REPUBLIC OF KENYA

MINISTRY OF HEALTH

PROPOSED DOCTORS HOUSES AT MPEKETONI SUB-COUNTY HOSPITAL IN LAMU COUNTY

W.P. ITEM NO. D108/ CO.-LMU/ 1601 JOB NO 10195A

TENDER DOCUMENTS

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WORKS SECRETARY
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P.O. BOX 30743 - 00100
NAIROBI

ARCHITECT
CHIEF ARCHITECT
MOTIH & UD- SDPW
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STRUCTURAL ENGINEER (B.S)
CHIEF ENGINEER (STRUC)
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BOX P.O. 30743 – 00100
NAIROBI

AUGUST 2017
REPUBLIC OF KENYA

MINISTRY OF HEALTH

PROPOSED DOCTORS HOUSES AT MPEKETONI SUB-COUNTY HOSPITAL IN LAMU COUNTY

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REPUBLIC OF KENYA
MINISTRY OF HEALTH

PROPOSED DOCTORS HOUSES AT MPEKETONI SUB-COUNTY HOSPITAL LAMU COUNTY

Supplied as part of the Contract: CONSTRUCTION OF 2NO.TWIN TWO BEDROOM STAFF HOUSES, ASSOCIATED ELECTRICAL AND MECHANICAL WORKS- LAMU

W.P. ITEM NO. D108/ CO.-LMU/ 1601 JOB NO 10195A

Issued by:-
Quantities and Contracts Department
Ministry of Transport, Infrastructure, Housing and Urban Development.
(State Department of Public Works)
P O Box 30743- 00100
NAIROBI

The contract for the above mentioned works entered into this …… day of ………………. 2017 by the undersigned refers to these Bills of Quantities and the Ministry of Public Works General Specification date March , 1976 (together with any amendments issued thereto) shall be read and construed as part of the said contract.

..................................................................................................................................................................................
CONTRACTOR

..................................................................................................................................................................................
PRINCIPAL SECRETARY
MINISTRY OF HEALTH

Date: …........................................ Date: …........................................

SPECIAL NOTES
The Contractor is required to check the numbers of the pages of these Bills of Quantities and should he find any missing or in duplicate or figures indistinct he must inform the Principal Secretary for Ministry of Transport, Infrastructure, Housing and Urban Development (State Department of Public Works) Head Office, Ngong Road, Nairobi at once and have the same rectified.

Should the Contractor be in doubt about the precise meaning of any item or figure for any reason whatsoever, he must inform the Principal Secretary, Ministry of Transport, Infrastructure, Housing and Urban Development (State Department of Public Works) Head Office in order that the correct meaning may be decided before the date for submission of tenders.

No liability will be admitted nor claim allowed in respect of errors in the Contractor’s Tender due to mistakes in the Specifications which should have been rectified in the manner described above.

SIGNATURE PAGE AND NOTES

(ii)
REPUBLIC OF KENYA

STANDARD TENDER DOCUMENT

FOR

PROCUREMENT OF WORKS
(BUILDING AND ASSOCIATED
CIVIL ENGINEERING WORKS)

PUBLIC PROCUREMENT OVERSIGHT
AUTHORITY (PPOA)
P.O. BOX 30007 - 00200
NAIROBI.

(REVISED OCTOBER 2006)
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INTRODUCTION

1.1 This standard tender document for procurement of works has been prepared for use by procuring entities in Kenya in the procurement of works (i.e. Buildings and associated Civil Engineering Works).

1.2 The following guidelines should be observed when using the document:-
   (a) Specific details should be furnished in the Invitation to tender and in the special conditions of contract (where applicable). The tender document issued to tenderers should not have blank spaces or options.

   (b) The instructions to tenderers and the General Conditions of Contract should remain unchanged. Any necessary amendments to these parts should be made through Appendix to instructions to tenderers and special conditions of contract respectively.

1.3 (b) Information contained in the invitation to tender shall conform to the data and information in the tender documents to enable prospective tenderers to decide whether or not to participate in the tender and shall indicate any important tender requirements.

   (c) The invitation to tender shall be as an advertisement in accordance with the regulations or a letter of invitation addressed to tenderers who have been prequalified following a request for prequalification.

1.4 The cover of the document shall be modified to include:-

   I. Tender number.
   II. Tender name.
   III. Name of procuring entity.
SECTION I  
INVITATION FOR TENDERS

Tender Name: PROPOSED DOCTORS HOUSES AT MPEKETONI SUB-COUNTY HOSPITAL LAMU COUNTY

1.1 The Ministry of Health, Health Sector Equalization Fund Project invites sealed tenders for the Proposed Upgrading of Merti Health Centre: Construction and Completion of a Ward Block, Maternity Block, Staff Houses and Associated Electrical, Mechanical, Civil and External Works.

1.2 Interested eligible candidates may obtain further information and inspect tender documents at Ministry of Health Headquarters, P.O Box 30016 – 00100 Nairobi, located in Afya House, Cathedral Road off Ngong Road, Supply Chain Management office, 5th Floor, Room No.510B during normal working hours.

1.3 A complete set of tender documents may be obtained by interested candidates upon payment of non-refundable fee of Kshs.3,000 in cash or Bankers Cheque payable to the Principal Secretary, Ministry of Health.

1.4 Prices quoted should be net inclusive of all taxes, must be in Kenya shillings and shall remain valid for 150 days from the closing date of tender.

1.5 Completed tender documents are to be enclosed in plain sealed envelopes marked with Tender name and reference number and deposited in the Tender Box at Ministry of Health, P.O Box 30016 – 00100 Nairobi, located in Afya House, Cathedral Road off Ngong Road, 1st Floor or to be addressed to the Principal Secretary, Ministry of Health P.O Box 30016 – 00100 Nairobi so as to be received on or before Tuesday, 15th, August, 2017 at 10.00am.

1.6 Tenders will be opened immediately thereafter in the presence of the candidates or their representatives who choose to attend at GTZ Boardroom, Ground floor, Afya house, Cathedral Road Off Ngong Road.

Head, Supply Chain Management

For Principal Secretary, Ministry of Health

Services

Health
## SECTION II

### INSTRUCTIONS TO TENDERERS

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INSTRUCTIONS TO TENDERERS.

1. General/Eligibility/Qualifications/Joint venture/Cost of tendering

1.1 The Employer as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The successful tenderer will be expected to complete the Works by the Intended Completion Date specified in the tender documents.

1.2 All tenderers shall provide the Qualification Information, a statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or has not been associated in the past, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the Works, and any of its affiliates, shall not be eligible to tender.

1.3 All tenderers shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

1.4 In the event that pre-qualification of potential tenderers has been undertaken, only tenders from pre-qualified tenderers will be considered for award of Contract. These qualified tenderers should submit with their tenders any information updating their original pre-qualification applications or, alternatively, confirm in their tenders that the originally submitted pre-qualification information remains essentially correct as of the date of tender submission.

1.5 Where no pre-qualification of potential tenderers has been done, all tenderers shall include the following information and documents with their tenders, unless otherwise stated:

(a) copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the tender to commit the tenderer:

(b) total monetary value of construction work performed for each of the last five years:
(c) experience in works of a similar nature and size for each of the last five years, and details of work under way or contractually committed; and names and addresses of clients who may be contacted for further information on these contracts;

(d) major items of construction equipment proposed to carry out the Contract and an undertaking that they will be available for the Contract.

(e) qualifications and experience of key site management and technical personnel proposed for the Contract and an undertaking that they shall be available for the Contract.

(f) reports on the financial standing of the tenderer, such as profit and loss statements and auditor's reports for the past five years;

(g) evidence of adequacy of working capital for this Contract (access to line(s) of credit and availability of other financial resources);

(h) authority to seek references from the tenderer’s bankers;

(i) information regarding any litigation, current or during the last five years, in which the tenderer is involved, the parties concerned and disputed amount; and

(j) proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price.

1.6 Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements, unless otherwise stated:

(a) the tender shall include all the information listed in clause 1.5 above for each joint venture partner;

(b) the tender shall be signed so as to be legally binding on all partners;

(c) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;
(d) one of the partners will be nominated as being in charge, authorised to incur liabilities, and receive instructions for and on behalf of all partners of the joint venture; and

(e) the execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.

1.7 To qualify for award of the Contract, tenderers shall meet the following minimum qualifying criteria;

(a) annual volume of construction work of at least 2.5 times the estimated annual cashflow for the Contract;

(b) experience as main contractor in the construction of at least two works of a nature and complexity equivalent to the Works over the last 10 years (to comply with this requirement, works cited should be at least 70 percent complete);

(c) proposals for the timely acquisition (own, lease, hire, etc.) of the essential equipment listed as required for the Works;

(d) a Contract manager with at least five years’ experience in works of an equivalent nature and volume, including no less than three years as Manager; and

(e) liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract, of no less than 4 months of the estimated payment flow under this Contract.

1.8 The figures for each of the partners of a joint venture shall be added together to determine the tenderer’s compliance with the minimum qualifying criteria of clause 1.7 (a) and (e); however, for a joint venture to qualify, each of its partners must meet at least 25 percent of minimum criteria 1.7 (a), (b) and (e) for an individual tenderer, and the partner in charge at least 40 percent of those minimum criteria. Failure to comply with this requirement will result in rejection of the joint venture’s tender. Subcontractors’ experience and resources will not be taken into account in determining the tenderer’s compliance with the qualifying criteria, unless otherwise stated.

1.9 Each tenderer shall submit only one tender, either individually or as a partner in a joint venture. A tenderer who submits or participates in more than one tender (other
than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the tenderer's participation to be disqualified.

1.10 The tenderer shall bear all costs associated with the preparation and submission of his tender, and the Employer will in no case be responsible or liable for those costs.

1.11 The tenderer, at the tenderer’s own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings, and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.

1.12 The procuring entity’s employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.

1.13 The price to be charged for the tender document shall not exceed Kshs.5,000/=.

1.14 The procuring entity shall allow the tenderer to review the tender document free of charge before purchase.

2. **Tender Documents**

2.1 The complete set of tender documents comprises the documents listed below and any addenda issued in accordance with Clause 2.4.

   (a) These Instructions to Tenderers
   (b) Form of Tender and Qualification Information
   (c) Conditions of Contract
   (d) Appendix to Conditions of Contract
   (e) Specifications
   (f) Drawings
   (g) Bills of Quantities
   (h) Forms of Securities

2.2 The tenderer shall examine all Instructions, Forms to be filled and Specifications in the tender documents. Failure to furnish all information required by the tender documents, or submission of a tender not substantially responsive to the tendering documents in every respect will be at the tenderer’s risk and may result in rejection of his tender.

2.3 A prospective tenderer making an inquiry relating to the tender documents may notify the Employer in writing or by cable, telex or facsimile at the address indicated in the letter of invitation to tender. The Employer will only respond to
requests for clarification received earlier than seven days prior to the deadline for submission of tenders. Copies of the Employer’s response will be forwarded to all persons issued with tendering documents, including a description of the inquiry, but without identifying its source.

2.4 Before the deadline for submission of tenders, the Employer may modify the tendering documents by issuing addenda. Any addendum thus issued shall be part of the tendering documents and shall be communicated in writing or by cable, telex or facsimile to all tenderers. Prospective tenderers shall acknowledge receipt of each addendum in writing to the Employer.

2.5 To give prospective tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Employer shall extend, as necessary, the deadline for submission of tenders, in accordance with Clause 4.2 here below.

3. Preparation of Tenders

3.1 All documents relating to the tender and any correspondence shall be in English language.

3.2 The tender submitted by the tenderer shall comprise the following:

(a) These Instructions to Tenderers, Form of Tender, Conditions of Contract, Appendix to Conditions of Contract and Specifications;

(b) Tender Security;

(c) Priced Bill of Quantities ;

(d) Qualification Information Form and Documents;

(e) Alternative offers where invited; and

(f) Any other materials required to be completed and submitted by the tenderers.

3.3 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. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause relevant to the Contract, as of 30 days prior to the deadline for submission of tenders,
shall be included in the tender price submitted by the tenderer.

3.4 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.

3.5 The unit rates and prices shall be in Kenya Shillings.

3.6 Tenders shall remain valid for a period of sixty (60) days from the date of submission. However in exceptional circumstances, the Employer may request that the tenderers extend the period of validity for a specified additional period. The request and the tenderers’ responses shall be made in writing. A tenderer may refuse the request without forfeiting the Tender Security. A tenderer agreeing to the request will not be required or permitted to otherwise modify the tender, but will be required to extend the validity of Tender Security for the period of the extension, and in compliance with Clause 3.7 - 3.11 in all respects.

3.7 The tenderer shall furnish, as part of the tender, a Tender Security in the amount and form specified in the appendix to invitation to tenderers. This shall be in the amount not exceeding 2 percent of the tender price.

3.8 The format of the Tender Security should be in accordance with the form of Tender Security included in Section G - Standard forms or any other form acceptable to the Employer. Tender Security shall be valid for 30 days beyond the validity of the tender.

3.9 Any tender not accompanied by an acceptable Tender Security shall be rejected. The Tender Security of a joint venture must define as “Tenderer” all joint venture partners and list them in the following manner: a joint venture consisting of “............”, “............”, and “............”.

3.10 The Tender Securities of unsuccessful tenderers will be returned within 28 days of the end of the tender validity period specified in Clause 3.6.

3.11 The Tender Security of the successful tenderer will be discharged when the tenderer has signed the Contract Agreement and furnished the required Performance Security.

3.12 The Tender Security may be forfeited

(a) if the tenderer withdraws the tender after tender opening during the period of tender validity;
(b) if the tenderer does not accept the correction of the tender price, pursuant to Clause 5.7;

(c) in the case of a successful tenderer, if the tenderer fails within the specified time limit to

(i) sign the Agreement, or
(ii) furnish the required Performance Security.

3.13 Tenderers shall submit offers that comply with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. Alternatives will not be considered, unless specifically allowed in the invitation to tender. If so allowed, tenderers wishing to offer technical alternatives to the requirements of the tendering documents must also submit a tender that complies with the requirements of the tendering documents, including the basic technical design as indicated in the Drawings and Specifications. In addition to submitting the basic tender, the tenderer shall provide all information necessary for a complete evaluation of the alternative, including design calculations, technical specifications, breakdown of prices, proposed construction methods and other relevant details. Only the technical alternatives, if any, of the lowest evaluated tender conforming to the basic technical requirements shall be considered.

3.14 The tenderer shall prepare one original of the documents comprising the tender documents as described in Clause 3.2 of these Instructions to Tenderers, bound with the volume containing the Form of Tender, and clearly marked “ORIGINAL”. In addition, the tenderer shall submit copies of the tender, in the number specified in the invitation to tender, and clearly marked as “COPIES”. In the event of discrepancy between them, the original shall prevail.

3.15 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorised to sign on behalf of the tenderer, pursuant to Clause 1.5 (a) or 1.6 (b), as the case may be. All pages of the tender where alterations or additions have been made shall be initialled by the person or persons signing the tender.

3.16 Clarification of tenders shall be requested by the tenderer to be received by the procuring entity not later than 7 days prior to the deadline for submission of tenders.
3.17 The procuring entity shall reply to any clarifications sought by the tenderer within 3 days of receiving the request to enable the tenderer to make timely submission of its tender.

3.18 The tender security shall be in the amount of 0.5 – 2 per cent of the tender price.

4. Submission of Tenders

4.1 The tenderer shall seal the original and all copies of the tender in two inner envelopes and one outer envelope, duly marking the inner envelopes as “ORIGINAL” and “COPIES” as appropriate. The inner and outer envelopes shall:

(a) be addressed to the Employer at the address provided in the invitation to tender;

(b) bear the name and identification number of the Contract as defined in the invitation to tender; and

(c) provide a warning not to open before the specified time and date for tender opening.

4.2 Tenders shall be delivered to the Employer at the address specified above not later than the time and date specified in the invitation to tender. However, the Employer may extend the deadline for submission of tenders by issuing an amendment in accordance with Sub-Clause 2.5 in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline will then be subject to the new deadline.

4.3 Any tender received after the deadline prescribed in clause 4.2 will be returned to the tenderer un-opened.

4.4 Tenderers may modify or withdraw their tenders by giving notice in writing before the deadline prescribed in clause 4.2. Each tenderer’s modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with clause 3.13 and 4.1, with the outer and inner envelopes additionally marked “MODIFICATION” and “WITHDRAWAL”, as appropriate. No tender may be modified after the deadline for submission of tenders.

4.5 Withdrawal of a tender between the deadline for submission of tenders and the expiration of the period of tender validity specified in the invitation to tender or as extended pursuant to Clause 3.6 may result in the forfeiture of the Tender Security pursuant to Clause 3.11.
4.6 Tenderers may only offer discounts to, or otherwise modify the prices of their tenders by submitting tender modifications in accordance with Clause 4.4 or be included in the original tender submission.

5. **Tender Opening and Evaluation**

5.1 The tenders will be opened by the Employer, including modifications made pursuant to Clause 4.4, in the presence of the tenderers’ representatives who choose to attend at the time and in the place specified in the invitation to tender. Envelopes marked “WITHDRAWAL” shall be opened and read out first. Tenderers’ and Employer’s representatives who are present during the opening shall sign a register evidencing their attendance.

5.2 The tenderers’ names, the tender prices, the total amount of each tender and of any alternative tender (if alternatives have been requested or permitted), any discounts, tender modifications and withdrawals, the presence or absence of Tender Security, and such other details as may be considered appropriate, will be announced by the Employer at the opening. Minutes of the tender opening, including the information disclosed to those present will be prepared by the Employer.

5.3 Information relating to the examination, clarification, evaluation, and comparison of tenders and recommendations for the award of Contract shall not be disclosed to tenderers or any other persons not officially concerned with such process until the award to the successful tenderer has been announced. Any effort by a tenderer to influence the Employer’s officials, processing of tenders or award decisions may result in the rejection of his tender.

5.4 To assist in the examination, evaluation, and comparison of tenders, the Employer at his discretion, may ask any tenderer for clarification of the tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, telex or facsimile but no change in the price or substance of the tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered in the evaluation of the tenders in accordance with Clause 5.7.

5.5 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender (a) meets the eligibility criteria defined in Clause 1.7;(b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the tendering documents. A substantially responsive tender is one which conforms to all the terms, conditions and specifications of
the tendering documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the tendering documents, the Employer’s rights or the tenderer’s obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other tenderers presenting substantially responsive tenders.

5.6 If a tender is not substantially responsive, it will be rejected, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

5.7 Tenders determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows:

(a) where there is a discrepancy between the amount in figures and the amount in words, the amount in words will prevail; and

(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case the adjustment will be made to the entry containing that error.

(c) In the event of a discrepancy between the tender amount as stated in the Form of Tender and the corrected tender figure in the main summary of the Bill of Quantities, the amount as stated in the Form of Tender shall prevail.

(d) The Error Correction Factor shall be computed by expressing the difference between the tender amount and the corrected tender sum as a percentage of the corrected Builder’s Work (i.e. Corrected tender sum less P.C. and Provisional Sums)

(e) The Error Correction Factor shall be applied to all Builder’s Work (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuation of variations.
(f) the amount stated in the tender will be adjusted in accordance with the above procedure for the correction of errors and, with concurrence of the tenderer, shall be considered as binding upon the tenderer. If the tenderer does not accept the corrected amount, the tender may be rejected and the Tender Security may be forfeited in accordance with clause 3.11.

5.8 The Employer will evaluate and compare only the tenders determined to be substantially responsive in accordance with Clause 5.5.

5.9 In evaluating the tenders, the Employer will determine for each tender the evaluated tender price by adjusting the tender price as follows:

(a) making any correction for errors pursuant to clause 5.7;

(b) excluding provisional sums and the provision, if any, for contingencies in the Bill of Quantities, but including Dayworks where priced competitively.

(c) making an appropriate adjustment for any other acceptable variations, deviations, or alternative offers submitted in accordance with clause 3.12; and

(d) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with clause 4.6

5.10 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the tender documents or otherwise result in unsolicited benefits for the Employer will not be taken into account in tender evaluation.

5.11 The tenderer shall not influence the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. Any effort by the Tenderer to influence the Employer or his employees in his decision on tender evaluation, tender comparison or Contract award may result in the rejection of the tender.

5.12 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not sub-contract work valued at more than 50% of the Contract Price excluding Provisional Sums to a Non-indigenous sub-contractor.
6. **Award of Contract**

6.1 Subject to Clause 6.2, the award of the Contract will be made to the tenderer whose tender has been determined to be substantially responsive to the tendering documents and who has offered the lowest evaluated tender price, provided that such tenderer has been determined to be (a) eligible in accordance with the provision of Clauses 1.2, and (b) qualified in accordance with the provisions of clause 1.7 and 1.8.

6.2 Notwithstanding clause 6.1 above, the Employer reserves the right to accept or reject any tender, and to cancel the tendering process and reject all tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the action.

6.3 The tenderer whose tender has been accepted will be notified of the award prior to expiration of the tender validity period in writing or by cable, telex or facsimile. This notification (hereinafter and in all Contract documents called the “Letter of Acceptance”) will state the sum (hereinafter and in all Contract documents called the “Contract Price”) that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract. At the same time the other tenderers shall be informed that their tenders have not been successful.

The contract shall be formed on the parties signing the contract.

6.4 The Agreement will incorporate all agreements between the Employer and the successful tenderer. Within 14 days of receipt the successful tenderer will sign the Agreement and return it to the Employer.

6.5 Within 21 days after receipt of the Letter of Acceptance, the successful tenderer shall deliver to the Employer a Performance Security in the amount stipulated in the Appendix to Conditions of Contract and in the form stipulated in the Tender documents. The Performance Security shall be in the amount and specified form.

6.6 Failure of the successful tenderer to comply with the requirements of clause 6.5 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Tender Security.
6.7 Upon the furnishing by the successful tenderer of the Performance Security, the Employer will promptly notify the other tenderers that their tenders have been unsuccessful.

6.8 Preference where allowed in the evaluation of tenders shall not be allowed for contracts not exceeding one year (12 months)

6.9 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.

6.10 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.

6.11 Contract price variations shall not be allowed for contracts not exceeding one year (12 months)

6.12 Where contract price variation is allowed, the valuation shall not exceed 15% of the original contract price.

6.13 Price variation request shall be processed by the procuring entity within 30 days of receiving the request.

6.14 The procuring entity may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.

6.15 The procuring entity shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.

6.16 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

7. **Corrupt and Fraudulent practices**

7.1 The procuring entity requires that tenderers observe the highest standards of ethics during procurement process and execution of contracts. A tenderer shall sign a declaration that he has not and will not be involved in corrupt and fraudulent practices.
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1. Definitions

1.1 In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated;

“Bill of Quantities” means the priced and completed Bill of Quantities forming part of the tender.

“Compensation Events” are those defined in Clause 24 hereunder.

“The Completion Date” means the date of completion of the Works as certified by the Project Manager, in accordance with Clause 31.

“The Contract” means the agreement entered into between the Employer and the Contractor as recorded in the Agreement Form and signed by the parties including all attachments and appendices thereto and all documents incorporated by reference therein to execute, complete, and maintain the Works,

“The Contractor” refers to the person or corporate body whose tender to carry out the Works has been accepted by the Employer.

“The Contractor’s Tender” is the completed tendering document submitted by the Contractor to the Employer.

“The Contract Price” is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

“Days” are calendar days; “Months” are calendar months.

“A Defect” is any part of the Works not completed in accordance with the Contract.

“The Defects Liability Certificate” is the certificate issued by Project Manager upon correction of defects by the Contractor.

“The Defects Liability Period” is the period named in the Contract Data and calculated from the Completion Date.

“Drawings” include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
“Dayworks” are Work inputs subject to payment on a time basis for labour and the associated materials and plant.

“Employer”, or the “Procuring entity” as defined in the Public Procurement Regulations (i.e. Central or Local Government administration, Universities, Public Institutions and Corporations, etc) is the party who employs the Contractor to carry out the Works.

“Equipment” is the Contractor’s machinery and vehicles brought temporarily to the Site for the execution of the Works.

