Twin switched moduled socket outlet plate	No.	32		
14.1.7	20A Double Pole outlet point comprising of wiring in 3x4.0 mm ² PVC-SC-Cu cables drawn inside 20mm diameter HG conduits	No.	4		
14.1.8	20A Double pole switch complete with neon light	No.	4		
	<u>ELECTRICAL SWEEP FANS</u>				
14.1.9	Ceiling fan points wired in 3x2.5mm ² PVC/SC copper cables drawn in concealed 20mm diameter heavy gauge PVC conduit including all boxes, saddles and all accessories	No.	6		
14.1.10	<u>CEILING FANS</u>				
	i) 49W 1400mm 3-arm 5- speed, Ceiling fan complete with the regulator	No.	6		
14.1.11	Ceiling fan hook (M-10) complete with rawl bolt.	No.	6		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	BALANCE B/F/ FROM PREVIOUS PAGE				
	<u>FIRE DETECTION AND ALARM SYSTEM</u>				
	Fire alarm panel/Fire alarm bell/Break glass Unit				
	Points/Smoke detector points comprising iring in				
14.1.12	3x1.5mm ² fire risistant cables concealed in PVC conduits concealed in ceiling space but excluding bell and break glass unit	No.	27		
14.1.13	Addressable Call point	No.	6		
14.1.14	Addressable Sounder complete with beacon	No.	6		
14.1.15	Addressable Smoke detectors complete with base	No.	11		
14.1.16	Heat detectors complete with base	No.	3		
14.1.17	Single Loop, Expandable to 8, Intelligent Addressable fire alarm panel with atleast 200 addresses complete with full network capability,stand-by batteries and intergral battery charger, touch screen, thermal printer and CAN modules	No.	1		
	<u>TELEVISION, CCTV AND DATA WORKS</u>				
14.1.18	16 SWG,(450 x 300 x 100)mm ³ flush mounted galvanised powder coated draw box for telephone & data works	No	3		
14.1.19	Telephone/Data outlet point comprising of concealed 20mm diameter HG PVC conduits plus draw wire	No	30		
14.1.20	RJ45, Single Data outlet plate a) Single	No	3		
	<u>DISTRIBUTION BOARDS</u>				
14.1.21	6-Way TP/N distribution board flush mounted complete 1No. 125A TPN integral isolator.	No.	2		
14.1.22	4-Way Consumer Unit flush mounted complete 1No. 100A SPN integral isolator.	No.	2		
14.1.25	MCBs for the above boards				
	i)16A SP	No.	10		
	ii)20ASP	No.	5		
	iii)32ASP	No.	7		
	iv)63ASP	No.	1		
	v)63ATP	No.	1		
	vi) Blanking Plates	No.	10		
	<u>SUB-MAINS CABLES</u>				
14.1.26	4 core 25mm ² PVCC/SWA/PVC (armoured) + 1X16mm ² single Core copper cables drawn inside HG conduits	LM	150		
14.1.27	4 core 16mm ² PVCC/SWA/PVC (armoured) + 1X16mm ² single Core copper cables drawn inside HG conduits	LM	200		
14.1.28	3 core 10mm ² PVC/SWA/PVC (armoured) copper cables drawn inside 50mm diameter HG conduits	Lm	65		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	BALANCE B/F/ FROM PREVIOUS PAGE				
14.1.29	Cable glands for the above cable	No.	12		
14.1.30	Cable lugs for the above cable complete with hydraulic crimping	No.	24		
14.1.31	Single phase isolator point comprising of wiring in 3x6.0 mm ² PVC-SC-Cu cables drawn inside 20mm diameter HG conduits	No	2		
14.1.32	32A Single phase Isolator complete with 3 pin industrial socket and plug	No	2		
14.1.33	Three phase isolator point comprising of wiring in 5x6.0 mm ² PVC-SC-Cu cables drawn inside 20mm diameter HG conduits	No.	3		
14.1.34	32A Three phase Isolator complete with 5 pin industrial socket and plug	No.	3		
14.1.35	Powder Coated Electrical Pedestal Socket Box with provision for 4No. Standard Twin sockets and 4 No. Standard double data outlet	No.	1		
	TOTAL PUMP HOUSE, POWER HOUSE, OPEN AIR MARKET, FISH BANDA, FISH MENDING SHED & FISH GEAR STORE SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
14.2.1	<p><u>SCHEDULE 2 MAIN POWER DISTRIBUTION</u></p> <p>Free-standing purpose made front access sub main switchboard, modular, metal clad, manufactured in 12 SWG galvanised mild steel sheet and finished in cream (or appropriate colour) powder coating as shown on the schematic. The switchboard should consist of a PLC section. The switchboard to be complete with the following:-</p> <p>i) Digital multimeter with CTs and fuse protection capable of measuring voltage in the range 0 – 1000V, 3-phase, current in the range 0-400A, 3-phase, and all power system parameters (KW, KVA, KWHr, KVARs, Frequency, P.F., harmonics and all the parameters). The multimeter should be complete with selector switches for viewing/displaying the various parameters.</p> <p>ii) Set of neon phase presence indicator lamps</p> <p>iii) 150A adjustable TPN MCCB main incomer and having a short-circuit breaking capacity of 100KA at 415Vac, 50Hz.</p> <p>iv) 4 No. 63A TPN copper bus bars</p> <p>v) 3 No. 63A TPN MCCBs</p> <p>vi) 1 No. 63A SPN MCCBs</p> <p>vii) 2 No. 32A TPN MCBs</p> <p>viii) Sufficient spare capacity for future development all fitted with 2 No. 63A SP MCBs & 2 No. 100A TP MCCB</p> <p>ix) Sealable studs for all cover plate screws and all necessary accessories</p> <p>x) 6mm perspex viewing window</p> <p>xi) Heavy duty rubber lining for all the perspex viewing windows</p> <p>xii) 415V three-phase surge diverter, wired as shown, complete with enclosure with viewing window.</p> <p>xiii) 20 KVAR's automatic Power Factor Correction Capacitor Bank comprising the following:-</p> <p>a) 4 No 5 KVAR's 415 V, 50Hz, 3-Phase</p> <p>b) 4 No Special contactors for capacitor switching</p> <p>c) 4 No Fuse bases and fuses for each capacitor protection</p> <p>e) 4 No Step indicator lamps</p> <p>f) 4 No Control circuit protection fuse/fuse holder</p> <p>g) 1 No. 4-Step automatic control regulator for maintaining power factor at the set level and regulating the switching of capacitor steps</p> <p>h) 1 No 150/5A Current transformer (to be mounted after the mains incoming circuit breaker)</p> <p><i>The bank to be made from low-loss bio-degradable capacitive units, complete with earthed enclosure. All the contactors, controls and indicator lamps, including a digital read-out screen, to be included.</i></p>	Item	1		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	BALANCE B/F FROM PREVIOUS PAGE				
	xiv) Comprehensive protective multiple earthing of the board in 1500mm long 12mm diameter pure electrolytic copper earth rod deep driven to permanent moisture level, copper clamp. 120mm ² green earth lead complete with all accessories. (Note: Use parallel rods if effective earthing cannot be achieved with 1 No. rod).				
14.2.2	4C50mm ² PVC/SWA/PVC armoured copper cable + 1X16mm ² single Core copper cables laid in ducts in trench from KPLC Meter to main low voltage board complete with glands and lugs	LM	50		
	UNDERGROUND CABLE DUCTING				
14.2.3	Allow for 300mm deep trenching and back filling for the cable mentioned before, Telecommunication and street lighting.	Lm	160		
14.2.4	Ducting for the above in 150mm HGPVC Pipes complete with haunching	Lm	160		
14.2.5	Allow for cable markers in concrete tiles marked "HATARI" for the item above	No.	20		
	<u>WATER PUMPS PROVISIONS</u>				
14.2.6	3 core 6mm ² PVC/SWA/PVC (armoured) copper cables drawn inside 32mm diameter HG conduits	Lm	90		
14.2.7	32A Single phase Isolator complete with 3 pin industrial socket and plug	No.	4		
	<u>BIO- DIGETSTER PROVISIONS</u>				