“The Intended Completion Date” is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

“Materials” are all supplies, including consumables, used by the Contractor for incorporation in the Works.

“Plant” is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

“Project Manager” is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract and shall be an “Architect” or a “Quantity Surveyor” registered under the Architects and Quantity Surveyors Act Cap 525 or an “Engineer” registered under Engineers Registration Act Cap 530.

“Site” is the area defined as such in the Appendix to Condition of Contract.

“Site Investigation Reports” are those reports that may be included in the tendering documents which are factual and interpretative about the surface and subsurface conditions at the Site.

“Specifications” means the Specifications of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

“Start Date” is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with the Site possession date(s).
“A Subcontractor” is a person or corporate body who has a Contract with the Contractor to carry out a part of the Work in the Contract, which includes Work on the Site.

“Temporary works” are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

“A Variation” is an instruction given by the Project Manager which varies the Works.

“The Works” are what the Contract requires the Contractor to construct, install, and turnover to the Employer, as defined in the Appendix to Conditions of Contract.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning in English Language unless specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Appendix to Conditions of Contract, reference in the Conditions of Contract to the Works, the Completion Date and the Intended Completion Date apply to any section of the Works (other than references to the Intended Completion Date for the whole of the Works).

2.3 The following documents shall constitute the Contract documents and shall be interpreted in the following order of priority;

(1) Agreement,
(2) Letter of Acceptance,
(3) Contractor’s Tender,
(4) Appendix to Conditions of Contract,
(5) Conditions of Contract,
(6) Specifications,
(7) Drawings,
(8) Bill of Quantities,
(9) Any other documents listed in the Appendix to Conditions of Contract as forming part of the Contract.

Immediately after the execution of the Contract, the Project Manager shall furnish both the Employer and the Contractor with each of all the Contract documents. Further, as and when necessary the Project Manager shall furnish the Contractor [always with a copy to the Employer] with three [3] copies of such further drawings or details or descriptive schedules as are reasonably necessary either to explain or amplify the Contract drawings or to enable the Contractor to carry out and complete the Works in accordance with these Conditions.

3. Language and Law

3.1 Language of the Contract and the law governing the Contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

4 Project Manager’s Decisions

4.1 Except where otherwise specifically stated, the Project Manager will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5 Delegation

5.1 The Project Manager may delegate any of his duties and responsibilities to others after notifying the Contractor.

6 Communications

6.1 Communication between parties shall be effective only when in writing. A notice shall be effective only when it is delivered.

7 Subcontracting

7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor’s obligations.

8 Other Contractors
8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities etc. as listed in the Appendix to Conditions of Contract and also with the Employer, as per the directions of the Project Manager. The Contractor shall also provide facilities and services for them. The Employer may modify the said List of Other Contractors etc., and shall notify the Contractor of any such modification.

9 Personnel

9.1 The Contractor shall employ the key personnel named in the Qualification Information, to carry out the functions stated in the said Information or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Qualification Information. If the Project Manager asks the Contractor to remove a person who is a member of the Contractor’s staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Work in the Contract.

10 Works

10.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings. The Works may commence on the Start Date and shall be carried out in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

11 Safety and Temporary Works

11.1 The Contractor shall be responsible for the design of temporary works. However before erecting the same, he shall submit his designs including specifications and drawings to the Project Manager and to any other relevant third parties for their approval. No erection of temporary works shall be done until such approvals are obtained.

11.2 The Project Manager’s approval shall not alter the Contractor’s responsibility for design of the Temporary works and all drawings prepared by the Contractor for the execution of the temporary or permanent Works, shall be subject to prior approval by the Project Manager before they can be used.

11.3 The Contractor shall be responsible for the safety of all activities on the Site.
12. Discoveries

12.1 Anything of historical or other interest or of significant value unexpectedly discovered on Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager’s instructions for dealing with them.

13. Work Program

13.1 Within the time stated in the Appendix to Conditions of Contract, the Contractor shall submit to the Project Manager for approval a program showing the general methods, arrangements, order, and timing for all the activities in the Works. An update of the program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Work, including any changes to the sequence of the activities.

The Contractor shall submit to the Project Manager for approval an updated program at intervals no longer than the period stated in the Appendix to Conditions of Contract. If the Contractor does not submit an updated program within this period, the Project Manager may withhold the amount stated in the said Appendix from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue program has been submitted. The Project Manager’s approval of the program shall not alter the Contractor’s obligations. The Contractor may revise the program and submit it to the Project Manager again at any time. A revised program shall show the effect of Variations and Compensation Events.

14. Possession of Site

14.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Appendix to Conditions of Contract, the Employer will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.

15. Access to Site

15.1 The Contractor shall allow the Project Manager and any other person authorised by the Project Manager, access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

16. Instructions
16.1 The Contractor shall carry out all instructions of the Project Manager which are in accordance with the Contract.

17. Extension or Acceleration of Completion Date

17.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining Work, which would cause the Contractor to incur additional cost. The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager in writing for a decision upon the effect of a Compensation Event or variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay caused by such failure shall not be considered in assessing the new (extended) Completion Date.

17.2 No bonus for early completion of the Works shall be paid to the Contractor by the Employer.

18. Management Meetings

18.1 A Contract management meeting shall be held monthly and attended by the Project Manager and the Contractor. Its business shall be to review the plans for the remaining Work and to deal with matters raised in accordance with the early warning procedure. The Project Manager shall record the minutes of management meetings and provide copies of the same to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

19. Early Warning

19.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the Work increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

19.2 The Contractor shall cooperate with the Project Manager in making and considering proposals on how the effect of such
an event or circumstance can be avoided or reduced by anyone involved in the Work and in carrying out any resulting instructions of the Project Manager.

20. **Defects**

20.1 The Project Manager shall inspect the Contractor’s work and notify the Contractor of any defects that are found. Such inspection shall not affect the Contractor’s responsibilities. The Project Manager may instruct the Contractor to search for a defect and to uncover and test any Work that the Project Manager considers may have a defect. Should the defect be found, the cost of uncovering and making good shall be borne by the Contractor, However, if there is no defect found, the cost of uncovering and making good shall be treated as a variation and added to the Contract Price.

20.2 The Project Manager shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the Appendix to Conditions of Contract. The Defects Liability Period shall be extended for as long as defects remain to be corrected.

20.3 Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified by the Project Manager’s notice. If the Contractor has not corrected a defect within the time specified in the Project Manager’s notice, the Project Manager will assess the cost of having the defect corrected by other parties and such cost shall be treated as a variation and be deducted from the Contract Price.

21. **Bills Of Quantities**

21.1 The Bills of Quantities shall contain items for the construction, installation, testing and commissioning of the Work to be done by the Contractor. The Contractor will be paid for the quantity of the Work done at the rate in the Bills of Quantities for each item.

21.2 If the final quantity of the Work done differs from the quantity in the Bills of Quantities for the particular item by more than 25 percent and provided the change exceeds 1 percent of the Initial Contract price, the Project Manager shall adjust the rate to allow for the change.

21.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bills of Quantities.

22. **Variations**
22.1 All variations shall be included in updated programs produced by the Contractor.

22.2 The Contractor shall provide the Project Manager with a quotation for carrying out the variations when requested to do so. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period as may be stated by the Project Manager and before the Variation is ordered.

22.3 If the work in the variation corresponds with an item description in the Bills of Quantities and if in the opinion of the Project Manager, the quantity of work is not above the limit stated in Clause 21.2 or the timing of its execution does not cause the cost per unit of quantity to change, the rate in the Bills of Quantities shall be used to calculate the value of the variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the variation does not correspond with items in the Bills of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of Work.

22.4 If the Contractor’s quotation is unreasonable, the Project Manager may order the variation and make a change to the Contract price, which shall be based on the Project Manager’s own forecast of the effects of the variation on the Contractor’s costs.

22.5 If the Project Manager decides that the urgency of varying the Work would prevent a quotation being given and considered without delaying the Work, no quotation shall be given and the variation shall be treated as a Compensation Event.

22.6 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.

22.7 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast.

23. Payment Certificates, Currency of Payments and Advance Payments

23.1 The Contractor shall submit to the Project Manager monthly applications for payment giving sufficient details of the Work done and materials on Site and the amounts which the Contractor considers himself to be entitled to. The Project
Manager shall check the monthly application and certify the amount to be paid to the Contractor within 14 days. The value of Work executed and payable shall be determined by the Project Manager.

23.2 The value of Work executed shall comprise the value of the quantities of the items in the Bills of Quantities completed; materials delivered on Site, variations and compensation events. Such materials shall become the property of the Employer once the Employer has paid the Contractor for their value. Thereafter, they shall not be removed from Site without the Project Manager’s instructions except for use upon the Works.

23.3 Payments shall be adjusted for deductions for retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of issue of each certificate. If the Employer makes a late payment, the Contractor shall be paid simple interest on the late payment in the next payment. Interest shall be calculated on the basis of number of days delayed at a rate three percentage points above the Central Bank of Kenya’s average rate for base lending prevailing as of the first day the payment becomes overdue.

23.4 If an amount certified is increased in a later certificate or as a result of an award by an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

23.5 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

23.6 The Contract Price shall be stated in Kenya Shillings. All payments to the Contractor shall be made in Kenya Shillings and foreign currency in the proportion indicated in the tender, or agreed prior to the execution of the Contract Agreement and indicated therein. The rate of exchange for the calculation of the amount of foreign currency payment shall be the rate of exchange indicated in the Appendix to Conditions of Contract. If the Contractor indicated foreign currencies for payment other than the currencies of the countries of origin of related goods and services the Employer reserves the right to pay the equivalent at the time of payment in the currencies of the countries of such goods and services. The Employer and the Project Manager shall be
notified promptly by the Contractor of any changes in the expected foreign currency requirements of the Contractor during the execution of the Works as indicated in the Schedule of Foreign Currency Requirements and the foreign and local currency portions of the balance of the Contract Price shall then be amended by agreement between Employer and the Contractor in order to reflect appropriately such changes.

23.7 In the event that an advance payment is granted, the following shall apply:

a) On signature of the Contract, the Contractor shall at his request, and without furnishing proof of expenditure, be entitled to an advance of 10% (ten percent) of the original amount of the Contract. The advance shall not be subject to retention money.

b) No advance payment may be made before the Contractor has submitted proof of the establishment of deposit or a directly liable guarantee satisfactory to the Employer in the amount of the advance payment. The guarantee shall be in the same currency as the advance.

c) Reimbursement of the lump sum advance shall be made by deductions from the Interim payments and where applicable from the balance owing to the Contractor. Reimbursement shall begin when the amount of the sums due under the Contract reaches 20% of the original amount of the Contract. It shall have been completed by the time 80% of this amount is reached.

The amount to be repaid by way of successive deductions shall be calculated by means of the formula:

\[
R = \frac{A(x^1 - x^{11})}{80 - 20}
\]

Where:

- \(R\) = the amount to be reimbursed
- \(A\) = the amount of the advance which has been granted
- \(X^1\) = the amount of proposed cumulative payments as a percentage of the original amount of the Contract. This figure will exceed 20% but not exceed 80%.
- \(X^{11}\) = the amount of the previous cumulative payments as a percentage of the original amount of the Contract.
amount of the Contract. This figure will be below 80% but not less than 20%.

d) with each reimbursement the counterpart of the directly liable guarantee may be reduced accordingly.

24. Compensation Events

24.1 The following issues shall constitute Compensation Events:

(a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Appendix to Conditions of Contract.

(b) The Employer modifies the List of Other Contractors, etc., in a way that affects the Work of the Contractor under the Contract.

(c) The Project Manager orders a delay or does not issue drawings, specifications or instructions required for execution of the Works on time.

(d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon the Work, which is then found to have no defects.

(e) The Project Manager unreasonably does not approve a subcontract to be let.

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to tenderers (including the Site investigation reports), from information available publicly and from a visual inspection of the Site.

(g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer or additional work required for safety or other reasons.

(h) Other contractors, public authorities, utilities, or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(i) The effects on the Contractor of any of the Employer’s risks.

(j) The Project Manager unreasonably delays issuing a Certificate of Completion.

(k) Other compensation events described in the Contract or determined by the Project Manager shall apply.
24.2 If a compensation event would cause additional cost or would prevent the Work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

24.3 As soon as information demonstrating the effect of each compensation event upon the Contractor’s forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor’s forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager’s own forecast. The Project Manager will assume that the Contractor will react competently and promptly to the event.

24.4 The Contractor shall not be entitled to compensation to the extent that the Employer’s interests are adversely affected by the Contractor not having given early warning or not having co-operated with the Project Manager.

24.5 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the Appendix to Conditions of Contract.

24.6 The Contractor shall give written notice to the Project Manager of his intention to make a claim within thirty days after the event giving rise to the claim has first arisen. The claim shall be submitted within thirty days thereafter. Provided always that should the event giving rise to the claim of continuing effect, the Contractor shall submit an interim claim within the said thirty days and a final claim within thirty days of the end of the event giving rise to the claim.

25. **Price Adjustment**

25.1 The Project Manager shall adjust the Contract Price if taxes, duties and other levies are changed between the date 30 days before the submission of tenders for the Contract and the date of Completion. The adjustment shall be the change in the amount of tax payable by the Contractor.

25.2 The Contract Price shall be deemed to be based on exchange rates current at the date of tender submission in calculating the cost to the Contractor of materials to be specifically imported (by express provisions in the Contract Bills of Quantities or Specifications) for permanent incorporation in the Works. Unless otherwise stated in the Contract, if at any
time during the period of the Contract exchange rates shall be varied and this shall affect the cost to the Contractor of such materials, then the Project Manager shall assess the net difference in the cost of such materials. Any amount from time to time so assessed shall be added to or deducted from the Contract Price, as the case may be.

25.3 Unless otherwise stated in the Contract, the Contract Price shall be deemed to have been calculated in the manner set out below and in sub-clauses 25.4 and 25.5 and shall be subject to adjustment in the events specified thereunder;

(i) The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the rates of wages and other emoluments and expenses as determined by the Joint Building Council of Kenya (J.B.C.) and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

(ii) Upon J.B.C. determining that any of the said rates of wages or other emoluments and expenses are increased or decreased, then the Contract Price shall be increased or decreased by the amount assessed by the Project Manager based upon the difference, expressed as a percentage, between the rate set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of labour incorporated within the amount of Work remaining to be executed at the date of publication of such increase or decrease.

(iii) No adjustment shall be made in respect of changes in the rates of wages and other emoluments and expenses which occur after the date of Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.4 The prices contained in the Contract Bills of Quantities shall be deemed to be based upon the basic prices of materials to be permanently incorporated in the Works as determined by the J.B.C. and set out in the schedule of basic rates issued 30 days before the date for submission of tenders. A copy of the schedule used by the Contractor in his pricing shall be attached in the Appendix to Conditions of Contract.

25.5 Upon the J.B.C. determining that any of the said basic prices are increased or decreased then the Contract Price shall be increased or decreased by the amount to be assessed by the
Project Manager based upon the difference between the price set out in the schedule of basic rates issued 30 days before the date for submission of tenders and the rate published by the J.B.C. and applied to the quantum of the relevant materials which have not been taken into account in arriving at the amount of any interim certificate under clause 23 of these Conditions issued before the date of publication of such increase or decrease.

25.6 No adjustment shall be made in respect of changes in basic prices of materials which occur after the date for Completion except during such other period as may be granted as an extension of time under clause 17.0 of these Conditions.

25.7 The provisions of sub-clause 25.1 to 25.2 herein shall not apply in respect of any materials included in the schedule of basic rates.

26. Retention

26.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Appendix to Conditions of Contract until Completion of the whole of the Works. On Completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and the remaining half when the Defects Liability Period has passed and the Project Manager has certified that all defects notified to the Contractor before the end of this period have been corrected.

27. Liquidated Damages

27.1 The Contractor shall pay liquidated damages to the Employer at the rate stated in the Appendix to Conditions of Contract for each day that the actual Completion Date is later than the Intended Completion Date. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not alter the Contractor’s liabilities.

27.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rate specified in Clause 23.30

28. Securities

28.1 The Performance Security shall be provided to the Employer no later than the date specified in the Letter of Acceptance
and shall be issued in an amount and form and by a reputable bank acceptable to the Employer, and denominated in Kenya Shillings. The Performance Security shall be valid until a date 30 days beyond the date of issue of the Certificate of Completion.

29. **Dayworks**

29.1 If applicable, the Dayworks rates in the Contractor’s tender shall be used for small additional amounts of Work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

29.2 All work to be paid for as Dayworks shall be recorded by the Contractor on Forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the Work being done.

29.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

30. **Liability and Insurance**

30.1 From the Start Date until the Defects Correction Certificate has been issued, the following are the Employer’s risks:

(a) The risk of personal injury, death or loss of or damage to property (excluding the Works, Plant, Materials and Equipment), which are due to;

   (i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works, or

   (ii) negligence, breach of statutory duty or interference with any legal right by the Employer or by any person employed by or contracted to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in Employer’s design, or due to war or radioactive contamination directly affecting the place where the Works are being executed.

30.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is the Employer’s risk except loss or damage due to;

(a) a defect which existed on or before the Completion Date.
an event occurring before the Completion Date, which was not itself the Employer’s risk

c) the activities of the Contractor on the Site after the Completion Date.

30.3 From the Start Date until the Defects Correction Certificate has been issued, the risks of personal injury, death and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer’s risk are Contractor’s risks.

The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts stated in the Appendix to Conditions of Contract for the following events;

(a) loss of or damage to the Works, Plant, and Materials;
(b) loss of or damage to Equipment;
(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract, and
(d) personal injury or death.

30.4 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager’s approval before the Start Date. All such insurance shall provide for compensation required to rectify the loss or damage incurred.

30.5 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

30.6 Alterations to the terms of insurance shall not be made without the approval of the Project Manager. Both parties shall comply with any conditions of insurance policies.

31. Completion and taking over

31.1 Upon deciding that the Works are complete, the Contractor shall issue a written request to the Project Manager to issue a Certificate of Completion of the Works. The Employer shall take over the Site and the Works within seven [7] days of the Project Manager’s issuing a Certificate of Completion.
32. Final Account

32.1 The Contractor shall issue the Project Manager with a detailed account of the total amount that the Contractor considers payable to him by the Employer under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 30 days of receiving the Contractor’s account if it is correct and complete. If it is not, the Project Manager shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a Payment Certificate. The Employer shall pay the Contractor the amount due in the Final Certificate within 60 days.

33. Termination

33.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract. These fundamental breaches of Contract shall include, but shall not be limited to, the following;

(a) the Contractor stops work for 30 days when no stoppage of work is shown on the current program and the stoppage has not been authorized by the Project Manager;

(b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;

(c) the Contractor is declared bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within 30 days (for Interim Certificate) or 60 days (for Final Certificate) of issue.

(e) the Project Manager gives notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

(f) the Contractor does not maintain a security, which is required.
33.2 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Clause 33.1 above, the Project Manager shall decide whether the breach is fundamental or not.

33.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

33.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible. The Project Manager shall immediately thereafter arrange for a meeting for the purpose of taking record of the Works executed and materials, goods, equipment and temporary buildings on Site.

34. Payment Upon Termination

34.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the Work done and materials ordered and delivered to Site up to the date of the issue of the certificate. Additional liquidated damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable by the Contractor.

34.2 If the Contract is terminated for the Employer’s convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a certificate for the value of the Work done, materials ordered, the reasonable cost of removal of equipment, repatriation of the Contractor’s personnel employed solely on the Works, and the Contractor’s costs of protecting and securing the Works.

34.3 The Employer may employ and pay other persons to carry out and complete the Works and to rectify any defects and may enter upon the Works and use all materials on the Site, plant, equipment and temporary works.

34.4 The Contractor shall, during the execution or after the completion of the Works under this clause remove from the Site as and when required, within such reasonable time as the Project Manager may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to or hired by him, and in default the Employer may (without being responsible for any loss or damage) remove and sell any such property of the Contractor, holding the proceeds less all costs incurred to the credit of the Contractor.
Until after completion of the Works under this clause the Employer shall not be bound by any other provision of this Contract to make any payment to the Contractor, but upon such completion as aforesaid and the verification within a reasonable time of the accounts therefore the Project Manager shall certify the amount of expenses properly incurred by the Employer and, if such amount added to the money paid to the Contractor before such determination exceeds the total amount which would have been payable on due completion in accordance with this Contract the difference shall be a debt payable to the Employer by the Contractor; and if the said amount added to the said money be less than the said total amount, the difference shall be a debt payable by the Employer to the Contractor.

35. **Release from Performance**

35.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop Work as quickly as possible after receiving this certificate and shall be paid for all Work carried out before receiving it.

36. **Corrupt gifts and payments of commission**

The Contractor shall not;

(a) Offer or give or agree to give to any person in the service of the Employer any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for the Employer or for showing or forbearing to show favour or disfavour to any person in relation to this or any other contract for the Employer.

(b) Enter into this or any other contract with the Employer in connection with which commission has been paid or agreed to be paid by him or on his behalf or to his knowledge, unless before the Contract is made particulars of any such commission and of the terms and conditions of any agreement for the payment thereof have been disclosed in writing to the Employer.

Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement Regulations.
issued under The Exchequer and Audit Act Cap 412 of the Laws of Kenya.

37. Settlement Of Disputes

37.1 In case any dispute or difference shall arise between the Employer or the Project Manager on his behalf and the Contractor, either during the progress or after the completion or termination of the Works, such dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed by the Chairman or Vice Chairman of any of the following professional institutions;

(i) Architectural Association of Kenya

(ii) Institute of Quantity Surveyors of Kenya

(iii) Association of Consulting Engineers of Kenya

(iv) Chartered Institute of Arbitrators (Kenya Branch)

(v) Institution of Engineers of Kenya

On the request of the applying party. The institution written to first by the aggrieved party shall take precedence over all other institutions.

37.2 The arbitration may be on the construction of this Contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to be entitled or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.

37.3 Provided that no arbitration proceedings shall be commenced on any dispute or difference where notice of a dispute or difference has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

37.4 Notwithstanding the issue of a notice as stated above, the arbitration of such a dispute or difference shall not commence unless an attempt has in the first instance been made by the parties to settle such dispute or difference
amicably with or without the assistance of third parties. Proof of such attempt shall be required.

37.5 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

37.5.1 The appointment of a replacement Project Manager upon the said person ceasing to act.

37.5.2 Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.

37.5.3 Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.

37.5.4 Any dispute or difference arising in respect of war risks or war damage.

37.6 All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Employer and the Contractor agree otherwise in writing.

37.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.

37.8 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.

37.9 The award of such Arbitrator shall be final and binding upon the parties.
SECTION IV – APPENDIX TO CONDITIONS OF CONTRACT

THE EMPLOYER IS

Name: MINISTRY OF HEALTH

Address: P.O BOX 30016 - 00100 NAIROBI

Name of Authorized Representative: PRINCIPAL SECRETARY

Telephone: 020-2717077

Facsimile: 020-2713750

The Project Manager is

Name: WORKS SECRETARY MOTIH&UD-STATE DEPARTMENT OF PUBLIC WORKS

Address: P.O BOX 30743 -00100 NAIROBI

Telephone: +254-02723101

Facsimile:

The name (and identification number) of the Contract is PROPOSED UPGRADING OF MPEKETONI HEALTH CENTRE; CONSTRUCTION OF 2NO.TWIN BEDROOM STAFF HOUSING, ASSOCIATED EXTERNAL,ELECTRICAL AND MECHANICAL WORKS- LAMU W.P. ITEM NO. D108/ CO.-LMU/ 1601 JOB NO 10195A

The Works consist of PROPOSED UPGRADING OF MPEKETONI HEALTH CENTRE; CONSTRUCTION OF 2NO.TWIN BEDROOM STAFF HOUSING, ASSOCIATED EXTERNAL,ELECTRICAL AND MECHANICAL WORKS- LAMU

The Start Date shall be AGREED WITH THE PROJECT MANAGER

The Intended Completion Date for the whole of the Works shall be SIXTEEN (16) WEEKS AFTER COMMENCEMENT DATE

The following documents also form part of the Contract:
Documents listed in clause 2.1 conditions of contract

The Contractor shall submit a revised program for the Works within Seven (7No) days of delivery of the Letter of Acceptance.