14.2.8	4 core 25mm ² PVC/SWA/PVC (armoured) copper cables drawn inside 32mm diameter HG conduits	Lm	150		
14.2.9	Cable glands for the above cable	No.	4		
14.2.10	Cable lugs for the above cable complete with hydraulic crimping	No.	20		
14.2.11	8-Way TP/N distribution board flush mounted complete	No.	2		
14.2.12	1No. 100A TPN integral isolator.				
	MCBs for the boards above				
	i)16A 5P	No.	2		
	ii)20ASP	No.	6		
	iii)32ASP	No.	10		
	iv)32A TP	No.	8		
	v)Blanking Plates	No.	6		
14.2.13	Single phase isolator point comprising of wiring in 3x6.0 mm ² PVC-SC-Cu cables drawn inside 20mm diameter HG conduits	No.	2		
14.2.14	Three phase isolator point comprising of wiring in 5x6.0 mm ² PVC-SC-Cu cables drawn inside 20mm diameter HG conduits	No.	2		
14.2.15	32A Single phase Isolator complete with 3 pin industrial socket and plug	No.	2		
14.2.16	32A Three phase Isolator complete with 3 pin industrial socket and plug	No.	2		
	TOTAL FOR POWER DISTRIBUTION C/F TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	<u>SCHEDULE 3 40KW SOLAR SYSTEM</u>				
14.3.1	72- cell 575W Monocrystalline Solar Modules, Efficiency 80%,Cell Specific Safety - Class II, Application Class A, Life time - 25Years, Guarantee - 10Years Rated Current (Im) 8.8A Rated voltage (Vm) 17.5v, Cell Efficiency - 15.0%	No.	70		
14.3.2	25KWh Lithium Battery Pack Smart Storing Energy Storage System (ESS) including a smart Rack Controller. Max Charging & Discharge power: 25kW, IP65, Class A EMC Protection Rating, Type II DC Lightning Protection. Smart Rack efficiency: +98.5%,	No.	1		
14.3.3	Smart Power Control System, 40kW DC/AC hybrid Power inverter full protection function:over-voltage, over-frequency, over-current, over-temperature, AC short-circuit automatic protection, Rated Output power 40kW MPPT efficiency of upto 99.5% Pure Sinewave output	No.	1		
14.3.4	Solar MPPT charge controller with the following characteristics: PV open circuit voltage 500V, Max PV power 35kW, PV rated current 100A, MPPT input voltage 100-150vdc LCD display: Solar panel current, Solar panel voltage, Solar panel power, Battery group voltage,charge & current Protection function against solar reverse charge, solar reverse connection, battery reverse connection, battery overcharge , battery overcurrent	No.	1		
14.3.5	40 kW DC Isolators as ABB or schneider or an approved equivalent	No.	1		
14.3.6	63A TPN AC isolator as ABB or schneider or an approved equivalent	No.	1		
14.3.7	Irradiance sensor (Pyranometer) with Modbus RTU output as Huawei FusionSolar or an approved equivalent	No.	1		
14.3.8	Aluminium mounting frames, brackets and all accessories required to mount the P.V modules as per the specifications	No.	75		
14.3.9	Solar surge protection device rated for 300VDC or to the Engineers approval	No.	1		
14.3.10	List any other item necessary to complete the installation of the 40KW grid- tied solar system <i>Contractor to note that the inverter and batteries together with their associate works should be housed in a container. Rates included should include the container housing</i>	Lot	1		
	TOTAL FOR HYBRID SOLAR POWER C/F TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	<u>SCHEDULE 4</u>				
	<u>STANDBY POWER SUPPLY SYSTEM (GENERATOR SET)</u>				
	GENERATING SET				
14.4.1	Supply, deliver to site, install, test and commission a prime rated 50 KVA 3 phase, 415V, 50Hz diesel generating set with a continuous power factor of 0.8 lagging as directed by the Engineer's specifications. The generator set is to be complete with a sound attenuated canopy and an integral base/belly daily service fuel tank with an operational running capacity of 8 hours.	No	1		
14.4.2	Supply, deliver to site and install a steel exhaust pipe of not less than 14 SWG and of adequate diameter running from the generating set to the outside of the generator house	LM	10		
14.4.3	Connect the exhaust pipe above in item above using steel pipes of adequate diameter, and flexible piping off engine exhaust manifold complete with heavy duty silencer	Item	1		
14.4.4	Complete earthing of generating set to electrical engineer's approval	Item	1		
	<u>AMF CONTROL PANEL</u>				
	Supply, deliver to site, install, test and commission the following:				
14.4.5	An electrical control panel complete with 150A incoming MCCBs and contactors for automatic change over operation and complete with all other control accessories	No	1		
14.4.6	Suitable rated manual by-pass switch with clearly labeled NORMAL-OFF-BYPASS positions, and shall such be wired that when the switch is on either OFF or BYPASS position, the generator shall receive no signal to start	No.	1		
14.4.7	240V AC/12V DC mains power supply trickle battery charger as directed by the Engineer's specifications. The trickle charger shall charge the battery when the set is on IDLE mode , otherwise when the set is RUNNING , the battery shall be charged by the generator charger .	No.	1		
14.4.8	12 volts battery as directed by the Engineer's specifications	No.	1		
	<u>RECOMMENDED SPARE PARTS AND LUBRICATORS</u>				
	For the supply to the site of the following spare parts and lubricators:				
14.4.9	Oil Filters	No.	2		
14.4.10	Air Filters	No.	2		
14.4.11	Fuel filters to suit the set	No.	2		
14.4.12	Set of Fan belts to suit the set	No.	1		
14.4.13	10 litres container of sump oil of grade.....*	No.	1		
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	BALANCE B/F FROM PREVIOUS PAGE				
14.4.14	2 kilogram grease in a tin of grade*	No.	1		
14.4.15	10 litre plastic container of distilled water	No.	1		
14.4.16	20 litre of engine oil in a tin of grade*	No.	1		
14.4.17	Any other spare parts recommended by Tenderer ** *The tenderer to fill in the Grade quality to be supplied **The tenderer to fill in the details and price of items but the price not to be included in total carried forward to summary page	Sum	1		
	<u>SCHEDULE 4 -TOOLS TO BE SUPPLIED WITH THE SET</u>				
	For the supply to site of the following tools:				
14.4.18	Metal tool box with lock and two keys	No.	1		
14.4.19	Set of 8 No. Chrome vanadium ring spanners in sizes to suit the set	No.	1		
14.4.20	Set of 3 screwdrivers, 75mm, 200mm and 300mm plus one 200mm Philips type	No.	1		
14.4.21	- ditto -but open ended spanners	No.	1		
14.4.22	Set of feeler gauges	No.	1		
14.4.23	Set of 8 No. Ratchets in sizes to suit the set	No.	1		
14.4.24	Grease gun to suit greasing points complete with compressor	No.	1		
14.4.25	Oil can, trigger type	No.	1		
14.4.26	Any other special tools which the tenderer recommends should be purchased as an optional:*	Item	1		
	NOTE* Tenderer should give detail and prices of item 5.7.26 but the price not to be included in total carried forward.				
	TOTAL FOR 100KVA GENERATOR C/F TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	SCHEDULE 5 SOLAR STREET LIGHTING				
14.5.1	Type P4	No.	10		
14.5.2	Type M	No.	24		
14.5.3	7 meter Long Class B Galvanized Iron Solar Street Lighting pole as per detail for Type M lighting	No.	6		
14.5.4	7 meter Long Class B Galvanized Iron Solar Street Lighting pole as per detail for Type P4 lighting	No.	10		
14.5.5	Excavate holes to take the poles above, average depth 1000mm, install pole back-fill with concrete, and compact to natural ground level.	No.	16		
	TOTAL FOR SOLAR STREET LIGHTING C/F TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	<u>SCHEDULE 6: LIGHTNING PROTECTION</u>				
	Air Termination				
14.6.1	15mm diameter multiple point copper air terminal complete with base	No.	2		
14.6.2	Copper junction clamps for tape.	No.	7		
14.6.3	25 x 3mm turned copper tape	Lm	50		
14.6.4	Copper ridge saddle	No.	5		
14.6.5	D.C. tape clip	No.	15		
	Down Conductors				
14.6.6	25 x 3mm turned copper tape	Lm	20		
14.6.7	D.C. tape clip	No.	10		
14.6.8	Oblong test/junction clamp	No.	2		
14.6.9	Diameter 38mm HG PVC conduits for the down conductors above.	Lm	20		
	Earth Termination				
14.6.10	15mm diameter, 1200mm long solid copper earth rod, complete with driving stud and spike.	No.	2		
14.6.11	Earth rod-to-tape clamp type A.	No.	2		
14.6.12	Concrete inspection earth pit with 5 hole earth bar	No.	2		
14.6.13	1500mm x 1500mm copper earth mat made from 25mm x 3mm copper tape at 300mm spacing, buried at permanent moisture level and complete with all clamps, welding joints and 6m long 25mm x 3mm insulated copper tape clamped to the down conductors.	No.	2		
14.6.14	Soil treatment around the earth pits with marconite to achieve the required conductivity and obtain acceptable reading	Item	1		
14.6.15	Bonding and clamping to all metal work including water pipes, gas pipes, hand-rails, air-conditioning units, window frames, cladding, metal roof etc. and the main earth for the building.	Item	1		
	TOTAL FOR LIGHTNING ARRESTORS C/F TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	<u>SCHEDULE 7 CCTV</u>				
	<u>Supply, install, test, commission and set to work (To the full satisfaction of all parties to the contract) the following: -</u>				
	<u>CCTV</u>				
14.7.1	Dome Camera 4MP resolution, Excellent low light performance, Efficient H.265+ compression technology, IP67, 24/7 colourful imaging	No.	16		
14.7.2	Ditto but Bullet Cameras	No.	11		
	Network Video Recording System base to be mounted in a 42U data Cabinet with the following features:-				
14.7.3	<ul style="list-style-type: none"> • Up to 32 channel IP cameras can be connected • Up to 576 Mbps high incoming bandwidth ensures IP cameras can be connected • 2 HDMI (different source) and 1 VGA interfaces16 HDD can be used for continuous video recording • 16 HDD can be used for continuous video recording • Supports some specialist cameras, including people counting camera/ANPR (automatic number plate recognition) camera/fisheye camera • Advanced streaming technology enables smooth live view in poor network conditions • Supports RAID 0, 1, 5, 6, 10 and N+1 hot spare for even more reliable data storage, effectively avoids data loss risks 	No.	1		
14.7.4	24 Port layer 2 100Mbps POE SFP Switch with Min 30W Power availability per port	No.	2		
14.7.5	GBIC transceiver modules (LC to LC) multimode for the switches above	No.	2		
14.7.6	Fibre Patch Panels for Data cable termination	No.	2		
14.7.7	9 U 600X600 wall mounted data cabinet complete with all accessories including power supply points	No.	2		
14.7.8	10TB Surveillance Hard Disk Drive	No.	5		
14.7.9	STP Cat 6 structured cables	Rolls	12		
14.7.10	STP Cat. 6 patch cord, 3M for the Cameras.	No.	15		
14.7.11	UPT Cat. 6A patch cord, 1M	No.	15		
14.7.12	Associated Fiber and UTP (CAT 6) cabling between field devices and Main Switch	Item	1		
	TOTAL FOR CCTV CARRIED FORWARD TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	<u>SCHEDULE 8</u> <u>GENERAL ITEMS</u>				
14.8.1	Carry out comprehensive 24-hour power analysis, after installing main switchboard, but before switching on load with a digital power meter (with printer) to: i) Record and print all the power system parameters. ii) Submit 3 copies of the print-outs. <i>(Note: Parameters must be satisfactory before building is switched on).</i>	Item			
14.8.2	Allow for presentation of all the required samples as per specifications, Bills of Quantities and Drawings.	Item			
14.8.3	Working/ Shop Drawings Prepare and submit three sets of record (shop) plan and isometric layout drawings to easily readable scale, A1 or A0 paper size format as follows: i) general arrangement drawings of all mechanical services, equipment, plant etc ii) routes-types and sizes and arrangement of all pipeworks iii) any other details as per specifications Drawings are to be submitted in soft copy (CAD) and hard copy to the client, the architect and the engineer. The soft copies to be stored in SSD drive. Allow for preparation and submitting draft and three final copies of operation, instruction and maintenance manuals to Engineers approvals.	Item			
14.8.4	As Installed Drawings As above but for as built/ installed drawings	Item			
14.8.5	Prepare and submit Maintenance Manuals for all items installed.				
14.8.6	All other items of general preliminary to cover, but not limited to:- i)Attendance on all other sub-contractors, such as for Communication Services, Mechanical Installations, Security Installations, Sound Equipment/ Wiring Installations, Generator Installations, Lift Services, Solar Water Heating, V-Sat services etc. ii)Hiring and keeping a Supervisor/Foreman on site iii)Constant supervision of the works. iv)Provision of all the required spares. v)Testing and Inspection of materials/works. vi)Provision of labour camps. vii)Storage of materials. viii)Initial maintenance (During Defects Liability) ix)Providing water/electricity for the works. x)Protection of the works/materials xi)Clearing away on completion. xii)Preparing Final Account. xiii)Providing all Test Certificates, etc. Provisional Sum for Contribution to KPLC for power upgrade	Item			
	TOTAL C/F TO NEXT PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMT
	BALANCE B/F FROM PREVIOUS PAGE				
14.8.7	<p>Allow for sub-contractors charges for liaison with Kenya Power and Lighting comprising the following:-</p> <p>i)Extracting load details from the drawings</p> <p>ii)Calculating total load, together with necessary diversity</p> <p>iii)Verifying the details with the engineer.</p> <p>iv)If need be getting the required documentation and letters from client for the purposes of Additional Load Applications</p> <p>v)Filling all the required forms, and generating correspondences for power application.</p> <p>vi)Presenting application and getting reference number.</p> <p>vii)Making regular follow-ups with Kenya Power</p> <p>viii)Facilitating inspection, approvals and certification by Kenya Power</p> <p>ix)Providing attendance and materials required for power connection.</p> <p>x)Filling out and submitting Commencement and Completion certificates</p> <p>xi)Handing over all approved drawings and certificates to the client.</p> <p>xii)Performing all other services required for power supply to site.</p> <p>xiii)Building/modifying all power manholes to KPLC standards.</p> <p>xiv)All other incidental KPLC requirements/charges.</p>				
	TOTAL FOR GENERAL ITEMS C/F TO SUMMARY PAGE				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