The Site Possession Date shall be AGREED WITH THE PROJECT MANAGER.
The Site is located at **MPEKETONI-LAMU** and is defined in drawings nos. ........................................

The Defects Liability period is **180** days.

Other Contractors, utilities etc., to be engaged by the Employer on the Site Include those for the execution of; **NONE**

The minimum insurance covers shall be;

1. The minimum cover for insurance of the Works and of Plant and Materials in respect of the Contractor’s faulty design is **the entire contract**

2. The minimum cover for loss or damage to Equipment is Kshs **2,000,000**

3. The minimum for insurance of other property is Kshs **5,000,000**

4. The minimum cover for personal injury or death insurance
   - For the Contractor’s employees is **AS PER THE APPLICABLE LAWS IN KENYA**
   - And for other people is Kshs **5,000,000**

The following events shall also be Compensation Events: **Those listed in the conditions of contract.**

The period between Program updates is **thirty (30No) days.**

The amount to be withheld for late submission of an updated Program is **N/A**

The proportion of payments retained is **Ten (10%)** percent.

The Price Adjustment Clause (**SHALL NOT**) apply

The liquidated damages for the whole of the Works is Kshs. **20,000.00** (Per Week)

The Performance Security shall be for the following minimum amounts equivalent as a percentage of the Contract Price- **Five (5%)** percent.

The Completion Period for the Works is **SIXTEEN (16) WEEKS.**

The rate of exchange for calculation of foreign currency payments is **NOT APPLICABLE.**

The schedule of basic rates used in pricing by the Contractor is as attached [Contractor to attach].
Advance Payment **shall not be granted.**

**SECTION V - SPECIFICATIONS**

**Notes for preparing Specifications**

1.0 Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanship for tenderers to respond realistically and competitively to the requirements of the Employer and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract. Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.

2.0 Specifications from previous similar projects are useful and may not be necessary to re-write specifications for every Works Contract.

3.0 There are considerable advantages in standardizing **General Specifications** for repetitive Works in recognized public sectors, such as highways, urban housing, irrigation and water supply. The General Specifications should cover all classes of workmanship, materials and equipment commonly involved in constructions, although not necessarily to be used in a particular works contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

4.0 Care must be taken in drafting Specifications to ensure they are not restrictive. In the Specifications of standards for materials, plant and workmanship, existing Kenya Standards should be used as much as possible, otherwise recognized international standards may also be used.

5.0 The Employer should decide whether technical solutions to specified parts of the Works are to be permitted. Alternatives are appropriate in
cases where obvious (and potentially less costly) alternatives are possible to the technical solutions indicated in tender documents for certain elements of the Works, taking into consideration the comparative specialized advantage of potential tenderers.

The Employer should provide a description of the selected parts of the Works with appropriate reference to Drawings, Specifications, Bills of Quantities, and Design or Performance criteria, stating that the alternative solutions shall be at least structurally and functionally equivalent to the basic design parameters and Specifications.

Such alternative solutions shall be accompanied by all information necessary for a complete evaluation by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, proposed construction methodology, and other relevant details. Technical alternatives permitted in this manner shall be considered by the Employer each on its own merits and independently of whether the tenderer has priced the item as described in the Employer’s design included with the tender documents.
SECTION VI - DRAWINGS

1. A list of drawings

   i. Sectional Elevations
   ii. Ground floor plans
   iii. First floor plan
   iv. Site plan
   v. Roof plan
SECTION VII - BILL OF QUANTITIES

Notes for preparing Bills of Quantities

1.0 The objectives of the Bills of Quantities are;

(a) To provide sufficient information on the quantities of Works to be performed to enable tenders to be prepared efficiently and accurately; and

(b) When a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

2.0 The Bills of Quantities should be divided generally into the following sections:

(a) Preliminaries.

The preliminaries should indicate the inclusiveness of the unit prices, and should state the methods of measurement which have been adopted in the preparation of the Bill of Quantities and which are to be used for the measurement of any part of the Works.

The number of preliminary items to be priced by the tenderer should be limited to tangible items such as site office and other temporary works, otherwise items such as security for the Works which are primarily part of the Contractor’s obligations should be included in the Contractor’s rates.

(b) Work Items

(i) The items in the Bills of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the
Works, or considerations of cost. General items common to all parts of the Works may be grouped as a separate section in the Bill of Quantities.

(ii) Quantities should be computed net from the Drawings, unless directed otherwise in the Contract, and no allowance should be made for bulking, shrinkage or waste. Quantities should be rounded up or down where appropriate.

(iii) The following units of measurement and abbreviations are recommended for use.

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<thead>
<tr>
<th>Unit</th>
<th>Abbreviation</th>
<th>Unit</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>cubic meter</td>
<td>m³ or cu m</td>
<td>millimeter</td>
<td>mm</td>
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<tr>
<td>hectare</td>
<td>ha</td>
<td>month</td>
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<td>hour</td>
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<td>kilogram</td>
<td>kg</td>
<td>square meter</td>
<td>m² or sq m</td>
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<tr>
<td>lump sum</td>
<td>sum</td>
<td>square millimeter</td>
<td>mm² or sq mm</td>
</tr>
<tr>
<td>meter</td>
<td>m</td>
<td>week</td>
<td>wk</td>
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<tr>
<td>metric ton (1,000 kg)</td>
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</tbody>
</table>

(iv) The commencing surface should be identified in the description of each item for Work involving excavation, boring or drilling, for which the commencing surface is not also the original surface. The excavated surface should be identified in the description of each item for Work involving excavation for which the excavated surface is not also the final surface. The depths of Work should be measured from the commencing surface to the excavated surface, as defined.

(c) Daywork Schedule

A Daywork Schedule should be included if the probability of unforeseen work, outside the items included in the Bill of Quantities, is relatively high. To facilitate checking by the Employer of the realism of rates quoted by the tenderers, the Daywork Schedule should normally comprise:

(i) a list of the various classes of labour, and materials for which basic Day work rates or prices are to be inserted by the tenderer, together with a statement of the conditions under which the Contractor will be paid for Work executed on a Day work basis; and

(ii) a percentage to be entered by the tenderer against each basic Day work Subtotal amount
for labour, materials and plant representing the Contractor’s profit, overheads, supervision and other charges.

(d) Provisional Quantities and Sums

i. Provision for quantity contingencies in any particular item or class of Work with a high expectation of quantity overrun should be made by entering specific “Provisional Quantities” or “Provisional Items” in the Bill of Quantities, and not by increasing the quantities for that item or class of Work beyond those of the Work normally expected to be required. To the extent covered above, a general provision or physical contingencies (quantity overruns) should be made by including a “Provisional Sum” in the Summary of the Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a “Provisional Sum” in the Summary of the Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

ii. Provisional sums to cover specialized works normally carried out by Nominated Sub Contractors should be avoided and instead Bills of Quantities of the specialised Works should be included as a section of the main Bills of Quantities to be priced by the Main Contractor. The Main Contractor should be required to indicate the name (s) of the specialised firms he proposes to engage to carry out the specialized Works as his approved domestic sub-contractors. Only provisional sums to cover specialized Works by statutory authorities should be included in the Bills of Quantities.

(e) Summary

The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Daywork, for physical (quantity) contingencies, and for price contingencies (upward price adjustment) where applicable.
SECTION VIII – STANDARD FORM

(i)  Form of Invitation for Tenders
(ii) Form of Tender
(iii) Letter of Acceptance
(iv) Form of Agreement
(v)  Form of Tender Security
(vi) Performance Bank Guarantee
(vii) Bank Guarantee for Advance Payment
(viii) Qualification Information
(ix)  Tender Questionnaire
(x)  Confidential Business Questionnaire
(xi) Details of Sub-Contractors
FORM OF INVITATION FOR TENDERS

[DATE]

To: ____________________________ [NAME OF CONTRACTOR]

________________________ [ADDRESS]

________________________

Dear Sirs:

Reference: ____________________________ [CONTRACT NAME]

You have been prequalified to tender for the above project.

We hereby invite you and other prequalified tenderers to submit a tender for the execution and completion of the above Contract.

A complete set of tender documents may be purchased by you from ____________ [MAILING ADDRESS, CABLE/TELEX/FACSIMILE NUMBERS].

Upon payment of a non-refundable fee of Kshs ____________________________

All tenders must be accompanied by _________________ number of copies of the same and a security in the form and amount specified in the tendering documents, and must be delivered to ____________________________ [ADDRESS AND LOCATION]

at or before _________________ (TIME AND DATE). Tenders will be opened immediately thereafter, in the presence of tenderers’ representatives who choose to attend.

Please confirm receipt of this letter immediately in writing by cable/facsimile or telex.

Yours faithfully,

________________________________________ Authorised Signature

________________________________________ Name and Title
TO: __________________________ [Name of Employer] ____________ [Date]

______________________ [Name of Contract]

Dear Sir,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of Kshs.____________________________ [Amount in figures] Kenya Shillings________________________________________________________
   __________________________________________________________________________ [Amount in words]

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Project Manager’s notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Appendix to Conditions of Contract.

3. We agree to abide by this tender until _______________ [Insert date], and it shall remain binding upon us and may be accepted at any time before that date.

4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this ________________ day of _____ 20________________

Signature ________________ in the capacity of____________________

duly authorized to sign tenders for and on behalf of __________________________ [Name of Employer] of_________________________ [Address of Employer]

Witness; Name______________________________________

Address_____________________________________

Signature____________________________________

Date_______________________________________
LETTER OF ACCEPTANCE

[letterhead paper of the Employer]

_____________________[date]

To: _______________________
    [name of the Contractor]

_____________________
    [address of the Contractor]

Dear Sir,

This is to notify you that your Tender dated ___________________________ for the execution of ________________________________________________ [name of the Contract and identification number, as given in the Tender documents] for the Contract Price of Kshs. __________________________ [amount in figures] [Kenya Shillings __________________________] (amount in words) in accordance with the Instructions to Tenderers is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

Authorized Signature ……………………………………………………………

Name and Title of Signatory

…………………………………………………………………………

Attachment: Agreement
FORM OF AGREEMENT

THIS AGREEMENT, made the _________________ day of ________ 20 ______
between_____________________________________________ ___of[or whose
registered office is situated at]__________________________________________
(hereinafter called “the Employer”) of the one part AND
________________________________________________________of[or whose
registered office is situated at]__________________________________________
(hereinafter called “the Contractor”) of the other part.

WHEREAS THE Employer is desirous that the Contractor executes
________________________________________________________________________
(name and identification numb[er of Contract ]
(hereinafter called “the Works”) located at______________________________[Place/location of the
Works]and the Employer has accepted the tender submitted by the
Contractor for the execution and completion of such Works and the
remedying of any defects therein for the Contract Price of
Kshs___________________________[Amount in figures], Kenya
Shillings_____________________________________________
[Amount in words].

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same
   meanings as are respectively assigned to them in the Conditions of
   Contract hereinafter referred to.

2. The following documents shall be deemed to form and shall be read
   and construed as part of this Agreement i.e.

   (i) Letter of Acceptance

   (ii) Form of Tender

   (iii) Conditions of Contract Part I

   (iv) Conditions of Contract Part II and Appendix to Conditions of
   Contract

   (v) Specifications

   (vi) Drawings

   (vii) Priced Bills of Quantities

3. In consideration of the payments to be made by the Employer to
   the Contractor as hereinafter mentioned, the Contractor hereby
   covenants with the Employer to execute and complete the Works
   and remedy any defects therein in conformity in all respects with
   the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in
   consideration of the execution and completion of the Works and the
remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The common Seal of ______________________________

Was hereunto affixed in the presence of ______________________________

Signed Sealed, and Delivered by the said

Binding Signature of Employer ______________________________

Witness

Binding Signature of Witness ______________________________

Binding Signature of Contractor ______________________________

In the presence of (i) Name____________________________

Address____________________________

Signature____________________________
FORM OF TENDER SECURITY

WHEREAS .................................................. (hereinafter called “the Tenderer”) has submitted his tender dated ......................... for the construction of ................................................................. ........................................... (Name of Contract)

KNOW ALL PEOPLE by these presents that WE .......................... having our registered office at ....................(hereinafter called “the Bank”), are bound unto .............................(hereinafter called “the Employer”) in the sum of Kshs................................. for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors and assigns by these presents sealed with the Common Seal of the said Bank this .................. Day of ........20..........

THE CONDITIONS of this obligation are:

1. If after tender opening the tenderer withdraws his tender during the period of tender validity specified in the instructions to tenderers
   Or

2. If the tenderer, having been notified of the acceptance of his tender by the Employer during the period of tender validity:

   (a) fails or refuses to execute the form of Agreement in accordance with the Instructions to Tenderers, if required; or
   (b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Tenderers;

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the said date.

___________________________  __________________________
[Date]  [signature of the Bank]

___________________________  __________________________
[Witness]  [Seal]
PERFORMANCE BANK GUARANTEE

To: ____________________(Name of Employer) __________(Date)
_______________(Address of Employer)

Dear Sir,

WHEREAS ___________________(hereinafter called “the Contractor”) has undertaken, in pursuance of Contract No. _____________ dated ______ to execute _______________ (hereinafter called “the Works”);

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognised bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of Kshs. _________________ (amount of Guarantee in figures) Kenya Shillings______________________________ (amount of Guarantee in words), and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Kenya Shillings _________________ (amount of Guarantee in words) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change, addition or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any change, addition, or modification.

This guarantee shall be valid until the date of issue of the Certificate of Completion.

SIGNATURE AND SEAL OF THE GUARANTOR ____________________

Name of Bank ____________________________________________

Address ________________________________________________

Date ____________________________________________________
BANK GUARANTEE FOR ADVANCE PAYMENT

To: __________________________ [name of Employer] ___(Date)
________________________ [address of Employer]

Gentlemen,

Ref: __________________________ [name of Contract]

In accordance with the provisions of the Conditions of Contract of the above-mentioned Contract, We, __________________________ [name and Address of Contractor] (hereinafter called “the Contractor”) shall deposit with __________________________ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Contract in an amount of Kshs.____________ [amount of Guarantee in figures] Kenya Shillings________________________ [amount of Guarantee in words].

We, __________________________ [bank or financial institution], as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to __________________________ [name of Employer] on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount not exceeding Kshs____________ [amount of Guarantee in figures] Kenya Shillings________________________ [amount of Guarantee in words], such amount to be reduced periodically by the amounts recovered by you from the proceeds of the Contract.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between __________________________ [name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

No drawing may be made by you under this guarantee until we have received notice in writing from you that an advance payment of the amount listed above has been paid to the Contractor pursuant to the Contract.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until __________________________ [name of Employer] receives full payment of the same amount from the Contract.
Yours faithfully,

Signature and Seal __________________________________________________

Name of the Bank or financial institution ______________________________

Address  ______________________________________________________________

Date  _________________________________________________________________

Witness: Name: _____________________________________________________

Address:  ____________________________________________________________

Signature:  __________________________________________________________

Date:  ________________________________________________________________
QUALIFICATION INFORMATION

1. Individual Tenderers or Individual Members of Joint Ventures

1.1 Constitution or legal status of tenderer (attach copy or Incorporation Certificate);
Place of registration: ______________________________
Principal place of business ___________________________
Power of attorney of signatory of tender ____________________

1.2 Total annual volume of construction work performed in the last five years

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

1.3 Work performed as Main Contractor on works of a similar nature and volume over the last five years. Also list details of work under way or committed, including expected completion date.

<table>
<thead>
<tr>
<th>Project name</th>
<th>Name of client and contact person</th>
<th>Type of work performed and year of completion</th>
<th>Value of Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>___________</td>
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</tbody>
</table>

1.4 Major items of Contractor’s Equipment proposed for carrying out the Works. List all information requested below.

<table>
<thead>
<tr>
<th>Item of Equipment</th>
<th>Description, Make and age (years)</th>
<th>Condition (new, good, poor) and number available</th>
<th>Owned, leased (from whom?), or to be purchased (from whom?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>___________</td>
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<tr>
<td>(etc.)</td>
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</tr>
</tbody>
</table>
1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data.

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Years of experience (general)</th>
<th>Years of experience in proposed position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
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</tr>
</tbody>
</table>

1.6 Financial reports for the last five years: balance sheets, profit and loss statements, auditor’s reports, etc. List below and attach copies.

________________________________________________________________________
________________________________________________________________________

1.7 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List below and attach copies of supportive documents.

________________________________________________________________________
________________________________________________________________________

1.8 Name, address and telephone, telex and facsimile numbers of banks that may provide reference if contacted by the Employer.

________________________________________________________________________

1.9 Statement of compliance with the requirements of Clause 1.2 of the Instructions to Tenderers.

________________________________________________________________________
________________________________________________________________________

1.10 Proposed program (work method and schedule) for the whole of the Works.
2 Joint Ventures

2.4 The information listed in 1.1 – 1.10 above shall be provided for each partner of the joint venture.

2.5 The information required in 1.11 above shall be provided for the joint venture.

2.6 Attach the power of attorney of the signatory(ies) of the tender authorizing signature of the tender on behalf of the joint venture.

2.7 Attach the Agreement among all partners of the joint venture (and which is legally binding on all partners), which shows that:

a) all partners shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms;

b) one of the partners will be nominated as being in charge, authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture; and

c) The execution of the entire Contract, including payment, shall be done exclusively with the partner in charge.
**TENDER QUESTIONNAIRE**

Please fill in block letters.

1. Full names of tenderer

   …………………………………………………………………………………………………………………………….

2. Full address of tenderer to which tender correspondence is to be sent (unless an agent has been appointed below)

   …………………………………………………………………………………………………………………………….

3. Telephone number (s) of tenderer

   …………………………………………………………………………………………………………………………….

4. Telex address of tenderer

   …………………………………………………………………………………………………………………………….

5. Name of tenderer’s representative to be contacted on matters of the tender during the tender period

   …………………………………………………………………………………………………………………………….

6. Details of tenderer’s nominated agent (if any) to receive tender notices. This is essential if the tenderer does not have his registered address in Kenya (name, address, telephone, telex)

   …………………………………………………………………………………………………………………………….

   …………………………………………………………………………………………………………………………….

_______________________

Signature of Tenderer

Make copy and deliver to:______________________(Name of Employer)
CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2 (c) and 2 (d) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

Part 1 – General

Business Name .................................................................

Location of business premises; Country/Town............................

Plot No.................................................. Street/Road ....................

Postal Address........................................... Tel No..........................

Nature of Business ................................................................

Current Trade Licence No...................... Expiring date..................

Maximum value of business which you can handle at any time: K. pound..........................

Name of your bankers..........................................................

Branch..........................................................................

Part 2 (a) – Sole Proprietor

Your name in full.............................................. Age..................

Nationality............................................... Country of Origin............

*Citizenship details ................................................................

Part 2 (b) – Partnership

Give details of partners as follows:

<table>
<thead>
<tr>
<th>Name in full</th>
<th>Nationality</th>
<th>Citizenship Details</th>
<th>Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1...................</td>
<td>..................</td>
<td>..........................</td>
<td></td>
</tr>
<tr>
<td>2...................</td>
<td>..................</td>
<td>..........................</td>
<td></td>
</tr>
<tr>
<td>3...................</td>
<td>..................</td>
<td>..........................</td>
<td></td>
</tr>
</tbody>
</table>

Part 2(c) – Registered Company:

Private or public.............................................................

State the nominal and issued capital of the Company-
Nominal Kshs…………………………………………………………………
Issued Kshs……………………………………………………………………

Give details of all directors as follows:

1. ..............................................................................................................
2. ..............................................................................................................
3. ..............................................................................................................
4. ..............................................................................................................

*Part 2(d) – Interest in the Firm:
Is there any person / persons in ............ ...........(Name of Employer) who has interest in this firm? Yes/No.......................(Delete as necessary)
I certify that the information given above is correct.

.....................................................................................
(Title) (Signature) (Date)

• Attach proof of citizenship
STATEMENT OF FOREIGN CURRENCY REQUIREMENTS

(See Clause 23] of the Conditions of Contract)

In the event of our Tender for the execution of____________________
__________________________ (name of Contract) being accepted, we
would require in accordance with Clause 21 of the Conditions of
Contract, which is attached hereto, the following percentage:

(Figures)………………………… (Words)……………………………………
of the Contract Sum, (Less Fluctuations) to be paid in foreign
currency.

Currency in which foreign exchange element is required:

..............................................................................................................................

Date: The .......... Day of ............... 20.............

Enter 0% (zero percent) if no payment will be made in foreign
currency.

Maximum foreign currency requirement shall be
_______________(percent) of the Contract Sum, less Fluctuations.

_____________________
(Signature of Tenderer)
DETAILS OF SUB-CONTRACTORS

If the Tenderer wishes to sublet any portions of the Works under any heading, he must give below details of the sub-contractors he intends to employ for each portion.

Failure to comply with this requirement may invalidate the tender.

(1) Portion of Works to be sublet: ..............................................

[i] Full name of Sub-contractor and address of head office: ..............................................

.................................................................................................................................

(ii) Sub-contractor’s experience of similar works carried out in the last 3 years with Contract value: ..............................................

.................................................................................................................................

.................................................................................................................................

(2) Portion of Works to be sublet: ..............................................

(i) Full name of sub-contractor and address of head office: ..............................................

.................................................................................................................................

.................................................................................................................................

(ii) Sub-contractor’s experience of similar works carried out in the last 3 years with contract value: ..............................................

.................................................................................................................................

.................................................................................................................................

[Signature of Tenderer] ................................................................. Date

.................................................................
LETTER OF NOTIFICATION OF AWARD

Address of Procuring Entity

To:____________________
   ____________________
   ____________________
   ____________________

RE: Tender No.______________

Tender Name______________

This is to notify that the contract/s stated below under the above mentioned tender have been awarded to you.

________________________________________________________________________

1. Please acknowledge receipt of this letter of notification signifying your acceptance.

2. The contract/contracts shall be signed by the parties within 30 days of the date of this letter but not earlier than 14 days from the date of the letter.

3. You may contact the officer(s) whose particulars appear below on the subject matter of this letter of notification of award.

(FULL PARTICULARS)______________________________________________

________________________________________________________________________

SIGNED FOR ACCOUNTING OFFICER
FORM RB 1

REPUBLIC OF KENYA
PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD
APPLICATION NO.............OF............20..........

BETWEEN
..........................................................APPLICANT

AND

..................................................RESPONDENT (Procuring Entity)

Request for review of the decision of the............. (Name of the Procuring Entity) of .............dated the...day of ............20...........in the matter of Tender No............of .............20...

REQUEST FOR REVIEW
I/We............................................., the above named Applicant(s), of address: Physical address.............Fax No.....Tel. No........Email ................., hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds, namely:-

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

By this memorandum, the Applicant requests the Board for an order/orders that:

1.
2.
3.
4.
5.
6.
7.
SIGNED .................(Applicant)
Dated on..............day of ............../...20...

FOR OFFICIAL USE ONLY
Lodged with the Secretary Public Procurement Administrative Review Board on
............. day of .............20...........

SIGNED
Board Secretary
PREAMBLES AND PRICING NOTES

A. GENERALLY

All work to be carried out in accordance with the Ministry of Roads, Public Works and Housing General Specifications for Building Works issued in 1976 or as qualified or amended.

B. MANUFACTURERS’ NAMES

Where manufacturers’ names and catalogue references are given for guidance to quality and standard only, alternative manufacturer of equal quality will be accepted at the discretion of the Project Manager.

C. WALLING

All precast concrete blocks shall be manufactured by the methods and to the sizes specified in the Ministry of Roads, Public Works and Housing “Specification for Metric Sized Concrete Blocks for Building (1972)”

Walling of 100 mm thickness or under shall be reinforced with hoop iron every alternate course.

Prices for walling must allow for all costs in preparing, packing and sending sample blocks for testing as and when required by the Project Manager.