[illegible]

PUMP HOUSE

BILL NO.15

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 1</u>				
	<u>SUBSTRUCTURES (All provisional)</u>				
	<u>Site Preparation</u>				
15.1.1	Clear site of all bushes, tufts and any small or large trees, including grubbing out roots and burn on site where directed by the Project Manager	SM	25		
	<u>Excavation</u> Note that all excavations are measured nett and no allowance for working space provided				
15.1.2	Excavate oversite average 250mm deep and cart away	SM	25		
15.1.3	Excavation for foundation trenches from reduced level: not exceeding 1.50 metres deep	CM	27		
15.1.4	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	20		
15.1.5	Ditto for column bases from reduced level not exceeding 1.50 metres deep	CM	9		
15.1.6	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	8		
15.1.7	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	30		
	<u>Disposal of excavated material</u>				
15.1.8	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	68		
15.1.9	Remove surplus spoil from site and deposit in spoil heaps and later spread on site as directed	CM	21		
	<u>Planking and strutting</u>				
15.1.10	Planking and strutting to sides of all excavations: keep excavations free from all fallen materials	ITEM			
	<u>Disposal of Water</u>				
15.1.11	Keep excavations free from all water including spring or running water.	ITEM			
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>Hardcore Filling</u>				
15.1.12	300mm thick (minimum) approved hardcore handpacked in layers not exceeding 150mm	SM	14		
15.1.13	Imported filling to make-up levels; compacted in layers not exceeding 150 mm thick; To atleast 95% MDD (AASHTO T99) compaction	CM	7		
	<u>Murram</u>				
15.1.14	50mm Thick Quarry dust blinding to the surface of hardcore rolled smooth to receive polythene sheeting	SM	14		
	<u>Insecticide treatment</u>				
	Treat hardcore surface with approved antitermite applied in accordance with the manufacturer's instructions and subject to a TEN YEAR guarantee				
15.1.15	To Quarry dust surface	SM	14		
	<u>CONCRETE WORK</u>				
	Insitu concrete class 15/20: in				
15.1.16	50 mm thick blinding to strips	SM	18		
15.1.17	50 mm thick blinding to column bases	SM	6		
	Insitu concrete Class 25 (20mm aggregate) : vibrated: reinforced				
15.1.18	Strip foundation	CM	4		
15.1.19	Column bases	CM	3		
15.1.20	Columns	CM	1		
15.1.21	150mm Thick ground floor slab	SM	20		
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u>				
	Ribbed bars to KS ISO 6935-2:2007				
15.1.22	8mm diameter	KG	50		
15.1.23	10mm diameter	KG	200		
15.1.24	12mm diameter	KG	120		
15.1.25	16mm diameter	KG	100		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
15.1.26	Mesh Fabric Reinforcement BRC Fabric mesh reinforcement Ref. A142; weighing 2.22kg per square metre(measured net no allowances made for laps) including bends tvine wire and spacer blocks.	SM	20		
15.1.27	<u>Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to:</u> Vertical: sides of foundations in trenches	SM	12		
15.1.28	Vertical: sides of column bases	SM	8		
15.1.29	Vertical: sides of columns	SM	8		
15.1.30	Edges: slab over 75 but not exceeding 150 mm wide	LM	18		
	<u>WALLING</u> Approved natural stone or coral stone ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar				
15.1.31	200 mm thick walls reinforced with hoop iron at every alternate course	SM	60		
	<u>DAMP PROOFING</u> 1000 Gauge polythene; 150mm laps; no allowances made for laps				
15.1.32	Horizontal; over 300mm wide	SM	20		
15.1.33	<u>Plinth Finishes</u> 15mm Thick cement sand (1:3) rendering to plinth; wood float finish (PLEASE NOTE: The render shall be at least 450 mm below natural ground level)	SM	8		
15.1.34	Prepare and apply three coats of premium quality marine grade bituminous paint to rendered walls; externally	SM	8		
	Carried to collection				
	<u>COLLECTION SUBSTRUCTURE</u> Brought forward from page PR/1 Brought forward from page PR/2 Brought forward from page PR/3 above				
	TOTAL FOR SUBSTRUCTURE CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 2</u>				
	<u>RC SUPERSTRUCTURE</u>				
	Insitu concrete Class 25 (20mm aggregate) : vibrated: reinforced				
15.2.1	Beams	CM	1		
15.2.2	Columns	CM	1		
15.2.3	150 mm thick suspended roof slab	SM	20		
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u>				
	<u>Ribbed bars to KS ISO 6935-2:2007</u>				
15.2.4	Assorted sizes	KG	810		
	<u>Marineply formwork to:</u>				
15.2.5	Sides of Columns	SM	11		
15.2.6	Sides and soffits of beams	SM	10		
15.2.7	Soffits of suspended floor slab	SM	20		
15.2.8	Edges of suspended floor slab 75-150mm high	LM	18		
	<u>Creation of Arches</u>				
15.2.9	Construction and formation of decorative arches around windows and the main door externally and main arches at terrace finished same as external walls;1000 - 3000 mm diameter;including all necessary formworks and reinforcements; all to Architect's details	No	3		
	TOTAL FOR RC SUPERSTRUCTURE CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 3</u>				
	<u>EXTERNAL WALLS</u>				
	<u>NATURAL STONE WALLING</u>				
	<u>Machine cut natural stone or machine cut coral stone or hollow concrete block walling ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u>				
15.3.1	200mm. Thick walling externally	SM	20		
15.3.2	200mm thick at parapet wall; including allowing for crenellation to architect's detail	SM	18		
	Pre-cast concrete class 20/20 precast ventilation blocks				