D. CARPENTRY

The grading rules for cypress shall be the same as for podocarpus and all timber used for structural work shall be select (second grade).

All structural timber must conform to the minimum requirements for moisture content and preservative treatment and timber prices must allow for preparing, packing and sending samples for testing when required.

Prices must also include for all nails and fasteners.
A. JOINERY

Cypress for joinery shall be second grade in accordance with the latest grading rules of the Kenya Government.

Where Mahogany is specified, this refers to prime grade only. The Contractor may with the approval of the Project Manager, use either Msharagi or Mvuli in lieu of Mahogany but such approval will be given only in the case of shortages of the hardwoods specified.

Plugging shall be carried out by drilling walling or concrete with masonry drill and filling with propriety plugs of the correct sizes. Cutting with hammer and chisel will not be allowed.

Prices for joinery must include for pencil rounded arises, protection against damage, nails, screws, framing and bedding in cement mortar as required.

Sizes given for joinery items are nominal sizes and exact dimensions of doors, etc, must be ascertained on site.

B. IRONMONGERY

Ironmongery shall be as specified in the Bills of Quantities or equal and approved.

Prices must include for removing and re-fixing during and after painting, labeling all keys, and for fixing to hardwood, softwood, concrete or blockwork.

Catalogue references given for ironmongery are for purposes of indicating quality and size of item(s). Should the Contractor wish to substitute the specified item(s) with others of equal quality, he must inform the Project Manager and obtain approval in writing.

C. STRUCTURAL STEELWORK

All structural steelwork shall comply with the Ministry of Public Works “Structural Steelwork Specification (1973) and shall be executed by an approved Sub-contractor.
A. PLASTERWORK AND OTHER FINISHES

All finishings shall be as described in the general specifications and in these Bills of Quantities.

Prices for pavings are to include for brushing concrete clean, wetting and coating with cement and sand grout 1:1.

Rates for glazed wall tiling are to include for a 12 mm cement and sand (1:4) backing screed unless otherwise specified in these Bills of Quantities.

B. GLAZING

Where polished plate glass is specified, this refers to general glazing quality.

Prices for glazing shall include for priming of rebates before placing putty.

The Contractor will be responsible for replacing any broken or scratched glass and handing over in perfect condition.

C. PAINTING

All paint shall be 1st quality “Crown” or other equal and approved

Painting shall be applied in accordance with the manufacturers’ instructions.

Prices for painting are to include for scaffolding, preparatory work, priming coats, protection of other works and for cleaning up on completion. Prices for painting on galvanized metal are to include for mordant solution as necessary.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PARTICULAR PRELIMINARIES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>EMPLOYER</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>The &quot;Employer&quot; is <strong>MINISTRY OF HEALTH</strong></td>
</tr>
<tr>
<td></td>
<td>The term &quot;Employer&quot; and &quot;Government&quot; wherever used in the contract document shall be synonymous</td>
</tr>
<tr>
<td><strong>PROJECT MANAGER</strong></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>The term &quot;P.M.&quot; wherever used in these Bills of Quantities shall be deemed to imply the Project Manager as defined in Condition 1 of the Conditions of Contract or such person or persons as may be duly authorised to represent him on behalf of the Government.</td>
</tr>
<tr>
<td><strong>ARCHITECT</strong></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>The term &quot;Architect&quot; shall be deemed to mean &quot;The Project Manager.&quot; as defined above whose address unless otherwise notified is State Department of Public Works, Ministry of Transport, Infrastructure, Housing and Urban Development, P.O. Box 30743, NAIROBI.</td>
</tr>
<tr>
<td><strong>QUANTITY SURVEYOR</strong></td>
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<tr>
<td>D</td>
<td>The term &quot;Quantity Surveyor&quot; shall be deemed to mean &quot;The Project Manager.&quot; as defined above whose address unless otherwise notified is State Department of Public Works, Ministry of Transport, Infrastructure, Housing and Urban Development, P.O. Box 30743, NAIROBI.</td>
</tr>
<tr>
<td><strong>ELECTRICAL ENGINEER</strong></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>The term &quot;Electrical Engineer&quot; shall be deemed to mean &quot;The Project Manager.&quot; as defined above whose address unless otherwise notified is State Department of Public Works, Ministry of Transport, Infrastructure, Housing and Urban Development, P.O. Box 30743, NAIROBI.</td>
</tr>
</tbody>
</table>

Carried to collection
STRUCTURAL ENGINEER

A  The term "Structural Engineer" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is State Department of Public Works, Ministry of Transport, Infrastructure, Housing and Urban Development, P.O. Box 30743, NAIROBI

MECHANICAL ENGINEER

B  The term "Mechanical Engineer" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is State Department of Public Works, Ministry of Transport, Infrastructure, Housing and Urban Development, P.O. Box 30743, NAIROBI
PRICING ITEMS OF PRELIMINARIES

A Prices **SHALL BE INSERTED** against items of “preliminaries” in the tenderer’s priced Bills of Quantities. 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. The contractor is advised to read and understand all preliminary items.

DESCRIPTION OF THE WORKS

B The works comprise of Construction of 2NO. Twin 2Bedroomed houses, associated external, Electrical and mechanical works.

MEASUREMENTS

C 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.

LOCATION OF SITE

D The site is located at **MPEKETONI HEALTH CENTRE IN LAMU COUNTY. The bidder is supposed to familiarize with the nature and position of the site. No claims arising from the Contractor’s failure to do so will be entertained.**

Carried to Collection
CLEARING AWAY

A 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.

CLAIMS

B 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 claim or intent to claim notice to the PROJECT MANAGER within the contract period. No claims shall be entertained upon the expiry of the said contract period.

ADVANCE PAYMENTS

C No Advance payment shall be given to the contractor.

PREVENTION OF ACCIDENT, DAMAGE OR LOSS

D 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 instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of normal activities being carried out by the Client. The Contractor shall allow in his rates any expense he deems necessary by taking such care within the site.

BID SECURITY

E The contractor shall provide a bid security duly signed, sealed and stamped from an approved Institution in an approved format of required amount.
WORKING CONDITIONS

A  The Contractor shall allow in this tender for any interference that he may encounter in the course of execution 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.

SIGNBOARD

B  Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away the signboard as designed, specified and approved by the Project Manager.

LABOUR CAMPS

C  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.

MATERIALS FROM DEMOLITIONS

D  All re-usable materials arising from demolitions shall become the property of the government and will be handed over to the client. The Contractor shall allow for carting away all non-reusable materials arising from demolitions.

PRICING RATES

E  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.
URGENCY OF THE WORKS

A 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 this tender for any costs he deems that he/she may incur by having to complete the works within the stipulated contract period.

PAYMENT FOR MATERIALS ON SITE

B 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.

EXISTING SERVICES

C 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 which may be required by the authorities concerned for the support, maintenance and protection of such services.

EXISTING BUILDINGS AND SERVICES

D Special precautions shall be required throughout the contract period to avoid damage to the existing building, cables, drains and other services and the whole site in general. The Contractor shall allow for making good any damages arising from his actions during execution of this contract at his own expense.
TENDER DOCUMENTS

A Tender documents are as listed in Clause 2.1 of the Instruction to Tenderer’s Page 7

DELIVERY OF TENDER

B 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.

VALUE ADDED TAX

C 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. Notice No. 35 & 36 Dated 11th September 2003 operational from 1st October 2003, withholding VAT will be levied against the contract sum by the Employer. The contractor should therefore include this tax in the Grand Summary page as indicated herein. The tenderer is advised that in accordance with the Finance Act 2014 withholding VAT tax was reintroduced at a rate of 6% with effect from 19th September, 2014.
**PROJECT MANAGEMENT AND CONTRACT ADMINISTRATION EXPENSES**

<table>
<thead>
<tr>
<th></th>
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<th>SUM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Allow a sum of Kenya Shillings Two Hundred and Fifty Thousand (Ksh.250,000.00) only for project management and contract administration costs.</td>
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</tr>
<tr>
<td>B</td>
<td>Allow a percentage sum for the contractors administrative costs and profits for the above</td>
<td>.....</td>
<td>%</td>
</tr>
</tbody>
</table>

Carried to Collection
**PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT**

The following are the insertions to be made in the appendix to the Contract Agreement

<table>
<thead>
<tr>
<th>Part</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period of Final Measurement</td>
<td>3 Months from Practical Completion</td>
</tr>
<tr>
<td>Defects Liability Period</td>
<td>6 Months from Practical Completion</td>
</tr>
<tr>
<td>Date for Possession</td>
<td>To be agreed with the Project Manager</td>
</tr>
<tr>
<td>Date for Completion</td>
<td>6 months from date of Possession</td>
</tr>
<tr>
<td>Liquidated and Ascertained Damages</td>
<td>at a rate of Kshs 10,000.00 Per week or part thereof</td>
</tr>
<tr>
<td>Period of Iterim Certificates</td>
<td>Monthly</td>
</tr>
<tr>
<td>Period of Honouring Certificates</td>
<td>30 Days</td>
</tr>
<tr>
<td>Percentage of Certified Value Retained</td>
<td>10%</td>
</tr>
<tr>
<td>Limit of Retention Fund</td>
<td>10%</td>
</tr>
<tr>
<td>COLLECTION</td>
<td></td>
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<td>Brought forward from page PP/1</td>
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<tr>
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| PARTICULAR PRELIMINARIES CARRIED TO GRAND SUMMARY |   |   |   |   |   |   |   |   |   |
GENERAL PRELIMINARIES

PRICING OF ITEMS OF PRELIMINARIES AND PREAMBLES

A. Prices will be inserted against items of Preliminaries in the Contractor’s priced Bills of Quantities and Specification.

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.

ABBREVIATIONS

B. Throughout these Bills, units of measurement and terms are abbreviated and shall be interpreted as follows:-

- C.M. Shall mean cubic metre
- S.M. Shall mean square metre
- L.M. Shall mean linear metre
- MM Shall mean Millimetre
- Kg. Shall mean Kilogramme
- No. Shall mean Number
- Prs. Shall mean Pairs
- B.S. Shall mean the British Standard Specification Published by the British Standards Institution, 2 Park Street, London W.I., England.

Ditto Shall mean the whole of the preceding description except as qualified in the description in which it occurs.

- m.s. Shall mean measured separately.
- a.b.d Shall mean as before described.

Carried to collection
EXCEPTION TO THE STANDARD METHOD OF MEASUREMENT

A. Attendance; Clause B19(a) of the Standard Method of Measurement is deleted and the following clause is substituted:-

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.

Fix Only:-

"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.

FORM OF CONTRACT

D. The Form of Contract shall be as stipulated in the Republic of Kenya's Standard Tender Document for Procurement of Building Works (2006 Edition) included herein. The Conditions of Contract are also included herein. Conditions of Contract These are numbered from 1 to 37 as set out in pages 16 to 36 of these tender documents. 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.

PERFORMANCE BOND.

E. The Contractor shall find and submit on the Form of Tender an approved Bank and who will be willing to be bound the Government in and amount equal to five per cent (5%) of the Contract amount for the due performances of the Contract up to the date of completion as certified by the PROJECT MANAGER 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.

Carried to collection
PLANT, TOOLS AND VEHICLES

A. 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.

TRANSPORT.

B. 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.

MATERIALS AND WORKMANSHIP.

C. 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.

SIGN FOR MATERIALS SUPPLIED.

D. 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.

STORAGE OF MATERIALS.

E. 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.
### SAMPLES

**A.** The Contractor shall furnish at his own cost any samples of materials or workmanship including concrete test cubes 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 State Department of Public Works, Ministry of Land, Housing and Urban Development.

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.

### GOVERNMENT ACTS REGARDING WORKPEOPLE ETC.

**B.** 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 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.

### SECURITY OF WORKS ETC.

**C.** 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.
PUBLIC AND PRIVATE ROADS.

A. 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.

EXISTING PROPERTY.

B. 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.

VISIT SITE AND EXAMINE DRAWINGS.

C. 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.

ACCESS TO SITE AND TEMPORARY ROADS.

D. 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.

AREA TO BE OCCUPIED BY THE CONTRACTOR

E. 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.

Carried to collection
OFFICE ETC. FOR THE PROJECT MANAGER

A. The Contractor shall provide, erect and maintain where directed on site and afterwards dismantle the site office of the type noted in the Particular Preliminaries, complete with Furniture. 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 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.

WATER AND ELECTRICITY SUPPLY FOR THE WORKS

B. The Contractor shall provide at his own risk and cost all necessary water, electric light 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.

SANITATION OF THE WORKS

C. 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.

SUPERVISION AND WORKING HOURS

D. 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.

Carried to collection
PROVISIONAL SUMS.

A 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.

PRIME COST (OR P.C.) SUMS.

B 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.

PROGRESS CHART.

C 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.
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.

**ADJUSTMENT OF PROVISIONAL SUMS.**

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.

**NOMINATED SUB-CONTRACTORS**

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".

*Carried to collection*
A Notwithstanding the foregoing conditions, the Government 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 in the priced Bills of Quantities will be adjusted as described for P.C. Sums is allowed.

ATTENDANCE UPON OTHER TRADESMEN, ETC.

B 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.

INSURANCE

C 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.
A 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.

ALTERATIONS TO BILLS, PRICING, ETC.

B 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.

BLASTING OPERATIONS

C 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.
MATERIALS ARISING FROM EXCAVATIONS

A. Materials of any kind obtained from the excavations shall be the property of the Government. 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.

PROTECTION OF THE WORKS.

B. Provide protection of the whole of the works contained in the Bills of Quantities, 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 Government.

REMOVAL OF RUBBISH ETC.

C. Removal of rubbish and debris from the Buildings and site as it accumulates and at the completion of the works and remove all plant, scaffolding and unused materials at completion.

WORKS TO BE DELIVERED UP CLEAN

D. 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.
GENERAL SPECIFICATION.

A. 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.

TRAINING LEVY

B. The Contractor's attention is drawn to National Industrial Training Authority Act Cap 237, which requires payment by the Contractor of a Training Levy at the rate of 50.00 per employee per month.

MATERIALS ON SITE

C. 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.

HOARDING

D. The contractor shall enclose the site with hoarding with openings and gates as required. The hoarding shall be 2500mm high constructed with timbers to approval and covered with new galvanised iron corrugated sheets painted to approval allow 200 metres long (Provisional)

CONTRACTOR'S SUPERINTENDENCE/SITE AGENT

E. 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.

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2NO.PROPOSED TWIN TWO BEDROOM UNITS.

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<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
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<tr>
<td></td>
<td>Twin Two Bedroom Unit</td>
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<td></td>
<td>ELEMENT NO.1</td>
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<td></td>
<td>SUBSTRUCTURES (ALL PROVISIONAL)</td>
<td></td>
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<tr>
<td>Site clearance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Clear site of works of shrubs, bush and small trees, grub up roots and burn debris</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Destroy termite nests within site of works, take out and destroy queens, impregnate holes and tunnels with insecticide and fill voids with approved material</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
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<tr>
<td>Excavate in soil including maintaining and supporting sides and keeping free from water, mud and fallen objects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Excavate in bulk, commencing from ground level and not exceeding 1.5m deep.</td>
<td>230</td>
<td>CM</td>
<td></td>
<td></td>
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<tr>
<td>D</td>
<td>Ditto but for strip foundation</td>
<td>17</td>
<td>CM</td>
<td></td>
<td></td>
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<tr>
<td>E</td>
<td>Ditto but for column bases</td>
<td>2</td>
<td>CM</td>
<td></td>
<td></td>
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<tr>
<td>G</td>
<td>Extra over for excavating in rock class A.</td>
<td>10</td>
<td>CM</td>
<td></td>
<td></td>
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<tr>
<td>Disposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>H</td>
<td>Backfilling around foundations</td>
<td>17</td>
<td>CM</td>
<td></td>
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<tr>
<td>I</td>
<td>Load and cart away surplus spoil to a city council dump site</td>
<td>194</td>
<td>CM</td>
<td></td>
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</tr>
<tr>
<td>J</td>
<td>Allow for keeping excavations free from all water by pumping or otherwise.</td>
<td></td>
<td>ITEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Ditto; for plunking and strutting to sides of excavations.</td>
<td></td>
<td>ITEM</td>
<td></td>
<td></td>
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<tr>
<td>Disposal</td>
<td></td>
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Total Carried to Collection Page 04
### 2NO. PROPOSED TWIN TWO BEDROOM UNITS.

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<th>RATE</th>
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<tr>
<td>A</td>
<td>Approved hardcore filling to make up levels</td>
<td>150</td>
<td>CM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Compact surface of existing hardcore and blind to receive concrete</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Quarry dust blinding</strong></td>
<td></td>
<td></td>
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<tr>
<td>C</td>
<td>50mm thick, levelled and compacted.</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Damp proof membrane</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1000 gauge polythene laid under surface beds</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Anti-termite treatment</strong></td>
<td></td>
<td></td>
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<tr>
<td>E</td>
<td>Chemical anti-termite treatment executed by an approved specialist under a ten year guarantee to surfaces of hardcore</td>
<td>153</td>
<td>SM</td>
<td></td>
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<tr>
<td></td>
<td><strong>Plain concrete 1:4:8</strong></td>
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<tr>
<td>F</td>
<td>Blinding under foundations and bases, thickness 50mm.</td>
<td>74</td>
<td>SM</td>
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<tr>
<td></td>
<td><strong>Vibrated reinforced concrete class 20</strong></td>
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<tr>
<td>G</td>
<td>Foundation</td>
<td>12</td>
<td>CM</td>
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<tr>
<td>H</td>
<td>Column bases</td>
<td>2</td>
<td>CM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Beds, thickness 150mm</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Columns</td>
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<td>CM</td>
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<tr>
<td>M</td>
<td>Ground beams</td>
<td>8</td>
<td>CM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Carried to Collection Page 04
## 2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reinforcement (all provisional)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>High yield deformed steel bar reinforcement to BS4461</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assorted diameters</td>
<td>3500</td>
<td>Kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Steel mesh fabric reinforcement to BS 4483</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Layer of mesh fabric reinforcement laid in slab or bed with 200mm side and end laps (measured net - no allowance made for laps) Ref: A142 weighing 2.22kg per square metre</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Formwork</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Sides of foundations, bases, etc</td>
<td>58</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Sides of columns</td>
<td>10</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Sides and soffittes of ground beams</td>
<td>116</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Edges of beds, etc 75-150mm high</td>
<td>58</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Load bearing natural stone rough dressed &quot;Njiru&quot; walling in cement and sand mortar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Walling thickness 200mm</td>
<td>203</td>
<td>SM</td>
<td></td>
<td></td>
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</tbody>
</table>

**Total Carried to Collection Page 04**
2NO. PROPOSED TWIN TWO BEDROOM UNITS.

<table>
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<tr>
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<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bituminous felt damp proof courses laid on and including levelling screed of cement mortar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>In walling, width 200mm</td>
<td>84</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>In walling, width 150mm</td>
<td>21</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cement and sand (1:4) rendering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Rendering to concrete surfaces finished with a steel float, thickness 20mm</td>
<td>17</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prepare and apply three coats bituminous paint</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Rendered surfaces externally</td>
<td>16</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Carried to Collection Below</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Collection

Brought forward from page 01

Brought forward from page 02

Brought forward from page 03

Brought down from above

Total of Element 01 Carried to Summary
2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
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<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ELEMENT NO. 2**

**R.C. SUPERSTRUCTURE**

Vibrated reinforced concrete class 20

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Beams</td>
<td>6</td>
<td>CM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Columns</td>
<td>1</td>
<td>CM</td>
<td></td>
<td></td>
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</tbody>
</table>

Reinforcement

High yield deformed steel bar reinforcement to BS 4461

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Assorted diameter</td>
<td>840</td>
<td>Kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Formwork

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Sides of columns</td>
<td>10</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Sides and soffits of beams</td>
<td>84</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total of Element 02 Carried to Summary

COPY RIGHT
CHEIF QUANTITY SUVEYOR MOW' SH/5
2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
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<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEMENT NO. 3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>SUPERSTRUCTURE WALLING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXTERNAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approved load bearing fine chiselled, zero joint, dressed and rubbed stone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>walling in cement and sand mortar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Walling, thickness 200mm including gables</td>
<td>194</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTERNAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approved load bearing machine dressed stone walling in cement and sand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mortar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Walling, thickness 200mm</td>
<td>97</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Walling, thickness 150mm</td>
<td>63</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total of Element 03 Carried to Summary
<table>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Rafters, size 150x50mm</td>
<td>69</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Purlins, size 100x50mm</td>
<td>132</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Valley rafters, size 150x50mm</td>
<td>40</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Hip rafters, size 150x50mm</td>
<td>13</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Ridge boards, size 225x25</td>
<td>34</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Jack rafters, size 150x50mm</td>
<td>43</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>King post, size 150x50mm</td>
<td>13</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Tie beam, size 150x50mm</td>
<td>90</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Fascia board, size 225x25mm</td>
<td>58</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Wall plates bolted(bolts and holes included) size, 100x50mm</td>
<td>80</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Struts and ties, size 100x50mm</td>
<td>64</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ROOF COVERING**

Galvanised Corrugated Iron Sheets.

L Pre-painted GCI roofing sheets on trussed Rafters at 1200mm/c laid to fall at 25Degrees with end and side laps as recommended by manufacturer. 218 SM
## 2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RAINWATER DISPOSAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 gauge light pressed galvanised mild steel purpose made ready primed box gutters jointed with mastic and fixed to fascia with brackets to BS 1091</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Size 200x150mm</td>
<td>58</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Extra for outlet in box gutter, diameter 100mm</td>
<td>4</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Extra for bend</td>
<td>4</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Extra for stopped end</td>
<td>4</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 gauge light pressed galvanised mild steel purpose made ready primed down pipes jointed with mastic and fixed to walls with brackets to BS1091</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Diameter 100mm</td>
<td>12</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Extra for swanneck offset in pipe diameter</td>
<td>4</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Extra for shoe in pipe diameter</td>
<td>4</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 gauge galvanised mild steel sheet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>As flashing in hips, girth 600mm</td>
<td>28</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Carried to Collection Page 9
2NO. PROPOSED TWIN TWO BEDROOM UNITS.

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<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Allow for testing the whole of the rainwater disposal installation to the satisfaction of the Architect and for replacing any defective work free of charge.</td>
<td>ITEM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Carried to Collection Below

Collection

Brought forward from page 7

Brought forward from page 8

Brought down from above

Total of Element 04 Carried to Summary
2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
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<th>ITEM</th>
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<th>UNIT</th>
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<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>ELEMENT NO. 5:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>WINDOWS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Precast concrete trimming finished fair on all exposed faces</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Cills, size 300x75mm</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Pelmet boxes in Wrought Cypress.</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Window boards with one labour plugged, size 125x25mm.</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Pelmet fascia, size 150x25mm</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Pelmet top, size 125x25mm</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Boxed end of pelmet, size 150x125x25mm</td>
<td>24</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Bearer plugged, size 50x50mm</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Quadrant plugged, diameter 15mm</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Curtain tracks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Brass ’H’ section curtain track with gliders (one per 100mm of track), end stops and brackets screwed at 600mm centers</td>
<td>18</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Carried to Collection Page 11
### 2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
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<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Window overall size, 1500x1500mm</td>
<td>6</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Window overall size, 1200x1500mm</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Window overall size, 800x600mm</td>
<td>4</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clear sheet glass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>4mm glass and glazing to metal with putty in panes not exceeding 0.1 square meter</td>
<td>17</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Obscure sheet glass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>3mm glass and glazing to metal with putty in panes not exceeding 0.1 square meter</td>
<td>2</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Carried to Collection Below**

**Collection**

- Brought forward from page 10
- Brought down from above

**Total of Element 05 Carried to Summary**
2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
</table>

**ELEMENT NO. 6:**

**DOORS**

**INTERNAL**

Doors, frames and finishing in wrought cypress.

A 45 mm solid core flush door faced both sides with 3mm plywood veneered and hardwood lipped all round, size 900 x 2100mm. Including fanlight 900x600mm.

B Frame to detail size, 150x50mm

C Ditto, mullion with 2no. Labour.