15.3.3	600x600x200mm thick vents block with floral motifs; bedded and jointed in cement and sand (1:3) mortar and reinforced every alternate course with hoop iron.;To architect's details	SM	11		
	Pre-cast concrete class 20/20 concrete coping				
15.3.4	300 x 75 mm high precast concrete coping weathered and throated on both sides and jointed to wall in cement sand mortar 1:3 all to approval	LM	18		
	Bituminous or other equal approved damp-proof course; 3 ply membrane				
15.3.5	Horizontal; 200mm wide under walls	LM	12		
	TOTAL EXTERNAL WALLING CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 4</u>				
	<u>FLAT ROOF FINISHES AND RAIN WATER HARVESTING</u>				
	<u>Flat roof finishes</u>				
15.4.1	50mm thick (average) water proof screed consisting of cement and sand (1:3)	SM	21		
15.4.2	Ditto to sides of wall;300mm high	SM	6		
15.4.3	50 x 50mm internal angle fillet	LM	22		
	Supply and apply 4mm thick bituminous felt membrane heat welded in 200mm overlaps and all necessary surface preparations; applied strictly in accordance with printed manufacturer's instructions; provide a 10 year guarantee				
15.4.4	To roof slab	SM	21		
15.4.5	To sides of walls	SM	6		
	Screed; cement and sand 1:3 with approved integral dust proofing additive wood floated.				
15.4.6	32 mm thick to receive concrete interlocking tiles (m.s)	SM	17		
	Concrete interlocking tiles				
15.4.7	200 x 200 x 25mm thick concrete interlocking tiles at roof slab; bedding and jointing in cement mortar mix 1:4(m/s)	SM	17		
15.4.8	100mm high matching skirting	LM	17		
	Unplasticized PVC downpipes and fittings: solvent welded joints				
15.4.9	150mm downpipes in concrete columns to approval	LM	6		
15.4.10	Extra over suspended concrete slab for forming 150mm diameter hole for down pipe	NO	2		
15.4.11	Extra over downpipe for bends	NO	2		
15.4.12	Extra over downpipe for 160mm diameter anti splash shoe	NO	2		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
15.4.13	<i>Rainwater Harvesting Cont'd</i> Extra over 150mm fulbora outlets including galvanised expanded metal mesh	NO	2		
	Carried to collection				
	<u>COLLECTION</u> <u>FLAT ROOF FINISHES AND RAIN WATER HARVESTING</u> Brought forward from page PR/6 Brought Down from page PR/7 above				
	TOTAL FOR FLAT ROOF FINISHES AND RAIN WATER HARVESTING CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 5</u>				
	<u>DOORS</u>				
	<u>Supply, assemble and fix the following Galvanized Steel double door comprising of 75x50x3mm frame with louvre vents and all necessary furniture; The door should be assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4); prepare surface by Sand blasting; apply one coat of 2 pack epoxy zinc PRosPRate primer; apply three coats of marine grade gloss paint (Ref Architects Detailing)</u>				
15.5.1	Double leaf door Overal size 2200mm x 2400mm high as D-001	NO	1		
	TOTAL FOR DOORS CARRIED TO SUMMARY				
	<u>ELEMENT NO.6</u>				
	<u>INTERNAL FINISHES</u>				
	<u>Floor Finishes</u>				
	<u>Screed; cement and sand 1:3 with approved integral dust proofing additive wood floated.</u>				
15.6.1	32 mm thick screed	SM	9		
15.6.2	20 x 100mm ditto skirting	LM	10		
	<u>Wall Finishes</u>				
	<u>15mm thick two coat gauged cement lime and sand (1:2:9) plaster steel trowelled smooth to:-</u>				
15.6.3	To surfaces of walls,columns and beams	SM	27		
	<u>Ceiling Finishes</u>				
	<u>15mm thick two coat gauged cement lime and sand (1:2:9) plaster steel trowelled smooth to:-</u>				
15.6.4	Soffits of concrete slab	SM	9		
	<u>Painting and Decorating</u>				
	<u>Prepare and apply undercoat and three coats PVA based premium quality marine grade silk vinyl sheen emulsion paint as approved to:</u>				
15.6.5	To plastered surface of walls,columns and beams	SM	27		
15.6.6	Precast concrete Louvre Blocks	SM	11		
15.6.7	Plastered concrete slab soffits	SM	9		
	TOTAL FOR INTERNAL FINISHES CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO.7</u>				
	<u>EXTERNAL FINISHES</u>				
	<u>Floor Finishes</u> Screed; cement and sand 1:3 with approved integral dust proofing additive wood floated.				
15.7.1	32 mm thick to screed	SM	7		
15.7.2	20 x 100mm skirting	LM	11		
	<u>Wall Finishes</u> 25mm Thick cement sand (1:3) rendering to wall,columns and beams	SM	60		
	Prepare and apply one undercoat and two finishing coats marine grade weatherguard(silicone based) exterior paint as approved to:				
15.7.4	Rendered surfaces of walls,columns and beams	SM	60		
15.7.5	Precast concrete Louvre Blocks	SM	11		
	<u>Ceiling Finishes</u> 15 mm Thick Internal cement sand (1:3) gauged plaster as described to:				
15.7.6	Soffits of concrete slab	SM	7		
	<u>Painting and Decoration</u> Prepare surface,apply undercoat and apply three coats of premium quality marine grade emulsion paint to:-				
15.7.7	Plastered ceiling surfaces	SM	7		
	TOTAL FOR EXTERNAL FINISHES CARRIED TO SUMMARY				
	<u>ELEMENT NO.8</u>				
	BUILDERS WORK IN CONNECTION WITH SERVICES(BWICS) Builder's Work incidental to ventilation,electrical installations, concealed fixings				
15.8.1	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installation;including making good all surfaces	ITEM	1		
	TOTAL FOR BWICS CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SUMMARY				
1	SUBSTRUCTURES				
2	R.C SUPERSTRUCTURE				
3	EXTERNAL WALLS				
4	FLAT ROOF FINISHES AND RAIN WATER HARVESTING				
5	DOORS				
6	INTERNAL FINISHES				
7	EXTERNAL FINISHES				
8	BWICS				
	TOTAL FOR PUMP ROOM CARRIED TO SUMMARY OF BUILDERS' WORKS				