D Architrave to detail size, 45x25mm

E Quadrant bead, diameter 15mm

F Beading to detail size, 10x10mm

**METAL DOORS (EXTERNAL DOORS)**

Standard section purpose made heavy duty sheet metal door in 200 x 250mm high panels complete with all requisite frame, sub-frames, mullions, transomes, fixing lugs cast on, 1 1/2 pairs heavy duty pin type hinges associated door lock and handles, 2 x 200mm wide x 16 gauge bottom plate, including one coat red oxide primer before.

G Door overall size 1200x 2400mm high in two equal leafs size 600x2400 mm high.

H Ditto but size 900x 2400mm high

Total Carried to Collection Page 13
## 2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Clear sheet glass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3mm glass and glazing to wood with beads (measured separately) in panes exceeding 0.1 but not exceeding 0.5 square meters</td>
<td>5</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Sundries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10mm galvanised mild steel dowel 100mm long let into foot of frame and grouted into mortice in floor</td>
<td>6</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>25x1.6mm galvanised mild steel cramp 250mm girth once bent twice drilled and screwed to back of frame and with fish tailed end built into joints of walling.</td>
<td>96</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ironmongery - supply and fix with matching screws</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>100mm pairs brass butt hinges</td>
<td>12</td>
<td>Prs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Three lever mortice lock with polished brass lever furniture</td>
<td>8</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Rubber door stop</td>
<td>14</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Carried to Collection Below**

**Collection**

Brought forward from page 12

Brought down from above

**Total of Element 06 Carried to Summary**
### 2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ELEMENT NO. 7:**

**EXTERNAL FINISHES**

Keying:-

A  Pointing/jointing horizontal joints.  
   Cement and sand render 1:4;

B  20mm thick, wood floated.

Total of Element 07 Carried to Summary
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>ELEMENT NO. 8:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>INTERNAL FINISHES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>FLOOR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ceramic tiles (non-slip)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Generally)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Cement sand screed paving steel trowelled smooth</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>250x250x8mm as manufactured by SAJ CERAMICS LTD. or other approved coloured ceramic non-slip floor tiles bedded and jointed in cement and sand 1:1 and pointed in coloured cement grouting</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Ditto; but 100mm high skirting</td>
<td>151</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>WALL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lime plaster</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Plaster to walls</td>
<td>477</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Wall tiling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>250x250x8mm as manufactured by SAJ CERAMICS LTD. or other approved glazed white wall tiles bedded in cement and sand 1:1 and pointed in coloured cement grouting</td>
<td>63</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total carried to collection page 16
2NO.PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CEILING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sawn cypress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Brandering, size 50x50mm</td>
<td>560</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chipboard ceiling board.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>12mm thick.</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Extra for forming trap door with cypress framing, size 600x600mm</td>
<td>2</td>
<td>NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wrought cypress.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Moulded cornice plugged size, 100x50mm</td>
<td>151</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carried down to collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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Collection

Brought forward from page 15

Brought down from above

Total of Element 08 Carried to Summary
2NO. PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<tr>
<td></td>
<td>ELEMENT NO. 9:</td>
</tr>
<tr>
<td></td>
<td>JOINERY FITTINGS</td>
</tr>
<tr>
<td></td>
<td>Prime Costs Sums</td>
</tr>
<tr>
<td></td>
<td>Kitchen and Bedroom Wardrobe</td>
</tr>
<tr>
<td></td>
<td>A Provide for Kitchen and Bedroom wardrobe a Provisional Sum of shillings Two Hundred Thousand</td>
</tr>
</tbody>
</table>

Total of Element 09 Carried to Summary
# 2NO. PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
</table>

## ELEMENT NO. 10

### PAINTING & DECORATING

#### ROOF

**A** Prepare prime and apply one undercoat and two finishing coats of 1st quality supergloss paint to:-

**B** Timber surfaces of fascia and verge boards exceeding 200mm but not exceeding 300mm girth

- Touch up primer and apply one undercoat and two finishing coats of 1st quality supergloss paint to:-

**C** General surfaces of 100mm dia. downpipe

**D** General surfaces of box gutter

#### WINDOWS

Prepare and apply two undercoats stainer and two finishing coats of varnish to:-

**E** Timber surfaces of pelmet boxes not exceeding 100mm girth

**F** Ditto exceeding 100 but not exceeding 200mm girth.

- Touch up primer and apply one undercoat and two finishing coats of 1st quality supergloss paint to:-

**G** General surfaces of windows and burglar bars (b.s.m).

Total Carried to Collection Page 18
## 2NO. PROPOSED TWIN TWO BEDROOM UNITS.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
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</thead>
<tbody>
<tr>
<td><strong>DOORS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prepare and apply two undercoats and two finishing coats of gloss oil paint to:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>General surfaces of external doors</td>
<td>20</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>General surfaces of internal doors</td>
<td>30</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>General surfaces of timber.</td>
<td>6</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Surfaces not exceeding 100mm girth</td>
<td>41</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INTERNAL FINISHES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prepare and apply one coat primer and two finishing coats two finishing coats of gloss paint to:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>General plastered surfaces of walls</td>
<td>477</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>General surfaces of ceiling</td>
<td>153</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Ditto, girth not exceeding 100mm.</td>
<td>151</td>
<td>LM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Collection

- Brought forward from page 17
- Brought forward from above

**Total of Element 10 Carried to Summary**
# Proposed Twin Two Bedroom Units

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Substructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Reinforced Concrete Superstructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Superstructure Walling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Roof Construction, Covering &amp; Rainwater Disposal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Windows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Doors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>External Finishes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Internal Finishes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Joinery and Fittings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Painting and Decorating</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary**

SUB-TOTAL FOR TWIN TWO BEDROOM UNIT.

TOTAL FOR 2NO. TWIN TWO BEDROOM UNIT.

COPY RIGHT
CHEIF QUANTITY SURVEYOR MOW

SH/20
ELECTRICAL WORKS

SECTION D

GENERAL SPECIFICATION

OF

MATERIALS AND WORKS
2.1 General
2.2 Standard of Materials
2.3 Workmanship
2.4 Procurement of Materials
2.5 Shop Drawings
2.6 Record Drawings
2.7 Regulations and Standards
2.8 Setting out Works
2.9 Position of Electrical Plant and Apparatus
2.10 M.C.B Distribution Panels and Consumer Units
2.11 Fused Switchgear and Isolators
2.12 Conduits and Conduit Runs
2.13 Conduit Boxes and Accessories
2.14 Labels
2.15 Earthing
2.16 Cables and Flexible Cords
2.17 Armoured PVC Insulated and Sheathed Cables
2.18 Cable Supports; Markers and Tiles
2.19 PVC Insulated Cables
2.20 Heat Resisting Cables
2.21 Flexible Cords
2.22 Cable Ends and phase Colours
2.23 Cable Insulation Colours
2.24 Sub-circuit Wiring
2.25 Space Factor
2.26 Insulation
2.27 Lighting Switches
2.28 Sockets and Switched sockets
2.29 Fused Spur Boxes
2.30 Cooker Outlets
2.31 Connectors
2.32 Lampholders
2.33 Lamps
2.34 Lighting Fittings Street lighting Lanterns
2.35 Position of Points and Switches
2.36 Street/Security Lighting Columns
2.37 Timing Control Switch
2.38 Wiring System for Street Lighting
2.39 Metal control Pillar
2.40 Current Operated Earth leakage circuit breaker
2.41 MV Switchboard
2.42 Steel Conduits and Steel Trunking
2.43 Testing on Site
2.1 **SHOP DRAWINGS**
Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer. Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

2.2 **RECORD DRAWINGS**
These diagrams and drawings shall show the completed installation including sizes, runs and arrangements of the installation. The drawings shall be to scale not less than 1:50 and shall include plan views and section.

The drawings shall include all the details which may be useful in the operation, maintenance or subsequent modifications or extensions to the installation.

Three sets of diagrams and drawings shall be provided, all to the approval of the Engineer.

One coloured set of line diagrams relating to operating and maintenance instructions shall be framed and, mounted in a suitable location.

2.3 **REGULATIONS AND STANDARDS**
All work executed by the Sub-contractor shall comply with the current edition of the “Regulations” for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, and with the Regulations of the Local Electricity Authority.

Where the two sets of regulations appear to conflict, they shall be clarified with the Engineers. All materials used shall comply with relevant Kenya Bureau of Standards Specification.

2.4 **SETTING OUT WORK**
The sub-contractor at his own expenses; is to set out works and take all measurements and dimensions required for the erection of his materials on site; making any modifications in details as may be found necessary during the progress of the works, submitting any such modifications or alterations in detail to the Engineer before proceeding and must allow in his Tender for all such modifications and for the provision of any such sketches or drawings related thereto.

2.5 **POSITIONS OF ELECTRICAL PLANT AND APPARATUS**
The routes of cables and approximate positions of switchboards etc, as shown on the drawings shall be assumed to be correct for purpose of Tendering, but exact positions of all electrical Equipment and routes of cables must be agreed on site with the Engineer before any work is carried out.

2.6 **MCB DISTRIBUTION PANELS AND CONSUMER UNITS**
All cases of MCB Panels and consumer units shall be constructed in heavy gauge sheet with hinged covers.

Removable undrilled gland plates shall be provided on the top and bottom of the cases. Miniature circuit breakers shall be enclosed in moulded plastic with the tripping mechanism and arc chambers separated and sealed from the cable terminals.

The operating dolly shall be tripfree with a positive movement in both make and break position. Clear indication of the position of the handle shall be incorporated.
The tripping mechanism shall be on inverse characteristic to prevent tripping in temporary overloads and shall not be affected by normal variation in ambient temperature.

A locking plate shall be provided for each size of breaker; A complete list of circuit details on typed cartridge paper glued to stiff cardboards and covered with a sheet of perspex, and held in position with four suitable fixings, shall be fitted to the inner face of the lids of each distribution panel. The appropriate MCB ratings shall be stated on the circuit chart against each circuit in use: Ivorine labels shall be secured to the insulation barriers in such a manner as to indicate the number of the circuits shown on the circuit chart. Insulated barriers shall be fitted between phases, and neutrals in all boards, and to shroud live parts.

Neutral cables shall be connected to the neutral bar in the same sequence as the phase cables are connected to the MCB’s. This shall also apply to earth bars when installed.

2.7 FUSED SWITCHGEAR AND ISOLATORS

All fused switchgear and isolators whether mounted on machinery, walls or industrial panels shall conform to the requirements of KS 04 – 226 PART: 1: 1985.

All contacts are to be fully shrouded and are to have a breaking capacity on manual operations as required by KS 04 – 182 : 1980.

Fuse links for fused switches are to be of high rupturing capacity cartridge type, conforming to KS 04 – 183 : 1978.

Isolators shall be load breaking/fault making isolators.

Fused switches and isolators are to have separate metal enclosures. Mechanical interlocks are to be provided between the door and main switch operating mechanism so arranged that the door may not be opened with the switch in the ‘ON’ position. Similarly; it shall not be possible to close the switch with the door open except that provision to defeat the mechanical interlock and close the switch with the door in the open position for test purposes. The ‘ON’ and ‘OFF’ positions of all switches and isolators shall be clearly indicated by a mechanical flag indicator or similar device. In T.P & N fused switch units, bolted neutral links are to be fitted.

2.8 CONDUITS AND CONDUIT RUNS

Conduit systems are to be installed so as to allow the loop-in system of wiring:

All conduits shall be black rigid super high impact heavy gauge class ‘A’ PVC in accordance with KS 04 – 179: 1988 and IEE Regulations. No conduit less than 20mm in diameter shall be used anywhere in this installation.

Conduit shall be installed buried in plaster work and floor screed except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm. Conduit run in chases shall be firmly held in position by means of substantial pipe hooks driven into wooden plugs.

The sub-contractors attention is drawn to the necessity of keeping all conduits entirely separate from other piping services such as water and no circuit connections will be permitted between conduits and such pipes.

All conduits systems shall be arranged wherever possible to be self-draining to switch boxes and conduit outlet points for fittings:

The systems, when installed and before wiring shall be kept plugged with well fitting plugs and when short conduit pieces are used as plugs, they shall be doubled over and tied firmly together with steel wire; Before wiring all conduit systems shall be carried out until the particular section of the conduit installation is complete in every respect.
The sets and bends in conduit runs are to be formed on site using appropriate size bending springs and all radii of bends must not be less than 2.5 times the outside diameter of the conduit. No solid or inspection bends, tees or elbows will be used.

Conduit connections shall either be by a demountable (screwed up) assembly or adhesive fixed and water tight by solution. The tube and fittings must be clean and free of all grease before applying the adhesive. When connections are made between the conduit and switch boxes, circular or non-screwed boxes, care shall be taken that no rough edges of conduit stick out into the boxes.

Runs between draw in boxes are not to have more than two right angle bends or their equivalent. The sub-contractor may be required to demonstrate to the Engineers that wiring in any particular run is easilydrawable and the sub-contractor may, at no extra cost to the contract; be required to install additional draw-in boxes required. If conduit is installed in straight runs in excess of 6000mm, expansion couplings as manufactured by Egatube shall be used at intervals of 6000mm.

Where conduit runs are to be concealed in pillars and beams, the approval of the Structural Engineer, shall be obtained. The sub-contractor shall be responsible for marking the accurate position of all holes, chases etc, on site, or if the Engineer so directs, shall provide the Main Contractor with dimensional drawings to enable him to mark out and form all holes and chases. Should the sub-contractor fail to inform the main contractor of any inaccuracies in this respect they shall be rectified at the sub-contractors expense.

It will be the Sub-contractors responsibility to ascertain from site, the details of reinforced concrete or structural steelwork and check from the builder’s drawings the positions of walls, structural concrete and finishes. No reinforced concrete or steelwork may be drilled without first obtaining the written permission of the Structural Engineer.

The drawings provided with these specifications indicate the appropriate positions only of points and switches, and it shall be the Sub-Contractors responsibility to mark out and centre on site the accurate positions where necessary in consultation with the Architect and the Engineer. The sub-contractor alone shall be responsible for the accuracy of the final position.

### 2.13 CONDUIT BOXES AND ACCESSORIES

All conduit outlets and junction boxes are to be either malleable iron and of standard circular pattern of the appropriate type to suit saddles being used or super high impact PVC manufactured to KS 04 – 179 : 1983. Small circular pattern boxes are to be used with conduits up to and including 25mm outside diameter. Rectangular pattern adaptable boxes are to be used for conduits of 32mm outside diameter and larger. For drawing in of cables in exposed runs of conduit, standard pattern through boxes are to be used:

Boxes are to be not less than 50mm deep and of such dimensions as will enable the largest appropriate number of cables for the conduit sizes to be drawn in without excessive bending.

Outlet boxes for lighting fittings are to be of the loop-in type where conduit installation is concealed and the sub-contractor shall allow one such box per fitting, except where fluorescent fittings are specified when two such boxes per fitting shall be fitted flush with ceiling and if necessary fitted with break joint rings. Pattresses shall be fitted where required to outlets on surface conduit runs.

Adaptable boxes are to of PVC or mild steel (of not less than 12swg) and black enameled or galvanised finish according to location. They shall be of square or oblong shape location. They shall be of square or oblong shape complete with lids secured by four 2 BA brass roundhead screws; No adaptable box shall be less than 75mm x 75mm x 50mm or larger than 300mm x 300mm x 75mm and shall be adequate in depth in relation to the size of conduit entering it. Conduits shall only enter boxes by means of conduit bushes.
2.14 LABELS

Labels fitted to switches and fuseboards;

(i) Shall be Ivorine engraved black on white.

(ii) Shall be secured by R.H brass screws of same manufacturing throughout.

(iii) Shall be indicated on switches:
   a) Reference number of switch
   b) Special current rating
   c) Item of equipment controlled

(iv) Shall indicate on MCB panels
   a) Reference number
   b) Type of board, i.e., lighting, sockets, etc.,
   c) Size of cable supplying panel
   d) Where to isolate feeder cable

(v) Shall be generally not less than 75mm x 50mm.

2.15 EARTHING

The earthing of the installation shall comply with the following requirements;

(i) It shall be carried out in accordance with the appropriate sections of the current edition of the Regulations, for the Electrical Equipment of Buildings issued by Institute of Electrical Engineers of Great Britain.

(ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross sectional area Copper tape shall be provided and all equipment including the lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.

(iii) The earth tape in Sub-clause (ii) shall be connected by means of a copper tape or cable of suitable cross sectional area to an earth electrode which shall be a copper earth rod (see later sub-clause).

(iv) All tapes to be soft high conductivity copper, untinned except where otherwise specified and where run underground on or through walls, floors, etc., it shall be served with corrosion resisting tape or coated with corrosion compound and braided

(v) Where the earth electrode is located outside the building a removable test link shall be provided inside the building as near as possible to the point of entry to the tape, for isolating the earth electrode for testing purposes.

(vi) Earthing of sub-main equipment shall be deemed to be satisfactory where the sub-main cables are M.I.C.S. or conduit with separate earth wire, and installation is carried out in accordance with the figures stated in the current edition of the I.E.E Regulations.

(vii) Where an earth rod is specified (see Sub-clause (iii) it shall be proprietary manufacture, solid hand drawn copper of 15mm diameter driven into the ground to a minimum depth of 3.6m. It shall be made up to 1.2m sections with internal screw and socket joints and fitted with hardened steel tip and driving cap.

(viii) Earth plates will not be permitted

(ix) Where an earth rod is used the earth resistance shall be tested in the manner described in the current edition of the IEE Regulations, by the Sub-Contractor in the presence of the Engineer and the Sub-Contractor shall be responsible for the supply of all test equipment.
(x) Where copper tape is fixed to the building structure it shall be by means of purpose made non-ferrous saddles which space the conductor away from the structure a minimum distance of 20mm. Fixings, shall be made using purpose made plugs; No fixings requiring holes to be drilled through the tape will be accepted.

(xi) Joints in copper tape shall be tinned before assembly riveted with a minimum of two copper rivets and seated solid.

(xii) Where holes are drilled in the earth tape for connection to items of equipment the effective cross sectional area must not be less than required to comply with the IEE regulations.

(xiii) Bolts, nuts and washers for any fixing to the earth tape must be of non-ferrous material.

(xiv) Attention is drawn to the need for the earthing metal parts of lighting fittings and for bonding ball joint suspension in lighting fittings.

2.16 CABLES AND FLEXIBLE CORDS
All cables used in this Sub-Contract shall be manufactured in accordance with the current appropriate Kenya standard Specification which are as follows:-

- P.V.C. Insulated Cables and Flexible Cords - Ks 04-192:1988
- PVC Insulated Armoured Cables - Ks 04-194:1990
- Armouring of Electric cables - Ks 04-290:1987

The successful Sub-Contractor will, at the Engineers discretion be required to submit samples of cables for the Engineers approval; the Engineer reserves the right to call for the cables of an alternative manufacture without any extra cost being incurred.

P.V.C. insulated cables shall be 500/1000 volt grade. No cables smaller than 1.5mm² shall be used unless otherwise specified. The installation and the finish of cables shall be as detailed in later clauses. The colour of cables shall conform with the details stated in the “Cable Braid and insulation Colours” Clause.

2.17 ARMoured P.V.C. INSULATED AND SHEATHED CABLES:
Shall be 600/1000 volt grade manufactured to Ks 04-194:1988 and Ks 04-187/188 with copper stranded conductors.

The wire armour of the cable shall be used wholly as an earth continuity conductor and the resistance of the wire armour shall have a resistance not more than twice of the largest current carrying conductor of the cable.

P.V.C./S.W.A./P.V.C. cables shall be terminated using “Telecom” “B” type or approved equal or approved equal glands and a P.V.C. tapered sleeve shall be provided to shroud each gland.

Where cables rise from floor level to switchgear etc., they shall be protected by P.V.C. conduit, to a height of 600mm from finished floor level, whether the cable is run on the surface or recessed into the wall.

2.18 CABLE SUPPORTS, MARKERS AND TILES
All PVC/SA/PVC cables run inside the building shall be fixed in rising ducts or on ceilings by means of die cost cables hooks or clamps, or appropriate size to suit cables, fixed by studs and back nuts to their channel sections.

D-7.
Alternatively, fixing shall be by BICC claw type cleating system with die-cast cleats and galvanised mild steel back straps or similar approved equal method. For one or two cables run together the cleats shall be fixed a special channel section supports or backstraps described above which shall in turn be secured to walls or ceilings of ducts by rawbolts.

In excessively damp or corrosive atmospheric conditions special finishes may be required and the Sub-contractor shall apply to the Engineer for further instructions before ordering cleats and channels for such areas.

The above type of hooks and clamps and channels or cleats and backstraps shall also be used for securing cables in vertical ducts.

Cables supports shall be fixed at 600mm maximum intervals, the supports being supplied and erected under this Sub-contract. Saddles shall not be used for supporting cables nor any other type of fixing other than one of the two methods described above or other system which has received prior approval of the Engineer;

Cables are to be kept clear of all pipe work and the Sub-contractor shall work in close liaison with other services Sub-contractors.

The Sub-Contractor shall include for the provision of fixing of approved type coloured slip on cables end markers to indicate permanently the correct phase and neutral colours on all ends.

Provision shall be made for supplying and fixing approved non-corrosive metal cable markers to be attached to the outside of all PVC/SWA/PVC cables at 15mm intervals indicating cable size and distinction.

Where PVC/SWA/PVC cables are outside the building they shall be laid underground 750mm deep with protecting concrete interlocking cover tiles laid over which shall be provided and laid under this Sub-contract.

All necessary excavations and reinstatement of ground including sanding or trenches will be carried out by the Sub-Contractor, unless otherwise stated.

2.19 PVC INSULATED CABLES
Shall be of non-braided type as CMA reference 6491 x 600/1000/1000 volt grade cables, or equal approved.

PVC cables shall conform to the details of the “Cables and Flexible cords” and “Cable Braid and Insulation Colours” clauses.

2.20 HEAT RESISTING CABLES
Final connections to cookers, water heaters, etc., shall be made using butyl rubber insulated cable as CMA reference 610 butyl (Single core 600/1000 Volt).

This type of cable shall be used in all instances where a temperature exceeding 100°F, but not exceeding 150°F is likely to be experienced. Final connections to all lighting fittings (and other equipment where a temperature in excess of 150°C likely to be experienced) shall be made using silicon rubber insulated cable or equal and approved.

2.21 FLEXIBLE CORDS
Shall be in accordance with the “Cable and Flexible Cords” clause. No cord shall be less than 24/0.2mm in size unless otherwise specified.

D-8.
Circular white twin TRS flex shall be used for plain pendant fittings up to 100 watts. For all other types of lighting fittings the flexible cable shall be silicone rubber insulated.

No polythene insulated flexible cable shall be used in any lighting fitting or other appliance (see “Heat Resisting Cables” Clause 30).

2.22 CABLE ENDS AND PHASE COLOURS

All cable ends connected up in switchgear, MCB panels etc.; shall have the insulation carefully cut back and the ends sealed with Hellerman rubber slip on cable end markers.

The markers shall be of appropriate phase colour for switch and all other live feeds to the details of the “Cable Insulation Colours” clause. Black cable with black end markers shall only be used for neutral cables.

2.23 CABLE INSULATION COLOURS

Unless otherwise stated in later clauses the insulation colours shall be in accordance with the following table.

Where other systems are installed the cable colours shall be in accordance with the details stated in the appropriate clause.

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>INSULATION COLOUR</th>
<th>CABLE END MARKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main and Sub-Main</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Phase</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>b) Neutral</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td>1) Sub-Circuits</td>
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<td></td>
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<tr>
<td>Single Phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Phase</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>b) Neutral</td>
<td>Black</td>
<td>Black</td>
</tr>
</tbody>
</table>

2.24 SUB-CIRCUIT WIRING

For all lighting and sockets wiring shall be carried out in the “looping in” system and there shall be no joints whatsoever. No lighting circuits shall comprise more than 20 points when protected by 10A MCB. Cables with different cross-section area of copper shall not be used in combination.