POWER HOUSE

BILL NO.16

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 1</u>				
	<u>SUBSTRUCTURES (All provisional)</u>				
	<u>Site Preparation</u>				
16.1.1	Clear site of all bushes, tufts and any small or large trees, including grubbing out roots and burn on site where directed by the Project Manager	SM	71		
	<u>Excavation</u> Note that all excavations are measured nett and no allowance for working space provided				
16.1.2	Excavate oversite average 250mm deep and cart away	SM	71		
16.1.3	Excavation for foundation trenches from reduced level: not exceeding 1.50 metres deep	CM	63		
16.1.4	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	46		
16.1.5	Ditto for column bases from reduced level not exceeding 1.50 metres deep	CM	29		
16.1.6	Ditto but exceeding 1.50 m deep but not exceeding 3.0 m deep	CM	26		
16.1.7	Extra over all descriptions of excavations and removal from site for breaking up rocks: irrespective of class	CM	50		
	<u>Disposal of excavated material</u>				
16.1.8	Fillings around sub- walls: backfill and compact in 150 mm layers: selected excavated materials	CM	190		
16.1.9	Remove surplus spoil from site and deposit in spoil heaps and later spread on site as directed	CM	45		
	<u>Planking and strutting</u>				
16.1.10	Planking and strutting to sides of all excavations: keep excavations free from all fallen materials	ITEM			
	<u>Disposal of Water</u>				
16.1.11	Keep excavations free from all water including spring or running water.	ITEM			
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
16.1.12	<u>Hardcore Filling</u> 300mm thick (minimum) approved hardcore handpacked in layers not exceeding 150mm	SM	48		
16.1.13	Imported filling to make-up levels; compacted in layers not exceeding 150 mm thick; To atleast 95% MDD (AASHTO T99) compaction	CM	24		
16.1.14	<u>Murram</u> 50mm Thick Quarry dust blinding to the surface of hardcore rolled smooth to receive polythene sheeting	SM	48		
16.1.15	<u>Insecticide treatment</u> Treat hardcore surface with approved antitermite applied in accordance with the manufacturer's instructions and subject to a TEN YEAR guarantee To Quarry dust surface	SM	48		
	<u>CONCRETE WORK</u> Insitu concrete class 15/20: in				
16.1.16	50 mm thick blinding to strips	SM	42		
16.1.17	50 mm thick blinding to column bases	SM	10		
	Insitu concrete Class 25 (20mm aggregate) : vibrated: reinforced				
16.1.18	Strip foundation	CM	9		
16.1.19	Column bases	CM	4		
16.1.20	Columns	CM	1		
16.1.21	150mm Thick ground floor slab	SM	61		
16.1.22	Extra over in slab to forming or leaving 300mm wide shallow drainage channels;average 300mm deep 'U' channel in hardcore and floor slab; including hand packing to sides of channel;150mm thick concrete class 25/20 to sides and bed of channel including 50mm blinding class 15/20 and all necessary formwork and reinforcement, all to detail and approval	LM	14		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u>				
16.1.23	Ribbed bars to KS ISO 6935-2:2007 8mm diameter	KG	100		
16.1.24	10mm diameter	KG	400		
16.1.25	12mm diameter	KG	200		
16.1.26	16mm diameter	KG	200		
16.1.27	Mesh Fabric Reinforcement BRC Fabric mesh reinforcement Ref. A142; weighing 2.22kg per square metre(measured net no allowances made for laps) including bends tying wire and spacer blocks.	SM	61		
16.1.28	Marineply formwork as before described to: Vertical: sides of foundations in trenches	SM	28		
16.1.29	Vertical: sides of column bases	SM	10		
16.1.30	Vertical: sides of columns	SM	10		
16.1.31	Edges: slab over 75 but not exceeding 150 mm wide	LM	32		
	<u>WALLING</u> Approved natural stone or coral stone ; load bearing 7.0 N/mm ² : reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar				
16.1.32	200 mm thick walls reinforced with hoop iron at every alternate course	SM	140		
	<u>DAMP PROOFING</u> 1000 Gauge polythene; 150mm laps; no allowances made for laps				
16.1.33	Horizontal; over 300mm wide	SM	61		
	<u>Plinth Finishes</u>				
16.1.34	15mm Thick cement sand (1:3) rendering to plinth; wood float finish (PLEASE NOTE: The render shall be at least 450 mm below natural ground level)	SM	15		
16.1.35	Prepare and apply three coats of premium quality marine grade bituminous paint to rendered walls; externally	SM	15		
	Carried to collection				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>COLLECTION SUBSTRUCTURE</u> Brought forward from page PH/1 Brought forward from page PH/2 Brought forward from page PH/3 Above				
	TOTAL FOR SUBSTRUCTURE CARRIED TO SUMMARY				
	<u>ELEMENT NO. 2</u> <u>RC SUPERSTRUCTURE</u> Insitu concrete Class 25 (20mm aggregate) : vibrated: reinforced				
16.2.1	Beams	CM	2		
16.2.2	Gutter beams	CM	2		
16.2.3	Columns	CM	1		
16.2.4	150 mm thick suspended roof slab	SM	29		
	<u>High Tensile Reinforcement Bars to B. S. 4449 including cutting, bending and all necessary spacer blocks : (Provisional) :-</u> <u>Ribbed bars to KS ISO 6935-2:2007 Assorted sizes</u>	KG	1493		
16.2.5					
16.2.6	<u>Marineply formwork as Described. Allow for setting to special steel propping, strutting, fillets, nails, etc to:</u> Sides of Columns	SM	14		
16.2.7	Sides and soffits of beams	SM	25		
16.2.8	Sides and soffits of gutter beams	SM	48		
16.2.9	Soffits of suspended floor slab	SM	29		
16.2.10	Edges of suspended floor slab 75-150mm high	LM	22		
16.2.11	<u>Creation of Arches</u> Construction and formation of decorative arches around windows and the main door externally and main arches at terrace finished same as external walls;1000 - 3000 mm diameter;including all necessary formworks and reinforcements; all to Architect's details	No	4		
	TOTAL FOR RC SUPERSTRUCTURE CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 3</u>				
	<u>EXTERNAL WALLS</u>				
	<u>NATURAL STONE WALLING</u>				
	<u>Machine cut natural stone or machine cut coral stone or hollow concrete block walling ; load bearing 7.0 N/mm2: reinforced with 20 gauge 25mm hoop iron strips laid horizontally every alternate course: bedded and jointed in cement and sand (1:3) mortar</u>				
16.3.1	200mm. Thick walling externally	SM	50		
16.3.2	200mm thick at parapet wall; including allowing for crenellation to architect's detail	SM	47		
	Pre-cast concrete class 20/20 precast ventilation blocks				
16.3.3	600x600x200mm thick vents block with floral motifs; bedded and jointed in cement and sand (1:3) mortar and reinforced every alternate course with hoop iron.;To architect's details	SM	10		
	Pre-cast concrete class 20/20 concrete coping				
16.3.4	250 x 50 mm high precast concrete coping weathered and throated on both sides and jointed to wall in cement sand mortar 1:3 all to approval	LM	49		
	Bituminous or other equal approved damp-proof course; 3 ply membrane				
16.3.5	Horizontal; 200mm wide under walls	LM	21		
	TOTAL EXTERNAL WALLING CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 4</u>				
	<u>FLAT ROOF FINISHES AND RAIN WATER HARVESTING</u>				
	<u>Flat roof finishes</u>				
16.4.1	50mm thick (average) water proof screed consisting of cement and sand (1:3)	SM	71		
16.4.2	Ditto to sides of wall;300mm high	SM	7		
16.4.3	50 x 50mm internal angle fillet	LM	22		
	Supply and apply 4mm thick bituminous felt membrane heat welded in 200mm overlaps and all necessary surface preparations; applied strictly in accordance with printed manufacturer's instructions; provide a 10 year guarantee				
16.4.4	To roof slabs and gutters	SM	71		
16.4.5	To sides of walls	SM	7		
	Screed; cement and sand 1:3 with approved integral dust proofing additive wood floated.				
16.4.6	32 mm thick to receive concrete interlocking tiles (m.s)	SM	29		
	Concrete interlocking tiles				
16.4.7	200 x 200 x 25mm thick concrete interlocking tiles at roof slab; bedding and jointing in cement mortar mix 1:4(m/s)	SM	29		
16.4.8	100mm high matching skirting	LM	22		
	Unplasticized PVC downpipes and fittings: solvent welded joints				
16.4.9	150mm downpipes in concrete columns to approval	LM	12		
16.4.10	Extra over suspended concrete slab for forming 150mm diameter hole for down pipe	NO	4		
16.4.11	Extra over downpipe for bends	NO	4		
16.4.12	Extra over downpipe for 160mm diameter anti splash shoe	NO	4		
16.4.13	Extra over 150mm fulbora outlets including galvanised expanded metal mesh	NO	4		
	TOTAL FOR FLAT ROOF FINISHES AND RAIN WATER HARVESTING CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO. 5</u>				
	<u>DOORS</u>				
	<u>Supply, assemble and fix the following Galvanized Steel double door comprising of 75x50x3mm frame with louvre vents and all necessary furniture; The door should be assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4); prepare surface by Sand blasting; apply one coat of 2 pack epoxy zinc phosphate primer; apply three coats of marine grade gloss paint (Ref Architects Detailing)</u>				
16.5.1	Double leaf door Overal size 2200mm x 2400mm high as D-001	NO	1		
	TOTAL FOR DOORS CARRIED TO SUMMARY				
	<u>ELEMENT NO. 6</u>				
	<u>FIXTURES AND FITTINGS:</u>				
	<u>"All Provisional"</u>				
	FIXTURES AND FITTINGS:-(PROVISIONAL)				
	Stainless steel grating				
16.6.1	300mm wide stainless steel channel grating grade 3.1:6 marine grade: comprising 40 x 40 x 6mm edge frame : infilled with 40 x 6mm flats at 50mm centres : 40 x 40 x 6mm frame set in concrete with 150mm long stainless stel end split lugs : smooth weld joints	LM	14		
16.6.2	Plinth 200mm thick plain concrete class 20/20 in plinth	SM	5		
16.6.3	Edges of plinths 150-225mm high	LM	9		
	TOTAL OF FIXTURES AND FITTINGS, CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO.7</u>				
	<u>INTERNAL FINISHES</u>				
	<u>Floor Finishes</u>				
	Screed; cement and sand 1:3 with approved integral dust proofing additive wood floated.				
16.7.1	32 mm thick to receive terrazzo (m.s)	SM	25		
	<u>Polished Terrazzo paving</u>				
16.7.2	25mm thick insitu polished terrazzo laid on concrete in approved coloured aggregate finished smooth including sanding and polishing	SM	25		
16.7.3	20 x 100mm ditto skirting	LM	20		
16.7.4	25 mm wide Slip-resistant Carborandum inserts on Terrazzo bonded with an approved adhesive	LM	20		
	<u>Plastic dividing strips</u>				
16.7.5	32 x 3mm thick plastic dividing strips	LM	38		
	<u>Wall Finishes</u>				
	15mm thick two coat gauged cement lime and sand (1:2:9) plaster steel trowelled smooth to:-				
16.7.6	To surfaces of walls,columns and beams	SM	73		
	<u>Ceiling Finishes</u>				
	15 mm Thick Internal cement sand (1:3) gauged plaster as described to:				
16.7.8	Soffits of concrete slab	SM	25		
	<u>Painting and Decorating</u>				
	Prepare and apply undercoat and three coats PVA based premium quality marine grade silk vinyl sheen emulsion paint as approved to:				
16.7.9	To plastered surface of walls,columns and beams	SM	73		
16.7.10	Precast concrete Louvre Blocks	SM	10		
16.7.12	Plastered concrete slab soffits	SM	25		
	TOTAL FOR INTERNAL FINISHES CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO.8</u>				
	<u>EXTERNAL FINISHES</u>				
	<u>Floor Finishes</u>				
	Screed; cement and sand 1:3 with approved integral dust proofing additive wood floated.				
16.8.1	32 mm thick to receive terrazzo (m.s)	SM	32		
	<u>Polished Terrazzo paving</u>				
16.8.2	25mm thick insitu polished terrazzo laid on concrete in approved coloured aggregate finished smooth including sanding and polishing	SM	32		
16.8.3	20 x 100mm ditto skirting	LM	21		
16.8.4	25 mm wide Slip-resistant Carborandum inserts on Terrazzo bonded with an approved adhesive	LM	35		
	<u>Plastic dividing strips</u>				
16.8.5	32 x 3mm thick plastic dividing strips	LM	48		
	<u>Wall Finishes</u>				
16.8.6	15mm Thick cement sand (1:3) rendering to wall,columns and beams	SM	156		
16.8.7	To gutter beams	SM	35		
	Prepare and apply one undercoat and two finishing coats marine grade weatherguard exterior paint as approved to:				
16.8.9	Rendered surfaces of walls,columns and beams	SM	156		
16.8.10	Precast concrete Louvre Blocks	SM	10		
16.8.11	To gutter beams	SM	35		
	<u>Ceiling Finishes</u>				
	15 mm Thick Internal cement sand (1:3) gauged plaster as described to:				
16.8.13	Soffits of concrete slab	SM	21		
	<u>Painting and Decoration</u>				
	Prepare surface,apply undercoat and apply three coats of premium quality marine grade emulsion paint to:-				
16.8.14	Plastered ceiling surfaces	SM	21		
	TOTAL FOR EXTERNAL FINISHES CARRIED TO SUMMARY				