Lighting circuits P. V.C. cable 1.5mm² for all lighting circuits indicated on the drawing.

Power circuits P.V.C cable (minimum sizes).

(i) 2.5mm² for one, two or three 5Amp sockets wired in parallel.

(ii) 2.5mm² for one 15Amp socket.

(iii) 2.5mm² for maximum of ten switched 13 Amp sockets wired from 30 Amp MCB.

The wiring sizes for lighting circuits and sockets are shown on the drawings. In such cases, the sizes shown on the drawings shall prevail over the sizes specified.
Wiring sizes for other appliances shall be shown on the drawing or specified in later clauses of this specification.

2.25 **SPACE FACTOR**
The maximum number of cables that may be accommodated in a given size of conduit or trunking or duct is not to exceed the number in Tables B.5 and B.6 or as stated in Regulation B.91, B.117 and B.118 of the I.E.E Regulations whichever is appropriate.

2.26 **INSULATION**
The insulation resistance to earth and between poles of the whole wiring system, fittings and lumps, shall not be less than the requirements of the latest edition of the I.E.E Regulations. Complete tests shall be made on all circuits by the Sub-contractor before the installations are handed over.

A report of all tests shall be furnished by the Sub-Contractor to the Engineer. The Engineer will then check test with his own instruments if necessary.

2.27 **LIGHTING SWITCHES**
These shall be mounted flush with the walls, shall be contained in steel or alloy boxes and shall be of the gangs ratings and type shown in the drawings. They shall be as manufactured by M.K. Electrical Ltd., or other equal and approved to KS 04 – 247: 1988

2.28 **SOCKETS AND SWITCHED SOCKETS**
These shall be flush pattern in steel/pvc box and shall be of the gangs and type specified in the drawings.

They shall be 13- Amp, 3-pin, shuttered, switched and as manufactured by “M.K. Electrical Co. Ltd.”, or other approved equal to KS 04 – 246: 1987

2.29 **FUSED SPUR BOXES**
These shall be flush, D.P switched as in steel/pvc box and of type and make specified in the drawings complete with pilot light and as manufactured by “M. K. Electrical Company Ltd”, or other approved equal KS 04 – 247: 1988

2.30 **COOKER OUTLETS**
These shall be flush mounted with 13-A switched socket outlet and neon indicator Lamps.
The cooker control units shall be as manufactured by “M.K. Electrical Company Ltd”, or other approved equal KS 04 – 247: 1988

2.31 **CONNECTORS**
Shall be specified in the drawings and appropriate rating. These shall be fitted at all conduit box lighting point outlets for jointing of looped P.V.C cables with flexible cables of specified quality.

2.32 **LAMPHOLDERS**
Shall be of extra heavy H.O skirted and shall be provided for every specified lighting fitting and shall be B.C.; E.S.; or G.E.S as required. All E.S. and G.E.S. holders shall be heavy brass type (except for plain pendants where the reinforced bakelite type shall be used). The screwed cap of the E.S and G.E.S. holders shall be connected to the neutral.

Where lampholders are supported by flexible cable, the holders shall have “cord grip” arrangements and in the case of metal shades earthing screws shall be provided on each of the holders.

D-10.
The Sub-Contractor must order the appropriate type of holder when ordering lighting fittings, to ensure that the correct types of holders are provided irrespective of the type normally supplied by the manufacturers.

2.33 LAMPS
All lamps shall be suitable for normal stated supply voltage and the number and sizes of lamps detailed on the drawings shall be supplied and fixed. The Sub-Contractor must verify the actual supply voltage with the supply authority before ordering the lamps.

Tungsten filament lamps shall be manufactured in accordance with KS 04 – 112:1978 for general service lamps and KS 04 – 307:1985 for lamps other than general services. Tubular fluorescent lamps shall comply with KS 04 – 464:1982

Pearl lamps shall be used in all fittings unless otherwise specified.

2.34 LIGHTING FITTINGS AND STREET LIGHTING LANTERNS
This Sub-Contract shall include for the provision, handling charges, taking the delivery, safe storage, wiring (including internal wiring) assembling and erecting of all lighting fittings shown on the drawings.

All fittings and pendants shall be fixed to the conduit boxes with brass R/H screws. These to be in line with metal finish of fittings. The lighting fittings are detailed for the purpose of establishing a high standard of finish and under no circumstances will substitute fittings be permitted.

In case of rectangular shaped ceiling fittings, the extreme ends of the fittings shall be secured to suitable support in addition to the central conduit box fittings. Supports shall be provided and fixed by the Sub-Contractor.

The whole of the metal work of each lighting fittings shall be effectively bonded to earth. In the case of ball and/or knuckle joints short lengths of flexible cable shall be provided, bonded to the metal work on either side of the joints. If the above provisions are not made by the manufacturers, the Sub-contractor shall include cost of additional work necessary in his tender. See “Flexible Cords” clause for details of internal wiring of lighting fittings. Minimum size of internal wiring shall be 20/0.20mm (23/0067).

Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings. It is to be noted that some fittings are suspended as shown on the drawings.

Where two or more points are shown adjacent to each other on the drawings, e.g. socket outlet and telephone outlet, they shall be lined up vertically or horizontally on the centre lines of the units concerned.

Normally, the units shall be lined up on vertical centre lines, but where it is necessary to mount units at low level they shall be lined up horizontally.

2.35 POSITIONS OF POINTS AND SWITCHES
Although the approximate positions of all points are shown on the drawings, enquiry shall be made as to the exact positions of all M.C.B panels, lighting points, socket outlets etc, before work is actually commenced. The Sub-contractor must approach the Architect with regard to the final layout of all lights on the ceiling and walls.

The Sub-contractor must consult with the Engineer in liaison with the Clerk of Works, or the General Foreman on site regarding the positions of all points before fixing any conduit etc. The Sub-Contractor shall be responsible for all alterations made necessary by the non-compliance with the clause.
2.36 **STREET/SECURITY OUTDOOR LIGHTING COLUMNS:**
The column shall be at a minimum of 225mm in the ground on 75mm thick concrete foundations and the pole upto 150mm shall be surrounded with concrete. The top bracket and plain section of the columns shall be common to and interchangeable with all brackets with maximum mismatching tolerance of 3mm between any pole and bracket. After manufacture and before erection the columns shall be treated with an approved mordant solution which shall be washed off and the whole allowed to dry. Thereafter, the columns shall be painted with one undercoat and two coats of gloss paint to an approved colour. All columns shall be complete with fused cut-outs.

2.37 **TIMING CONTROL SWITCH**
These shall be installed where shown on the drawings. Photocell timing control circuits which will operate ‘on’ with a specified level of darkness and ‘off’ with a given level of light. The initial adjustment will be done with approval of the Electrical Engineer.

2.38 **WIRING SYSTEM FOR STREETLIGHTING**
Cables shall be as indicated on the drawings, and shall be laid in a cable trench 450mm deep along the road sides and 600mm deep across the roads and 900mm away from the road kerb or 1500mm away from the edges of the road. ‘Loop-in’ and ‘Loop-out’ arrangement shall be used at every pole. Wiring to the lanterns on each pole shall be with 1.5mm² PVC twin insulated and sheathed cable with earth wire shall be laid at least 600mm below the finished road level on a compact bed of murram at least 50mm thick and covered with a concrete surrounded 150mm thick.

2.39 **METAL CONTROL PILLAR**
These shall be metal clad and fabricated as per contract drawings and specification. The Sub-Contractor shall supply, install, test and commission control pillars including supplying, fixing connecting switchgears as detailed on the appropriate drawings.

2.40 **CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER**
Current operated earth leakage circuit breaker shall conform to B.S.S. 4293:68 rated at 240 volts D.P. 50 cycles A.C. Mains.

The breaker shall be provided with test switch and fitted in weather proof enclosure for surface mounting. The rated load current and earth fault operating current shall be as specified in the drawings. These shall be as manufactured by Crabtree, Siemens or other equal and approved.

2.41 **M.V. SWITCHBOARD AND SWITCHGEAR**
The switchboard shall be manufactured in accordance with KS04-226 which co-ordinates the requirements for electrical power switchgear and associated apparatus. It is not intended that this K.S. should cover the requirements for specified apparatus for which separate Kenyan Standard exist. All equipment and material used in the switchboard shall be in accordance with the appropriate Kenya Standard.

The switchboard shall comprise the equipment shown on the drawings together with all current transformers, auxiliary fuses, labels, small wiring and interconnections necessary for the satisfactory operation of the switchboard.

Switchboard shall be of the flush fronted, enclosed, metal clad type with full front or rear access as called for in the particular specifications, suitable for indoor use, sectionalized as necessary to facilitate transport and erection. The maximum height of the switchboard is to be approximately 2.0 meters. A suitable connection chamber containing all field terminals shall be provided at the top or bottom of the switchboard as appropriate.

D-12.
Before manufacture, the Sub-Contractor shall submit to the consulting Engineer for approval of detailed drawings showing the layout, construction and connection of the switchboard.

All bus-bars and bus-bar connections shall consist of high conductivity copper and be provided in accordance with KS 04-226: 1985. The bus-bars shall be clearly marked with the appropriate phase and neutral colours which should be red, yellow, blue for the phases and black for neutral. The bus-bars shall be so arranged in the switchboard that the extensions to the left and right may be made in the future with ease should the need arise.

Small wiring, which will be neatly arranged and cleated, shall be executed in accordance with B.S. 158 and the insulation of the wiring shall be colored according to the phase or neutral connection.

Switches and fuse switches, shall be in strict accordance with KS04-183:1978 Class 2 switches. Means of locking the switch in the “OFF” position shall be provided.

All fuse switches shall comply with KS04-183:1978, PARTS 2 and 3 a fault rating at least equal to the fault rating of the switchboard in which they are installed. Cartridge fuse links to KS 04-183:1978 category A.C. 46, class Q1 and fusing factor not exceeding 1.5 shall be supplied with each fused switch.

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work. When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the “OFF” position shall be provided.

2.42 STEEL CONDUITS AND STEEL TRUNKING

Conduits shall be of heavy gauge class “B” welded to Standard specification KS 04-180:1985. In no case will conduit smaller than 20mm diameter be used on the works. Conduits installed within buildings shall be black enameled finish except where specified otherwise. Where installed externally or in damp conditions they shall be galvanised. Conduit fittings, accessories or equipment used in conjunction with galvanised conduits shall also be galvanised or otherwise as approved by the service engineer.

Metal trunking shall be fabricated from mild steel of not less than 18 swg. All sections of trunking shall be rigidly fixed together and attached to the framework or fabric or the building at intervals of not less than 1.2m. Joint trunking shall not overhang fixing points by more than 0.5m.

All trunking shall be made electrically continuous by means of 25 x 3mm copper links across each joint and where the trunking is galvanised, the links shall be made by galvanised flat iron strips.

All trunking fittings (i.e. Bends, tees, etc) shall leave the main through completely clear of obstructions and continuously open except through walls and floors at which points suitable fire resisting barriers shall be provided as may be necessary. The inner edge of bends and tees shall be chamfered where cables larger than 35mm² are employed.

Where trunking passes through ceilings and walls the cover shall be solidly fixed to 150mm either side of ceilings and floors and 50mm either side of walls.

Screws and bolts securing covers to trunking or sections of covers together shall be arranged so that damage to cables cannot occur either when fixing covers or when installing cables in the trough.

Where trunking is used to connect switchgear of fuseboards, such connections shall be made by trunking fittings manufactured for this purpose and not by multiple conduit couplings.

Where vertical sections of trunking are used which exceed 4.5m in length, staggered tie off points shall be provided at 4.5m intervals to support the weight of cables.
Unless otherwise stated, all trunking systems shall be painted as for conduit.

**Where a wiring system incorporates galvanized conduit and trunking, the trunking shall be deemed to be galvanized unless specified otherwise.**

The number of cables to be installed in trunking shall be such as to permit easy drawing in without damage to the cables, and shall in no circumstances be such that a space factor of 45% is exceeded.

Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects. Oil and any other insulating substance shall be removed from the screw threads; where conduits terminate in fuse-gear, distribution boards, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enamelled tubing and galvanising paint for galvanised tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit. The inner radius of the bed shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in-box. Where straight runs of conduit are installed, draw-in-boxes shall be provided at distances not exceeding 15mm. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

Conduit shall be swabbed out prior to drawing in cables, and they shall be laid so as to drain of all condensed moisture without injury to end connections.

Conduits and trunking shall be run at least 150mm clear of hot water and steam pipes, and at least 75mm clear of cold water and other services unless otherwise approved by the services engineer.

All boxes shall conform to KS 04 – 668: 1986, to be of malleable iron, and black enamelled or galvanised according to the type of conduit specified. All accessory boxes shall have threaded brass inserts.

Box lids where required shall be heavy gauge metal, secured by means of zinc plated or cadmium plated steel screws.

All adaptable boxes and lids of the same size shall be interchangeable.

Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit. Where used in conjunction with mineral insulated copper sheathed cable, galvanised boxes shall be used and painted after erection.

Draw-in boxes in the floors are generally to be avoided but where they are essential they must be grouped in positions approved by the services engineer and covered and by the suitable floor traps, with non-ferrous trays and covers.

The floor trap covers are to be recessed and filled in with a material to match the floor surface.

The Sub-contractor must take full responsibility for the filling in of all covers, but the filling in material will be supplied and the filling carried out by the main building contractor.

Where buried in the ground outside the building the whole of the buried conduit is to be painted with two coats of approved bitumastic composition before covering up.

D-14.
Where run on the surface, unpainted fittings and joints shall be painted with two coats of oil bound enamel applied to rust and grease free metalwork.

2.43 TESTING ON SITE
The Sub-contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specification and the Electric Supply Company’s By-Laws.

(a) Tests shall be carried out to prove that all single pole switches are installed in the ‘live’ conductor.

(b) Tests shall be carried out to prove that all socket outlets and switched socket outlets are connected to the ‘live’ conductor in the terminal marked as such, and that each earth pin is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each ‘ring’ circuit.

(c) Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation. Triplicate copies of the results of the above tests shall be provided within 14 days of the witnessed tests and the Sub-contractor will be required to issue to the service engineer the requisite certificate upon completion as required by the regulations referred to above.

(d) Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation made apparently by such inspections or tests shall be rectified by the Sub-contractor at his own expense.

(e) The Sub-contractor shall provide accurate instruments and apparatus and all labour required to carry out the above tests. The instruments and apparatus shall be made available to the services engineer to enable him to carry out such tests as he may require.

The Sub-contractor shall generally attend on other contractors employed on the project and carry out such electrical tests as may be necessary.

The Sub-contractor shall test to the services engineer’s approval and as specified elsewhere in this specification or in standards and regulations already referred to, all equipment, plant and apparatus forming part of the works and before connecting to any power or other supply and setting to work.

Where such equipment, etc., forms part of or is connected to a system whether primarily or of an electrical nature or otherwise (e.g. air conditioning system) the Sub-contractor shall attend on and assist in balancing, regulating, testing and commissioning, or if primarily an electrical or other system forming part of works, shall balance, regulate, test and commission the system to the service engineer’s approval.
APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

The electrical sub-contractor shall comply with the following:

1. Government Electrical Specifications No. 1 and No. 2.
2. All requirements of Kenya Power and Lighting Company Limited, and Communications Commission of Kenya (CCK).
3. Shall be dually registered with NCA in the Appropriate Class and Category
4. Shall be dually Licensed with ERC to carry out Electrical installation works
5. Shall be dually Licensed with ERC to carry out Solar PV installation works (Where Solar Installation Works are to Be done)
SECTION E

SCHEDULE OF CONTRACT DRAWINGS
SCHEDULE OF CONTRACT DRAWINGS

1.0 Tenderers may inspect the electrical drawings at the office of the Chief Electrical and Mechanical Engineer (BS), Ministry of Public Works, Hill Plaza, along Ngong Road, Nairobi, during normal working hours.

The drawings shall however be availed, on award of the tender, to the nominated sub contractor.
SECTION F

PARTICULAR SPECIFICATIONS

OF

MATERIALS AND WORKS
PARTICULAR SPECIFICATIONS

1.0 SITE LOCATION

The site of the proposed works is As in the Main Document

2.0 SCOPE OF WORKS

The works to be carried out under this sub-contract comprise of but not limited to the supply, installation, testing and commissioning of:

i. Careful removal of the existing Lighting fittings and accessories and handing over to client for safe keeping.

ii. Wiring for lighting and power points

iii. Installation of lighting fittings and accessories

iv. Installation of power distribution cables and control switchgear

v. Installation of MATV System

vi. Installation of Lightning arrestor system

vii. Installation of fire detection and alarm system

viii. Solar PV Installation Works

3.0 MATERIALS FOR THE WORKS

Materials shall be as specified in Section D and in the Bills of Quantities of this document which shall be read in conjunction with contract drawings. Alternative materials shall be accepted only after approval by the Project Manager.
SECTION G

SCHEDULE OF UNIT RATES
SCHEDULE OF UNIT RATES

1. The tenderer shall insert unit rates against the items in the following schedules and may add such other items as he considers appropriate.

2. The unit rates shall include for supply, transport, insurance, delivery to site, storage as necessary, assembling, cleaning, installing, connecting, profit and maintenance in defects liability and any other obligation under this contract.

3. The unit rates will be used to assess the value of additions or omissions arising from authorized variations to the contract works.

4. Where trade names or manufacturer’s catalogue numbers are mentioned in the specification, the reference is intended as a guide to the type of article or quality of material required. Alternative brands of equal and approved quality will be accepted.

5. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including 16% V.A.T and 3% Withholding tax).

In accordance with Government policy, the 16% V.A.T and 3% withholding Tax shall be deducted from all payments made to the tenderer, and the same shall be forwarded to the Kenya Revenue Authority (KRA).
## SCHEDULE OF UNIT RATES

<table>
<thead>
<tr>
<th>NO</th>
<th>DESCRIPTION</th>
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<th>UNIT</th>
<th>UNIT RATE</th>
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</thead>
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<td>1.0</td>
<td>PVC/SWA/PVC copper cable per metre</td>
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<tr>
<td></td>
<td>a) 35mm sq. 4 core</td>
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<tr>
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<td>b) 16mm sq. 2 core</td>
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<td>2.0</td>
<td>200A 10 Way TPN Distribution Board</td>
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<td>3.0</td>
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<td>b) 32mm Ø conduit</td>
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<td>4.0</td>
<td>Single PVC cable per metre</td>
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<tr>
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<td>b) 2.5mm²</td>
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<td>c) 4.0mm²</td>
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<td>d) 6.0mm²</td>
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<td>PVC boxes as</td>
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<td>a) 32mm PVC loop-in box circular</td>
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<td>b) 38mm PVC loop-in box circular</td>
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<td>c) 50mm PVC loop-in box circular</td>
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<td>6.0</td>
<td>50W led floodlight as Thorn Lighting</td>
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<td><strong>Distribution Boards and Consumers Units</strong></td>
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<td>6Way TPN as Crabtree</td>
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<td>4 Way SPN as Crabtree</td>
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<td>Circuit breakers</td>
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<td>125A TP MCCB</td>
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<td>200A TP MCCB</td>
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<td>11.</td>
<td>45W Led 600x600mm Panel Light</td>
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<td>12.</td>
<td>45W Led 1200mmx300mm Panel Light</td>
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</table>
SECTION H

BILLS OF QUANTITIES
BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor’s Bills of Quantities and specification. These Bills are designated as Bill No.1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

The Bills of Quantities are divided generally into three sections:-

a) Preliminaries – Bill 1
Sub-contractors preliminaries are as per those described in section C – sub-contractor preliminaries and conditions of contract. The sub-contractor shall study the conditions and make provision to cover their cost in this Bill. The number of preliminary items to be priced by the Tenderer has been limited to tangible items such as site office, temporary works and others. However the Tenderer is free to include and price any other items he deems necessary taking into consideration conditions he is likely to encounter on site.

b) Installation Items and Other Bills
The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications. The unit of measurements and observations are as per those described in clause 1.05 of the section C.

c) Summary
The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The sub-contractor shall insert his totals and enter his grand total tender sum in the space provided below the summary. This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document.

H/1---------- (i)
B) NOTES FOR BILLS OF QUANTITIES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.

2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including 16% V.A.T and 3% Withholding tax).

   In accordance with Government policy, the 16% V.A.T and 3% withholding Tax shall be deducted from all payments made to the tenderer, and the same shall be forwarded to the Kenya Revenue Authority (KRA).

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part.

4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere to. Otherwise alternative brands of equal and approved quality will be accepted.

   Should the sub-contractor install any material not specified here in before receiving approval from the Project Manager, the sub-contractor shall remove the material in question and, at his own cost, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the Form of Tender.

6. Tenderers must enclose, together with their submitted tenders, detailed manufacturer’s Brochures detailing Technical Literature and specifications on the items they intend to offer.

   This shall be used in the tender evaluation to determine the first line aesthetics and quality of fittings offered.
1. **Statement of Compliance**

   a) I confirm compliance of all clauses of the General Conditions, General Specifications and Particular Specifications in this tender.

   b) I confirm I have not made and will not make any payment to any person, who can be perceived as an inducement to win this tender.

Signed: ........................................... *for and on behalf of the Tenderer*

Date: .................................

Official Rubber Stamp: ..........................................................
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<td>Variation clause 1.13</td>
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<td>Prime cost and provisional sum clause 3.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)</td>
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<td>Government Legislation and Regulations clause 1.16</td>
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<td>Import Duty and Value Added Tax clause 1.17 (Note this clause applies for materials supplied only. VAT will also be paid by the sub-contractor as allowed in the summary page)</td>
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<td>Samples and Materials Generally clause 1.21</td>
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**SUB-TOTAL CARRIED TO PAGE H/5**

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<td>Contractor’s Office in Kenya clause 1.24</td>
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<td>Record Drawings(As Installed) and Instructions clause 1.33</td>
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<td>Testing and Inspection – Installation clause 1.39</td>
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<td>Storage of Materials clause 1.41</td>
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<td>Local and other Authorities notices and fees clause 1.60</td>
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<td>Temporary Works clause 1.63</td>
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<td>Patent Rights clause 1.64</td>
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<td>Mobilization and Demobilization Clause 1.65</td>
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<td>33</td>
<td>Extended Preliminaries Clause 1.66 (see Appendix - clause 1.70)</td>
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<td>Supervision by Engineer and Site Meetings Clause 1.67</td>
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<td>35</td>
<td>Allow for profit and Attendance for the above</td>
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<td>36</td>
<td>Amendment to Scope of Sub-contract Works Clause 1.68</td>
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<td>37</td>
<td>Contractor obligation and Employers Obligation clause 1.69</td>
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<td>38</td>
<td>Supply of 1No. Laptop Computer to the Project Engineer for Project Administration as per Particular Specifications page F3</td>
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<td>39</td>
<td>Any other preliminaries</td>
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Sub-total above

Sub-total brought forward from page H-3

Sub-total brought forward from page H-4

**TOTAL FOR SCHEDULE No. 1- PRELIMINARIES- CARRIED FORWARD TO PRICE SUMMARY PAGE**

Bidders **MUST** either insert or indicate as **NIL** for the following clauses

1. Attendance upon tradesmen, etc (Insert percentage only) Clause 1.58 of Section C

2. Extended preliminaries (Insert percentage only) Clause 1.66 Section C

H/5
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<tr>
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<th>Description</th>
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<th>Unit</th>
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<td>Supply, install, test and commission the following :-</td>
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<td>1.01</td>
<td>LIGHTING POINTS</td>
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<tr>
<td></td>
<td>Lighting points wired in 1.5 mm² SC CU cables drawn in concealed 20mm diameter HG P.V.C conduits for:-</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>a) one way switching</td>
<td>7</td>
<td>No.</td>
<td></td>
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</tr>
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<td></td>
<td>b) two way switching</td>
<td>3</td>
<td>No.</td>
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<td>1.02</td>
<td>SWITCHES</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>10Amps, switch plate as CLIPSAL, BG NEXUS or approved equivalent as</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>a) one gang one way</td>
<td>1</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) two gang two way</td>
<td>3</td>
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<td></td>
<td>c) three gang two way</td>
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<td></td>
<td>d) Intermediate switch</td>
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<td>1.03</td>
<td>LIGHTING FITTINGS</td>
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<td>Lighting fittings complete with bulbs or tubes as follows:-</td>
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<tr>
<td></td>
<td>a) 1200mm, 1x36 Watts Batten fluorescent fitting with HF electronic control gear as THORN or approved equivalent</td>
<td>1</td>
<td>No.</td>
<td></td>
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<tr>
<td></td>
<td>b) Ceiling rose fitting with CG lampholders and flex cord together with energy saving lamp as MK</td>
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<td></td>
<td>c) 60 Watts, spherical screw neck ball fitting as THORN MTC 1060 or approved equivalent.</td>
<td>2</td>
<td>No.</td>
<td></td>
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<tr>
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<td>d) 600mm, 1x18 Watts Batten fluorescent fitting with HF electronic control gear and pull cord as THORN or approved equivalent</td>
<td>0</td>
<td>No.</td>
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<tr>
<td></td>
<td>e) 14W fluorescent bulkhead security light fitting as THORN Cat. No.0BV2008 or approved equivalent</td>
<td>3</td>
<td>No.</td>
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<tr>
<td></td>
<td>f) 15W Mirror strip light with 220/240V shaver unit complete with tube, pull cord switch as Thorn FLST 13 or equivalent</td>
<td>1</td>
<td>No.</td>
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<td>SUB TOTAL C/F TO COLLECTION H/7</td>
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SCHEDULE NO.1 - 2 BEDROOM UNITS - MPEKETONI
## SCHEDULE NO. 1 CONT'D:- 2 BEDROOM UNITS.