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>ELEMENT NO.9</u>				
	BUILDERS WORK IN CONNECTION WITH SERVICES(BWICS)				
	Builder's Work incidental to ventilation,electrical installations, concealed fixings				
16.9.1	Allow for making holes, chasing walls, floors, inclusion of sleeves and other items necessary for the proper carrying out of the installation;including making good all surfaces	ITEM	1		
	TOTAL FOR BWICS CARRIED TO SUMMARY				
	<u>SUMMARY</u>				
1	SUBSTRUCTURES				
2	R.C SUPERSTRUCTURE				
3	EXTERNAL WALLS				
4	FLAT ROOF FINISHES AND RAIN WATER HARVESTING				
5	DOORS				
6	FIXTURES AND FITTINGS				
7	INTERNAL FINISHES				
8	EXTERNAL FINISHES				
9	BWICS				
	TOTAL FOR POWER HOUSE CARRIED TO SUMMARY OF BUILDERS' WORKS				

DAY WORKS

BILL NO.17

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU
COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	(All Rates are V.A.T Inclusive)				
	<u>The dayworks rates priced below should include all overheads and profits</u>				
17.1	<u>Provision of labour</u>				
17.1.1	Porter	Hrs	4		
17.1.2	Semi-skilled	Hrs	4		
17.1.3	Mason/	Hrs	4		
17.1.4	Steel fixer	Hrs	4		
17.1.5	Carpenter	Hrs	4		
17.1.6	Painter	Hrs	4		
17.1.7	Tile fixer	Hrs	4		
17.1.8	Welder/Electrician	Hrs	4		
17.1.9	Foreman	Hrs	4		
17.1.10	Carpenter for joinery	Hrs	4		
17.1.11	Plumber	Hrs	4		
17.1.12	Electrician	Hrs	4		
17.2	<u>Provision of plant</u>				
	<u>Any plant to be provided must be in good working condition. The day works rate provided must be inclusive of all running costs and overheads</u>				
17.2.1	Lorry (minimum 8 tonne capacity - or similar)	Hrs	5		
17.2.2	Tipper (8 tonne capacity - or similar)	Hrs	5		
17.2.3	Compressor	Hrs	5		
17.2.4	Roller	Hrs	5		
17.2.5	Plate compactor	Hrs	5		
17.2.6	Wheel loader	Hrs	5		
17.2.7	Grader	Hrs	5		
17.2.8	Crawl loader	Hrs	5		
17.2.9	Jack hammer	Hrs	5		
17.2.10	Dewatering pump	Hrs	5		
17.2.11	Concrete mixer	Hrs	5		
17.2.12	Dumper	Hrs	5		
17.2.13	Hand tools (power drills, grinders, torque wrenches, etc.)	Hrs	5		
17.2.14	Excavator	Hrs	5		
17.2.15	Bulldozer	Hrs	5		
17.2.16	Motor grade	Hrs	5		
17.2.17	Portable generator	Hrs	5		
17.2.18	3-Phase power generator	Hrs	5		
17.2.19	Vibrator	Hrs	5		
	Total Carried to Summary				

**BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU
COUNTY**

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
17.3	<u>Provision of material</u> <u>Any materials to be provided must be of good quality and upto standard for use in permanent works. The rate provided must be inclusive of all delivery costs and overheads</u>				
17.3.1	Ordinary portland cement @ 50kg bags	Bags	5		
17.3.2	Clean river sand	m3	5		
17.3.3	12-20mm graded course aggregate	m3	5		
17.3.4	Manufactured sand / Quarry dust / 0-6mm aggregate	m3	5		
17.3.5	Graded crushed stone (crusher run - 0 to 60mm)	m3	5		
17.3.6	Murram	m3	5		
17.3.7	Hardcore	m3	5		
17.3.8	Redsoil	m3	5		
17.3.9	Reinforcement steel	Kg	100		
17.3.10	Sawn timber formwork	m2	5		
17.3.11	6mm thick clear glass	m2	5		
17.3.12	Water	lts	100		
17.3.13	Diesel fuel	lts	5		
	Total Carried to Summary Below				
	<u>DAYWORKS SUMMARY</u>				
A	Total Brought Forward from page DW/1				
B	Total Brought Forward from DW/2 above				
	TOTAL FOR DAY WORKS CARRIED TO GRAND SUMMARY				

PROVISIONAL SUMS

BILL NO.18

BILL OF QUANTITIES FOR PROPOSED CONSTRUCTION OF MUKOWE FISH LANDING SITE IN LAMU COUNTY

[illegible]

MAIN SUMMARY

18. GRAND SUMMARY

Contract Name: CONSTRUCTION OF MOKOWE FISH LANDING SITE

RFBNo.: KE-MOMBE&MA-LM-2024-010-CW

<i>General Summary</i>	<i>Page</i>	<i>Amount</i>
BILL NO. 1: PARTICULAR PRELIMINARIES	PP/7	
BILL NO. 2: GENERAL PRELIMINARIES	GP/13	
BILL NO.3 ESMP	ESMP/8	
BILL NO.4 FISH PROCESSING BUILDING	FPB/17	
BILL NO.5: ABLUTION BLOCK	AB/14	
BILL NO.6: GATE HOUSE	GH/11	
BILL NO.7: BOUNDARY WALL	BW/5	
BILL NO.8: LAND RECLAMATION AND JETTY WORKS	JETTY/5	
BILL NO.9: DRIVEWAY AND PARKING	DW/5	
BILL NO.10: FOUL DRAINAGE	FD/4	
BILL NO.11: UNDERGROUND WATERTANK	UW/3	
BILL NO.12: LANDSCAPING	LW/2	
BILL NO.13: MECHANICAL WORKS	MECH/26	
BILL NO.14: ELECTRICAL WORKS	ELEC/14	
BILL NO.15: PUMP ROOM	PR/10	
BILL NO.16: POWER HOUSE	PH/10	
BILL NO. 17: DAY WORKS	DW/2	
<i>Subtotal of Bills</i>	<i>(A)</i>	
<i>Total for Daywork (Provisional Sum)*</i>	<i>(B)</i>	
<i>Provisional Sum of Kenya Shillings Six Million Only (Kes 6,000,000.00) for fluctuationsⁱⁱ</i>	<i>(C)</i>	<i>6,000,000.00</i>
<i>Total of Bills Plus Provisional Sums (A + B + C)ⁱ</i>	<i>(D)</i>	
<i>Add Provisional Sum of Kenya Shillings Twelve Million Only (Kes 12,000,000.00) for Contingency Allowanceⁱⁱ</i>	<i>(E)</i>	<i>12,000,000.00</i>
<i>Bid Price (D + E) (Carried forward to Letter of Bid)</i>	<i>(F)</i>	

i) All Provisional Sums are to be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clauses 13.4 and 13.5 of the General Conditions except with respect to DAAB Fees and Expenses for which Sub-Clause 13.4 of the Particular Conditions – Part B shall apply.

ii) To be entered by the Employer.* For evaluation purposes, Provisional Sum, other than Daywork will be excluded