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<th>Amount (Ksh)</th>
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<tr>
<td>1.04</td>
<td>13 Amps socket outlet points wired ring comprising of 3x2.5 mm sq. single core PVCI copper cables drawn in concealed 25mm HG PVC conduits and steel Trunking.</td>
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<td>No.</td>
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<td>1.05</td>
<td>13 Amps. Moulded plate switched socket outlet with neon indicator as BG, CLIPSAL or approved equivalent</td>
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<tr>
<td></td>
<td>a) single.</td>
<td>4</td>
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<tr>
<td></td>
<td>b) twin.</td>
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<td>No.</td>
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<td>1.06</td>
<td>Instant shower point comprising wiring in 3x4.0mm² PVC-SC-CU cables in concealed PVC conduits</td>
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<td>1.07</td>
<td>20 Amps double pole switches with neon indicator as CLIPSAL or approved equivalent for items 1.06 above</td>
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<td>1.08</td>
<td>Cooker point comprising of 3x6mm² PVCI Copper cables drawn in concealed 25mm dia. HG PVC conduits from CU</td>
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<td>1.09</td>
<td>Cooker control unit complete with 13 Amps. Switched socket outlet as MEM or approved equivalent.</td>
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<td>1.10</td>
<td>Cooker connection unit for item 1.09 above.</td>
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<td><strong>TV WORKS</strong></td>
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<td>1.11</td>
<td>TV points comprising Draw wire in concealed PVC conduits</td>
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<td>1.12</td>
<td>TV outlet plate complete with wiring in CO-AXIAL cable drawn in concealed HG PVC conduit</td>
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**SUB TOTAL C/F TO COLLECTION PAGE H/7**
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<td><strong>CONSUMER UNITS</strong></td>
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<td>1.13</td>
<td>6 ways SP&amp;N, flush mounted consumer unit complete with 100A integral isolator as HAGER or approved equivalent complete with all accessories but excluding MCBs.</td>
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<td>MCB’s for item 1.13 above</td>
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<td>(a) 10A, SP</td>
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<td>(b) 20A, SP</td>
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<td>(c) 30A, SP</td>
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<td>(d) 45A SP</td>
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<td>(e) Blanking plates</td>
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<td>1.15</td>
<td><strong>SUB-MAIN POWER DISTRIBUTION</strong></td>
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<td>16mm² 3Core PVC/SWA/PVC Copper cables in cable trench and rising duct from Meter board to consumer</td>
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SUB TOTAL C/F TO COLLECTION PAGE H/7

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**SCHEDULE 1 CONT'D: 2 BEDROOM UNITS**

**COLLECTION PAGE FOR SCHEDULE 1.**

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<tr>
<td>2.00</td>
<td>Total brought forward from page No. H/5</td>
<td>-</td>
</tr>
<tr>
<td>3.00</td>
<td>Total brought forward from page No. H/6</td>
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**SUB-TOTAL FOR 1NO. UNIT**

| TOTAL FOR 2NO. UNITS C/F TO SUMMARY PAGE | x2 |
| TOTAL FOR 2X2NO. UNITS C/F TO SUMMARY PAGE | 2.00 |
## SCHEDULE NO. 2 - COMMON SERVICES

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Ksh)</th>
<th>Amount (Ksh)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>METER BOX</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.01</td>
<td>16 SWG surface mounted and spray painted Meter board to accommodate 2No. Single tariff Prepaid Meters <em>complete with</em> 100A TPN MCCB and all other necessary accessories.</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.02</td>
<td>Supply and install the following in item 2.01 above</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. 100A SPN MCCB</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii. 100A KMBG switch fuse</td>
<td>2 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. Allow for interwiring within the meterboard</td>
<td>1 item</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>EARTHING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.03</td>
<td>Earthing, for the building comprising of the following and any other necessary accessories:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) 12.5 mm x 1200 mm earth rod as FURSE cat. No. RB 105.</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) 12.5 mm dia. Driving stud as FURSE cat.No. ST100.</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) Rod to cable clamp as FURSE cat. No. CR510.</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) Concrete inspection pit as FURSE cat. No. PT005 (or a well made 320mm x 320mm x 210 mm depth pit)</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) 16mm sq. SC PVCI Copper cables.</td>
<td>6 LM</td>
<td></td>
<td></td>
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</table>

**SUB TOTAL** C/F TO COLLECTION PAGE H/10

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SCHEDULE NO. 2 CONT'D - COMMON SERVICES

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<th>Amount (Ksh)</th>
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<tr>
<td></td>
<td><strong>CENTRALIZED ANTENNA SYSTEM</strong></td>
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<tr>
<td>2.11</td>
<td>Mast head High gain amplifier units.</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.12</td>
<td>Satellite Receiver Dish for DSTV</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.13</td>
<td>Four way splitters as Ellies or approved equivalent</td>
<td>1 No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.14</td>
<td>13 AMP High voltage guard as sollatec or approved equivalent</td>
<td>1 No.</td>
<td></td>
<td></td>
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</table>

**TOTAL** C/F TO COLLECTION PAGE H/10

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 BILL NO. 2 :: COLLECTION PAGE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>AMOUNT(KSHS)</th>
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</tr>
<tr>
<td>B</td>
<td>Total brought forward from page No. H/9</td>
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</table>

SUB-TOTAL C/F TO SUMMARY PAGE

H/10
## MAIN SUMMARY FOR ELECTRICAL WORKS

<table>
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<tr>
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<th>AMOUNT (KSHS)</th>
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</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Total b/f from collection page No. H/3 for PRELIMINARIES</td>
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</tr>
<tr>
<td>2.00</td>
<td>Total b/f from collection page No. H/5 for 1 BEDROOM TWIN UNITS</td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>Total b/f from collection page No. H/10 for COMMON SERVICES</td>
<td></td>
</tr>
<tr>
<td>4.00</td>
<td>Allow for 4No. sets of “As INSTALLED DRAWINGS”</td>
<td></td>
</tr>
<tr>
<td>5.00</td>
<td>Allow for KPLC liaison and attendance</td>
<td></td>
</tr>
<tr>
<td>6.00</td>
<td>Provisional sum for KPLC &amp; Metering service line</td>
<td><strong>200,000.00</strong></td>
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</tbody>
</table>

**GRAND TOTAL FOR ELECTRICAL WORKS CARRIED TO GRAND SUMMARY PAGE**
SECTION D:

GENERAL MECHANICAL SPECIFICATIONS
# GENERAL MECHANICAL SPECIFICATION

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
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<tbody>
<tr>
<td>2.01</td>
<td>GENERAL</td>
<td>D-1</td>
</tr>
<tr>
<td>2.02</td>
<td>QUALITY OF MATERIALS</td>
<td>D-1</td>
</tr>
<tr>
<td>2.03</td>
<td>REGULATIONS AND STANDARDS</td>
<td>D-1</td>
</tr>
<tr>
<td>2.04</td>
<td>ELECTRICAL REQUIREMENTS</td>
<td>D-1</td>
</tr>
<tr>
<td>2.05</td>
<td>TRANSPORT AND STORAGE</td>
<td>D-1</td>
</tr>
<tr>
<td>2.06</td>
<td>SITE SUPERVISION</td>
<td>D-2</td>
</tr>
<tr>
<td>2.07</td>
<td>INSTALLATION</td>
<td>D-2</td>
</tr>
<tr>
<td>2.08</td>
<td>TESTING</td>
<td>D-2</td>
</tr>
<tr>
<td>2.09</td>
<td>COLOR CODING</td>
<td>D-3</td>
</tr>
<tr>
<td>2.10</td>
<td>WELDING</td>
<td>D-3</td>
</tr>
</tbody>
</table>
2.01 **General**
This section specifies the general requirement for plant, equipment and materials forming part of the Sub-contract Works and shall apply except where specifically stated elsewhere in the Specification or on the Contract Drawings.

2.02 **Quality of Materials**
All plant, equipment and materials supplied as part of the Sub-contract Works shall be new and of first class commercial quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications designated herein.

All products or materials not manufactured by the Sub-contractor shall be products of reputable manufacturers and so far as the provisions of the Specification is concerned shall be as if they had been manufactured by the Sub-contractor.

Materials and apparatus required for the complete installation as called for by the Specification and Contract Drawings shall be supplied by the Sub-contractor unless mention is made otherwise.

Materials and apparatus supplied by others for installation and connection by the Sub-contractor shall be carefully examined on receipt. Should any defects be noted, the Sub-contractor shall immediately notify the Engineer.

Defective equipment or that damaged in the course of installation or tests shall be replaced as required to the approval of the Engineer.

2.03 **Regulations and Standards**
The Sub-contract Works shall comply with the current editions of the following:

a) The Kenya Government Regulations.
b) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
c) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
d) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
e) The Local Council By-laws.
f) The Electricity Supply Authority By-laws.
g) Local Authority By-laws.
i) The Kenya Bureau of Standards

2.04 **Electrical Requirements**
Plant and equipment supplied under this Sub-contract shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied they shall be complete with a main isolator.

The supply power up to and including local isolators shall be provided and installed by the Electrical Sub-contractor. All other wiring and connections to equipment shall form part of this Sub-contract and be the responsibility of the Sub-contractor.

The Sub-contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer’s approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents described in the Kenya Power and Lighting Company (KPLC) By-laws.

All electrical plant and equipment supplied by the Sub-contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 Volts, 50Hz, 3-Phase or 240Volts, 50Hz, 1-phase.

Any equipment that is not rated for the above voltages and frequencies shall be rejected by the Engineer.

2.05 **Transport and Storage**
All plant and equipment shall, during transportation be suitably packed, crated and protected to minimise the possibility of damage and to prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.
Adequate measures shall be taken by the Sub-contractor to ensure that plant and equipment do not suffer any deterioration during storage.

Prior to installation all piping and equipment shall be thoroughly cleaned.

If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation, the Sub-contractor shall replace this equipment at his own cost.

2.06 Site Supervision
The Sub-contractor shall ensure that there is an English-speaking supervisor on the site at all times during normal working hours.

2.07 Installation
Installation of all special plant and equipment shall be carried out by the Sub-contractor under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent in accordance with the best standards of modern practice and to the relevant regulations and standards described under Clause 2.03 of this Section.

2.08 Testing
2.08.1 General
The Sub-contractor's attention is drawn to Part ‘C’ Clause 1.38 of the “Preliminaries and General Conditions”.

2.08.2 Material Tests
All material for plant and equipment to be installed under this Sub-contract shall be tested, unless otherwise directed, in accordance with the relevant B.S Specification concerned.

For materials where no B.S. Specification exists, tests are to be made in accordance with the best modern commercial methods to the approval of the Engineer, having regard to the particular type of the materials concerned.

The Sub-contractor shall prepare specimens and performance tests and analyses to demonstrate conformance of the various materials with the applicable standards.

If stock material, which has not been specially manufactured for the plant and equipment specified is used, then the Sub-contractor shall submit satisfactory evidence to the Engineer that such materials conform to the requirements stated herein in which case tests of material may be partially or completely waived.

Certified mill test reports of plates, piping and other materials shall be deemed acceptable.

2.08.3 Manufactured Plant and Equipment – Work Tests
The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.

The Sub-contractor shall give two week’s notice to the Engineer of the manufacturer's intention to carry out such tests and inspections.

The Engineer or his representative shall be entitled to witness such tests and inspections. The cost of such tests and inspections shall be borne by the Sub-contractor.

Six copies of all test and inspection certificates and performance graphs shall be submitted to the Engineer for his approval as soon as possible after the completion of such tests and inspections.

Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor’s own risk and should the test and inspection certificates not be approved, new tests may be ordered by the Engineer at the Sub-contractor’s expense.

2.08.4 Pressure Testing
All pipe work installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and the Sub-contractor shall give 48 hours notice to the Engineer of his intention to carry out such tests.

Any pipe work that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Sub-contractor and the specified tests shall then be applied.
The Sub-contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

2.09 Colour Coding
Unless stated otherwise in the Particular Specification all pipe work shall be color coded in accordance with the latest edition of B.S 1710 and to the approval of the Engineer or Architect.

2.10 Welding
2.10.1 Preparation
Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut or machined to suit the required type of joint. The prepared surface shall be free from all visible defects such as lamination, surface imperfection due to shearing or flame cutting operation, etc., and shall be free from rust scale, grease and other foreign matter.

2.10.2 Method
All welding shall be carried out by the electric arc processing using covered electrodes in accordance with B.S. 639.

Gas welding may be employed in certain circumstances provided that prior approval is obtained from the Engineer.

2.10.3 Welding Code and Construction
All welded joints shall be carried out in accordance with the following Specifications:
   a) Pipe Welding
      All pipe welds shall be carried out in accordance with the requirements of B.S.806.
   b) General Welding
      All welding of mild steel components other than pipework shall comply with the general requirements of B.S. 1856.

2.10.4 Welders Qualifications
Any welder employed on this Sub-contractor shall have passed the trade tests as laid down by the Government of Kenya.

The Engineer may require to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct the Sub-contractor to replace him by a qualified welder.
SECTION E:

PARTICULAR SPECIFICATIONS
FOR
PLUMBING AND DRAINAGE
<table>
<thead>
<tr>
<th>CLAUSE No.</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>General..................................................................</td>
<td>E-1</td>
</tr>
<tr>
<td>3.2</td>
<td>Materials and standards......................................</td>
<td>E-1</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Pipework and Fittings........................................</td>
<td>E-1</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Valves..................................................................</td>
<td>E-2</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Waste Fitment Traps...........................................</td>
<td>E-2</td>
</tr>
<tr>
<td>3.2.4</td>
<td>Pipe Supports..................................................</td>
<td>E-3</td>
</tr>
<tr>
<td>3.2.5</td>
<td>Sanitary Appliances...........................................</td>
<td>E-4</td>
</tr>
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<td>3.2.6</td>
<td>Pipe Sleeves...................................................</td>
<td>E-4</td>
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<tr>
<td>3.3</td>
<td>Installation....................................................</td>
<td>E-4</td>
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<tr>
<td>3.3.1</td>
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<td>3.3.2</td>
<td>Above Ground Installation....................................</td>
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<td>3.4</td>
<td>Testing Inspection............................................</td>
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<td>3.4.1</td>
<td>Site Tests – Pipework Systems..............................</td>
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<td>3.4.2</td>
<td>Site Test – Performance.....................................</td>
<td>E-6</td>
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<tr>
<td>3.5</td>
<td>Sterilisation of Hot and Cold Water System...............</td>
<td>E-6</td>
</tr>
</tbody>
</table>
3.1 **GENERAL**
This section specifies the general requirements for plant, equipment and materials forming part of the plumbing and drainage installations.

3.2 **MATERIALS AND STANDARDS**

3.2.1 **Pipe work and Fittings**
Pipe work materials are to be used as follows:

a) **CPVC Pipework**
The pipe work for the plumbing installation shall be chlorinated polyvinyl chloride (CPVC) tubing which meets the requirements of SDR 11 of ASTM F441 and be suitable for potable water installations.

The pipe fittings shall CPVC pipe fittings and shall meet or exceed the requirements of ASTM D2846. They will conform to ASTM F441 and ASTM F442, ASTM F1970. All changes in direction will be with standard bends or long radius fittings.

All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493 and primers that meet or exceed the requirements of ASTM F656. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement and primer shall be listed by NSF International for use with potable water, and approved by the pipe and fittings manufacturers.

b) **Galvanized Steel Pipe work**
Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with B.S. 1387 Medium Grade, with tapered pipe threads in accordance with B.S. 21. All fittings shall be malleable iron and manufactured in accordance with B.S. 143.

Pipe joints shall be screwed and socketed and sufficient coupling unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

Galvanized steel pipe work, 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant. All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter under Section ‘C’ of the Specification.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and B.S. 143 respectively.

c) **Copper Tubing**
All copper tubing shall be manufactured in accordance with B.S. 2871 from C.160 ‘Phosphorous De-oxidized Non-Arsenical Copper’ in accordance with B.S. 1172.

Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be with compression fittings manufactured in accordance with B.S. 864.

Short copper connection tubes between galvanized pipe work and sanitary fitments shall not be used because of the risk of galvanic action.

If, as may occur in certain circumstances, it is not possible to make the connection in any way than the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

d) **P.V.C. (Hard) Pressure Pipes and Fittings**
All P.V.C. pipes and fittings shall be manufactured in accordance with B.S. 3505: 1968.

Jointing
The method of jointing to be employed shall be that of solvent welding, using the pipe and manufacturer’s approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion.

Testing
Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure of the class of pipe used. Testing shall be carried out as soon as practical after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipe slowly to avoid risk of damage due to surge.
c) **A.B.S. Waste System**
Where indicated on the Drawings and Schedules, the Sub-contractor shall supply and fix A.B.S. waste pipes and fittings.

The pipes, traps and fittings shall be in accordance with the relevant British Standards, including B.S. 3943, and fixed generally in accordance with manufacturer's instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding, the manufacturer’s instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding. The manufacturer’s recommended method of joint preparation and fixing shall be followed.

Standard brackets, as supplied for use with this system, shall be used wherever possible. Where the building structure renders this impracticable the Sub-contractor shall provide purpose made supports, centres of which shall not exceed one meter.

Expansion joints shall be provided as indicated. Supporting brackets and pipe clips shall be fixed on each side of these joints.

f) **PVC Soil System**
The Sub-contractor shall supply and fix PVC soil pipes and fittings as indicated on the Drawings and Schedules. Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer’s instructions and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer whose fixing instructions shall be strictly adhered to.

Connections to WC pans shall be effected by the use of a WC connector, gasket and cover, fixed to suit pan outlet.

Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres.

The Sub-contractor shall be responsible for the joint into the Gully Trap on Drain as indicated on the Drawings.

3.2.2 **Valves**
a) **Draw-off Taps and Stop Valves (Up to 50mm Nominal Bore)**
Draw-off taps and valves up to 50mm nominal bore, unless otherwise stated or specified for attachment or connection to sanitary fitment shall be manufactured in accordance with the requirements of B.S.1010.

a) **Gate Valves**
All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.

All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.

The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

e) **Globe Valves**
All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

3.2.3 **Waste Fitment Traps**
a) **Standard and Deep Seal P & S Traps**
Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.
In certain circumstances, cast iron traps may be required for cast iron baths and in these instances bath traps shall be provided which are manufactured in accordance with the full requirements of B.S.1291.

b) Anti-Syphon Traps
Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littleshampton, Sussex, England.

The trade name for traps manufactured by this company is ‘Grevak’.

3.2.4 Pipe Supports

a) General
This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.

The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.

The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) CPVC Pipework
The pipe work for the plumbing installation shall be chlorinated polyvinyl chloride (CPVC) tubing which meets the requirements of SDR 11 of ASTM F441 and be suitable for potable water installations.

The pipe fittings shall CPVC pipe fittings and shall meet or exceed the requirements of ASTM D2846. They will conform to ASTM F441 and ASTM F442, ASTM F1970. All changes in direction will be with standard bends or long radius fittings.

All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493 and primers that meet or exceed the requirements of ASTM F656. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement and primer shall be listed by NSF International for use with potable water, and approved by the pipe and fittings manufacturers.

b) Steel and Copper Pipes and Tubes
Pipe runs shall be secured by clips connected to pipe angers, wall brackets, or trapeze type supports. ‘U’ bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.
An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

<table>
<thead>
<tr>
<th>Size Nominal Bores</th>
<th>Copper Tube to B.S. 659</th>
<th>Steel Tube to B.S. 1387</th>
</tr>
</thead>
<tbody>
<tr>
<td>15mm</td>
<td>1.25m</td>
<td>2.0m</td>
</tr>
<tr>
<td>20mm</td>
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<td>2.5m</td>
</tr>
<tr>
<td>25mm</td>
<td>2.0m</td>
<td>2.5m</td>
</tr>
<tr>
<td>32mm</td>
<td>2.5m</td>
<td>3.0m</td>
</tr>
<tr>
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The support spacing for vertical runs shall not exceed one and a half times the distances given for horizontal runs.

c) Expansion Joints and Anchors
Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.

Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The Sub-contractor when arranging his piping shall ensure that no expansion movements are transmitted directly to connections and flanges on pumps or other items of plant.

The Sub-contractor shall supply flexible joints to prevent vibrations and other movements being transmitted from pumps to piping systems or vice versa.

3.2.5 Sanitary Appliances
All sanitary appliances supplied and installed as part of the Sub-contract works shall comply with the general requirements of B.S. Code of Practice 305 and the particular requirements of the latest B.S. Specifications.

3.2.6 Pipe Sleeves
Main runs of pipework are to be fitted with sleeves where they pass through walls and floors. Generally the sleeves shall be of P.V.C. except where they pass through the structure, where they shall be mild steel. The sleeves shall have 6mm - 12mm clearance all around the pipe or for insulated pipework all around the installation. The sleeve will then be packed with slag wool or similar.

3.3 INSTALLATION
3.3.1 General
Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.
3.3.2  **Above Ground Installation**

a)  **Water Services**

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe.

Where falls are not shown on the Contract Drawings or stated elsewhere in the Specification, pipework shall be installed parallel to the lines of the buildings and as close to the walls, ceilings, columns, etc., as is practicable. All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly.

Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with sufficient number of unions to facilitate easy removal of valves and fittings and to enable alterations of pipework to be carried out without the need to cut the pipe.

Full allowances shall be made for the expansion and contraction of pipework, precautions being taken to ensure that any force produced by the pipe movements are not transmitted to valves, equipment or plant. All screwed joints to piping and fittings shall be made with P.T.F.E. tape.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b)  **Sanitary Services**

Soil, waste and vent pipe system shall be installed in accordance with the best standard of modern practice as described in B.S. 5572 to the approval of the Engineer.

The Sub-contractor shall be responsible for ensuring that all ground waste fittings are discharged to a gully trap before passing to the sewer via a manhole.

The Sub-contractor shall provide all necessary rodding and inspection facilities within the draining system in positions where easy accessibility is available. Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available.

The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The Sub-contractor shall be responsible for sealing the roof after installation of the stacks.

The open end of each stack shall be fitted with a plastic coated or galvanised steel wire guard.

Access for rodding and testing shall be provided at the foot of each stack.

c)  **Sanitary Appliances**

All sanitary appliances associated with the Sub-contract works shall be installed in accordance with the best standard of modern practice as described in C.P. 305 to the approval of the Engineer.

3.4  **TESTING AND INSPECTION**

3.4.1  **Site Tests – Pipework Systems**

a)  **Above Ground Internal Water Services Installation**

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.

If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.

During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

The Sub-contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced at the Sub-contractor’s expenses.
d) **Above Ground Soil Waste and Ventilation System**

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.

Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted. Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.

In all respects, tests shall comply with the requirements of B.S. 5572.

3.4.2 **Site Test – Performance**

Following satisfactory pressure test on the pipework system operational tests shall be carried out in accordance with the relevant B. S. Code of practice on the systems as a whole to establish that special valves, gauges, control, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.

All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe “sweating”, due to condensation will cause nuisance.

All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows:

i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.

ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

All lagging for cold and hot water pipes erected in crawl ways, ducts and above false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310 respectively to the approval of the Engineer.

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests.

The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

3.5 **STERILISATION OF COLD WATER SYSTEM**

All water distribution system shall be thoroughly sterilised and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilisation procedures shall be carried out by the Sub-contractor in accordance with the requirements of B.S. Code of Practice 301, Clause 409 and to the approval of the Engineer.
SECTION F:

PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHERS
1.0 PORTABLE FIRE EXTINGUISHER

1.1 General
The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers. The Sub-contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the Sub-contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

1.2 Scope of Works
The Sub-contractor shall supply, deliver, erect, test and commission all the portable fire extinguishers, Hose Reel, Fire Hydrant and Dry Riser which are called for in these Specifications and as shown on the Contract Drawings.

1.3 Water/CO2 Extinguishers
These shall be 9-litre water filled CO2 cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:
   a) Method of operation.
   b) The words ‘WATER TYPE’ (GAS PRESSURE) in prominent letters.
   c) Name and address of the manufacturer or responsible vendor.
   d) The nominal charge of the liquid in imperial gallons and litres.
   e) The liquid level to which the extinguisher is to be charged.
   f) The year of manufacture.
   g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 psi.).
   h) The number of British Standard ‘B.S’ 1382 or B.S. 5423: 1977.

1.4 Portable Carbon Dioxide Fire Extinguishers
These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 3326: 1960 and B.S. 5423: 1977.

The body of extinguisher shall be a seamless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.

The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of 206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers:
   a) The words “Carbon Dioxide Fire Extinguisher” and to include the appropriate nominal gas content.
   b) Method of operation.
   c) The words “Re-charge immediately after use”.
   d) Instructions for periodic checking.
   e) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
   f) The manufacturers name or identification markings

1.5 Dry Chemical Powder Portable Fire Extinguisher
The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470; 1972 and shall be suitably protected against corrosion.
The dry powder charge shall be not-toxic and retain its free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.

The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant. Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information
a) The word “Dry Powder Fire Extinguisher”
b) Method of operation in prominent letters.
c) The working pressure and the weight of the powder charge in Kilogramme.
d) Manufacturers name or identification mark
e) The words “RECHARGE AFTER USE” if rechargeable type.
f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.
g) The year of manufacture.
h) The Pressure to which the extinguisher was tested.
i) The number of this British Standard BS 3465 or BS 5423: 1977.
j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be supplied with the refill.

1.6 Air Foam Fire Extinguisher
These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications:

Cylinder: to B.S. 1449
Necking: to be 76mm outside diameter steel EN 3A 2 1/4 X 8TPI female thread.
Head cap: to be plastic moulding acetyl resin.
CO₂ Cylinder: to be 75gm P.V.C coated.
Internal Finish: to be polythene lining on phosphate coating.
External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

1.7 Fire Blanket
The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm and shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket.
1.8. Signage - Fire Instruction / Fire Exit

1.8.1 Fire instruction Notice

Print fire instruction on the Perspex plates with white colour background measuring 510mm length x 380mm width x 4mm thick as follows;

**FIRE INSTRUCTION NOTICE**

In the event of fire;

1. Raise the alarm by actuating the nearest alarm system point, Sound Siren / gong or **Shout Fire**

2. Attack fire using the nearest available equipment

3. Call nearest fire Brigade or Police 999 and inform your switchboard (PABX) Operator

4. Ensure that all personnel not involved in fire fighting evacuation to safety outside the building.

5. Close but **DO NOT LOCK** doors behind as you leave.

6. Evacuate the building using stairs or fire escapes. Do not use Lifts / escalators. Walk calmly. Avoid panic. Do not stop or return for personal belongings.

7. Assemble as per floor outside the building for roll call.

1.8.2 Fire Exit Sign

Print Fire Exit signs on the Perspex plate, 4mm thick with white colour background as follows:

1. Lettering **IN RED COLOR** of not less than 50mm in height.

2. A pendant sign bearing words, **FIRE EXIT** and with a directional arrow.

The sign must be capable of being read from both approaches to exit and so is double sided.

F-3
SECTION G:

BILL OF QUANTITIES

AND

SCHEDULE OF UNIT RATES
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<td>2. STATEMENT OF COMPLIANCE</td>
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<td>3. BILLS OF QUANTITIES</td>
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</table>
1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.

2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including 16% VAT).

In accordance with Government policy, the 16% VAT and 3% Withholding Tax shall be deducted from all payments made to the Tenderer, and the same shall be forwarded to the Kenya Revenue Authority (KRA).

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part there of.

4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere. Otherwise alternative brands of equal and approved quality will be accepted.

Should the sub-contractor install any material not specified here in before receiving written approval from the Project Manager, the sub-contractor shall remove the material in question and, at his own cost, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the Form of Tender for the tender to be deemed valid.

6. Tenderers must enclose, together with their submitted tenders, detailed manufacturer’s Brochures detailing Technical Literature and specifications on all the equipment they intend to offer.
1. **Statement of Compliance**

a) I confirm compliance of all clauses of the General Conditions, General Specifications and Particular Specifications in this tender.

b) I confirm I have not made and will not make any payment to any person, which can be perceived as an inducement to win this tender.

Signed: …………………………………… *for and on behalf of the Tenderer*

Date: …………………………

Official Rubber Stamp: ………………………………………………………………………
BILLS No. 1

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor’s Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

The Bills of Quantities are divided generally into three sections:-

a. Preliminaries – Bill 1

Sub-contractors preliminaries are as per those described in section C – sub-contractor preliminaries and conditions of contractor. The sub-contractor shall study the conditions and make provision to cover their cost in this Bill. The number of preliminary items to be priced by the Tenderer has been limited to tangible items such as site office, temporary works and others. However the Tenderer is free to include and price any other items he deems necessary taking into consideration conditions he is likely to encounter on site.

b. Installation Items – Other Bills

i. The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications.

ii. The unit of measurements and observations are as per those described in clause 3.05 of the section

c. Summary

The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The sub-contract shall insert his totals and enter his grand total tender sum in the space provided below the summary. This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document.
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<td>37</td>
<td>Supervision by Engineer and Site Meetings Clause 1.67</td>
<td>60</td>
<td></td>
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</tr>
<tr>
<td>38</td>
<td>Allow for profit and Attendance for the above</td>
<td>70</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>39</td>
<td>Amendment to Scope of Sub-contract Works Clause 1.68</td>
<td>80</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>40</td>
<td>Contractor Obligation and Employers Obligation clause 1.69(see appendix page C- 24)</td>
<td>90</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>41</td>
<td>Any other preliminaries;</td>
<td>100</td>
<td></td>
<td></td>
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</table>

Subtotal above

<p>| | |</p>
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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Subtotal brought forward from page G-4</td>
<td></td>
</tr>
<tr>
<td>Subtotal brought forward from page G-5</td>
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</table>

**TOTAL FOR BILL NO. 1- PRELIMINARIES CARRIED FORWARD TO PRICE MAIN SUMMARY**

G-6
SECTION H:

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED
# CONTENTS

<table>
<thead>
<tr>
<th>CLAUSE No.</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GENERAL NOTES TO THE TENDERER</td>
<td>(i)</td>
</tr>
<tr>
<td>2. TECHNICAL SCHEDULE</td>
<td>H-1</td>
</tr>
</tbody>
</table>
TECHNICAL SCHEDULE

1. **General Notes to the Tenderer**

1.1 The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.

1.2 The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer’s literature shall be accepted. Failure to comply with this may have his tender disqualified.

1.3 Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer.
TECHNICAL SCHEDULE

The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT** comprehensive manufacturer’s technical brochures and performance details for all items listed in this schedule (fill forms attached).

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>MANUFACTURER</th>
<th>COUNTRY OF ORIGIN</th>
<th>REMARKS (Catalogue No. etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Borehole Drilling Works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Borehole pump</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Gate valves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Water meter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pump control panel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>GMS pipes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Air Conditioning Works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>VRF. Air Conditioning (V.A.C) System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Refrigerant (for V.A.C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>PC Based Controller Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Plumbing &amp; Drainage Works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Water Closet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Wash hand basin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Kitchen sink</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>CPVC Pipes</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td>Gate Valves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Solar Water Heating Works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Solar Panels and Hot Water Storage Cylinder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Solar Header Tank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Solar Water Heating Works</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Medical Sink</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Scrub-up Trough &amp; Fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Sluice Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Catalogue must be attached for all the items in the schedule of material above
SECTION I:

DRAWING SCHEDULE
<table>
<thead>
<tr>
<th>CLAUSE No.</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DRAWING SCHEDULE</td>
<td>1-1</td>
</tr>
</tbody>
</table>
**DRAWING SCHEDULE:**

| As shall be provided during project implementation. |
### 2 No. 2 BEDROOM STAFF HOUSES AT MPEKETONI
#### SANITARY FITTINGS

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.

**Note:**

(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.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Close-Coupled Water Closet (WC)</td>
<td>4</td>
<td>No</td>
<td>9,000.00</td>
<td>36,000.00</td>
</tr>
<tr>
<td></td>
<td>Close-coupled water closet suite in approved colour complete with horizontal outlet to BS 3402 with 7.5 litre valveless ceramic cistern and fittings including siphon, 15mm diameter bottom inlet ball valve, 20mm diameter side overflow, plastic flush bend, inlet connection, Chrome plated lever and heavy plastic seat and cover with chrome plated hinges. As ideal standard, pan model or approved equivalent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Pedestal Wash Hand Basin (WHB)</td>
<td>4</td>
<td>No</td>
<td>7,000.00</td>
<td>28,000.00</td>
</tr>
<tr>
<td></td>
<td>Pedestal wash hand basin size 460 x 350mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, pedestal, chrome plated mixer tap as Cobra model and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. All to be as ideal standard or equal and approved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Toilet Roll Holder</td>
<td>4</td>
<td>No</td>
<td>625.00</td>
<td>2,500.00</td>
</tr>
<tr>
<td></td>
<td>Chrome plated wall mounted toilet roll holder as ideal standard or equal and approved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Robe Hook</td>
<td>4</td>
<td>No</td>
<td>300.00</td>
<td>1,200.00</td>
</tr>
<tr>
<td></td>
<td>Chrome plated robe hook mounted with concealed screws. To be as Ideal Standard or equal and approved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Mirrors</td>
<td>4</td>
<td>No</td>
<td>3,500.00</td>
<td>14,000.00</td>
</tr>
<tr>
<td></td>
<td>6mm thick polished plate glass silver backed mirror with bevelled edges, size 450 x 450mm, plugged and screwed to wall with 4No. chrome plated dome capped screws. The mirror shall rest against a layer of 5mm thick foam.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Carried forward to next Page**
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Flexible Tubing</td>
<td>8</td>
<td>No</td>
<td>1,200.00</td>
<td>9,600.00</td>
</tr>
<tr>
<td></td>
<td>15mm diameter x 300mm long flexible connectors complete with integral chrome plated angle valve for connecting the sanitary fitting to water supply. To be as Cobra or equal and approved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Single Bowl Single Drainer Kitchen Sink</td>
<td>4</td>
<td>No</td>
<td>20,000.00</td>
<td>80,000.00</td>
</tr>
<tr>
<td></td>
<td>Single bowl single drainer stainless steel kitchen sink of size 1000 x 500mm as manufactured by ASL or equal and approved. The bowl size to be 430 x 420 x 150mm deep complete with chrome plated 40mm waste fittings, plugs, chain stays, overflow, 1No. 15mm diameter chrome plated sink bibtap as ideal standard, Cobra model, heavy duty plastic bottle trap with 75mm deep seal and chain waste fitting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Shower Fittings</td>
<td>4</td>
<td>No</td>
<td>1,700.00</td>
<td>6,800.00</td>
</tr>
<tr>
<td></td>
<td>2No. concealed shower stop corks, adjustable shower rose and chrome plated bib tap. All to be as Cobra or equal and approved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Soap Dish for Shower</td>
<td>4</td>
<td>No</td>
<td>2,500.00</td>
<td>10,000.00</td>
</tr>
<tr>
<td></td>
<td>Recessed built in soap tray in Vitreous China of size: 165 x 150mm in approved colour as ideal standard or equal and approved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Towel Rail</td>
<td>4</td>
<td>No</td>
<td>4,000.00</td>
<td>16,000.00</td>
</tr>
<tr>
<td></td>
<td>Chrome plated 20mm diameter x 600mm long towel rail and brackets as one piece, plugged and screwed into the wall. The fitting shall be as Ideal Standard or equal and approved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Fire Blanket</td>
<td>4</td>
<td>No</td>
<td>9,000.00</td>
<td>36,000.00</td>
</tr>
<tr>
<td></td>
<td>Fire blanket made of cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm. It shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket to BS 1721.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Carried to Collection Page

516,400.00
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal Plumbing Works</strong></td>
<td>Supply, deliver and install pipes, tubing and fittings as described and shown on the drawings. The pipes shall be PN 25 PPR pipes where exposed to adverse weather condition and all conforming to the current European standards for PPR installations and to the Engineers approval, pipe jointing shall be by polyfusion or use of 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, crossovers, couplings, clippings, connectors, joints etc. 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. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>20mm diameter pipework</td>
<td>30</td>
<td>Lm</td>
<td>250.00</td>
<td>7,500.00</td>
</tr>
<tr>
<td>B</td>
<td>25mm diameter pipework</td>
<td>40</td>
<td>Lm</td>
<td>250.00</td>
<td>10,000.00</td>
</tr>
<tr>
<td><strong>Bends</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>20mm diameter bend</td>
<td>12</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>25mm diameter bend</td>
<td>16</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tees</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>20mm equal tee</td>
<td>8</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>25mm equal tee</td>
<td>4</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reducers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>25 x 20mm diameter reducer</td>
<td>4</td>
<td>No.</td>
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<tr>
<td><strong>Threaded Brass Tee</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>25mm male/female threaded brass tee</td>
<td>4</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Threaded Brass Elbow/Bend</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>20mm male/female threaded brass elbow/bend</td>
<td>4</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>25mm male/female threaded brass elbow/bend</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Threaded Brass Adapter</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>20mm male/female threaded brass adapter</td>
<td>4</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total carried forward to next page</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
## Plumbing, Drainage Works

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total brought down from previous page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Valves</strong></td>
<td>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 joints to steel tubing and complete with round male threaded transition fittings. The gate valve to be as PEGLER or approved equivalent.</td>
<td>A</td>
<td>2</td>
<td>No.</td>
<td></td>
</tr>
<tr>
<td><strong>Ditto but for 20mm diameter</strong></td>
<td></td>
<td>B</td>
<td>2</td>
<td>No.</td>
<td></td>
</tr>
<tr>
<td><strong>Unions</strong></td>
<td>25mm diameter pipe union</td>
<td>C</td>
<td>2</td>
<td>No.</td>
<td></td>
</tr>
<tr>
<td><strong>Water Storage Tank</strong></td>
<td>Vertical close end plastic moulded tank of capacity 920 litres (200 gallons) and diameter 1300 x 860mm high. The tank to be assembled complete with cover and having screwed connections for inlet, outlet, overflow, medium pressure ball valve, drain pipes and any other necessary item for its proper functioning. The tank shall be mounted on a platform and shall be as ROTO Model or approved equivalent.</td>
<td>D</td>
<td>4</td>
<td>No.</td>
<td></td>
</tr>
<tr>
<td><strong>Water Meter</strong></td>
<td>Allow for 50mm check water meter as ‘Kent’ or approved equivalent.</td>
<td>E</td>
<td>4</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Water Meter Chamber</strong></td>
<td>Meter chamber size 450x450x600mm deep with 100mm concrete (1: 3: 6) base 50mm block sides rendered all round in cement and sand (1:4) and with approved hinged and flanged cast iron cover and frame including all necessary excavation, disposal and formwork.</td>
<td>F</td>
<td>4</td>
<td>No.</td>
<td></td>
</tr>
</tbody>
</table>

### Total Carried to Collection Page
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>INTERNAL FOUL WATER DRAINAGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>MuPVC and uPVC Waste and Soil pipework</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100mm diameter heavy gauge golden brown UPVC pipe</td>
<td>50</td>
<td>Lm</td>
<td>420</td>
<td>21000</td>
</tr>
<tr>
<td>B</td>
<td>100mm diameter heavy gauge grey UPVC pipe</td>
<td>12</td>
<td>Lm</td>
<td>420</td>
<td>5040</td>
</tr>
<tr>
<td>C</td>
<td>50mm diameter waste pipe</td>
<td>12</td>
<td>Lm</td>
<td>250</td>
<td>3000</td>
</tr>
<tr>
<td>D</td>
<td>40mm diameter waste pipe</td>
<td>12</td>
<td>Lm</td>
<td>250</td>
<td>3000</td>
</tr>
<tr>
<td>E</td>
<td>32mm diameter waste pipe</td>
<td>16</td>
<td>Lm</td>
<td>250</td>
<td>4000</td>
</tr>
<tr>
<td></td>
<td><strong>Bends</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>100mm diameter bend with access</td>
<td>8</td>
<td>No.</td>
<td>420</td>
<td>3360</td>
</tr>
<tr>
<td>G</td>
<td>100mm diameter long radius bend</td>
<td>8</td>
<td>No.</td>
<td>420</td>
<td>3360</td>
</tr>
<tr>
<td>H</td>
<td>100mm diameter short radius bend</td>
<td>4</td>
<td>No.</td>
<td>420</td>
<td>1680</td>
</tr>
<tr>
<td>I</td>
<td>100mm diameter sweep bend</td>
<td>4</td>
<td>No.</td>
<td>420</td>
<td>1680</td>
</tr>
<tr>
<td>J</td>
<td>50mm diameter sweep bend</td>
<td>2</td>
<td>No.</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>K</td>
<td>40mm diameter sweep bend</td>
<td>8</td>
<td>No.</td>
<td>250</td>
<td>2000</td>
</tr>
<tr>
<td>L</td>
<td>32mm diameter sweep bend</td>
<td>2</td>
<td>No.</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td><strong>Tees</strong></td>
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<tr>
<td>M</td>
<td>100mm diameter sweep tee</td>
<td>2</td>
<td>No.</td>
<td>420</td>
<td>840</td>
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<tr>
<td>N</td>
<td>50mm diameter sweep tee</td>
<td>2</td>
<td>No.</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>O</td>
<td>40mm diameter sweep tee</td>
<td>2</td>
<td>No.</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td>P</td>
<td>32mm diameter sweep tee</td>
<td>8</td>
<td>No.</td>
<td>250</td>
<td>2000</td>
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**Total carried forward to next page**
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100mm diameter access cap</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>50mm diameter access cap</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>40mm diameter access cap</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>32mm diameter access cap</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Access Caps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>100mm diameter WC connector</td>
<td>2</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>100 x 50mm diameter floor trap and grating</td>
<td>8</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Standard 300 x 300 x 450mm masonry gully trap complete with 125mm thick reinforced concrete cover.</td>
<td>8</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>WC Connectors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>100mm diameter weathering slate and apron.</td>
<td>1</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>100mm diameter vent cowl</td>
<td>1</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Traps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Man-hole or inspection chamber size 600 x 450 mm by approximately 750mm deep using 200mm thick base (concrete class N15) with 250mm thick benching including forming drain channels, and 200mm thick solid concrete block walling, including 15mm internal plaster and top slab/screed, including pit digging, backfilling, carting away surplus and making good.</td>
<td>8</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Man-hole frame (light duty) in cast iron size 0.6 x 0.45m or PVC with recessed cover with concrete infill, finished to approval.</td>
<td>8</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Test and commission the entire installation to the satisfaction of the engineer</td>
<td>1</td>
<td>Item</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total brought down from previous page**

**Total carried forward to collection page**
### Plumbing, Drainage Works

**ROOF RAINWATER DRAINAGE**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate (Kshs)</th>
<th>Amount (Kshs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supply, deliver and install the following UPVC, MUPVC fittings to manufactures printed instructions and manufactured by reputable manufacturers. Tenderers must allow in their pipework/gutter prices for all the couplings, clippings, connectors, joints etc. 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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>65mm diameter heavy gauge grey UPVC down pipe</td>
<td>12</td>
<td>Lm</td>
<td>350</td>
<td>4200</td>
</tr>
<tr>
<td>B</td>
<td>100mm dia. UPVC external stop end as 'Flopast' to complete the gutter run.</td>
<td>24</td>
<td>No.</td>
<td>150</td>
<td>3600</td>
</tr>
<tr>
<td>C</td>
<td>100mm dia. UPVC fascia board brackets as 'Flopast' spaced at a maximum of one metre apart on straight gutter runs. Angles and stopends should have a fascia bracket within 150mm of the fitting.</td>
<td>80</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>100mm dia. UPVC running outlets as 'Flopast'</td>
<td>4</td>
<td>No.</td>
<td>300</td>
<td>1200</td>
</tr>
<tr>
<td>E</td>
<td>100mm dia. UPVC union brackets as 'Flopast' to join to next gutter length in order to build up a gutter run.</td>
<td>80</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>100mm dia. UPVC ballon outlet guards as 'Flopast' for leaf or debris protection</td>
<td>4</td>
<td>No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Square Line 114mm/65mm Rainwater System gutter complete</td>
<td>160</td>
<td>Lm</td>
<td></td>
<td>51200</td>
</tr>
<tr>
<td>H</td>
<td>Down pipe shoe outlet at the base of the pipe. A supporting pipe clip should be used on shoes.</td>
<td>4</td>
<td>No.</td>
<td></td>
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</table>

**Total Carried Forward to Collection Page**

---

G-13
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount (Kshs)</th>
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</thead>
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<tr>
<td>1</td>
<td>Total for Preliminaries Brought Forward from page .................................. G-6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Total for Sanitary Fittings brought forward from page ................................ G-8</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Total for Internal Plumbing brought forward from page ................................ G-10</td>
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<tr>
<td>4</td>
<td>Total for Internal Drainage brought forward from page ................................ G-12</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Total for Rainwater Water Harvesting brought forward from page .................... G-13</td>
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</tbody>
</table>

**Total for Plumbing and Drainage Carried Forward to Summary Page**
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>UNIT</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PRIME COST AND PROVISIONAL SUMS</td>
<td></td>
<td></td>
<td></td>
<td>SUM</td>
</tr>
<tr>
<td></td>
<td>Allow a provisional Sum of Kshs One Million Five Hundred Thousand (Kshs 1,500,000.00) only for Contigencies</td>
<td></td>
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<td>SUM</td>
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<tr>
<td>B</td>
<td>Allow a provisional Sum of Kshs One Million (Kshs 1,000,000.00) only for External works</td>
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<td></td>
<td>SUM</td>
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<tr>
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<td>Total of Provisional Sums Carried to Main Summary</td>
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<tr>
<td>ITEM</td>
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<tr>
<td>1</td>
<td>PARTICULAR PRELIMINARIES</td>
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<tr>
<td>3</td>
<td>2NO.TWIN TWO BEDROOM STAFF HOUSING</td>
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<tr>
<td>4</td>
<td>MECHANICAL WORKS</td>
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<tr>
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<td>ELECTRICAL WORKS</td>
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<tr>
<td>6</td>
<td>PRIME COST AND PROVISIONAL SUMS</td>
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</table>

TOTAL CARRIED TO FORM OF TENDER  KSHS

CONTRACTORS NAME ,.................................................................
ADDRESS ,.................................................................................
.........................................................................................
DATE ,.........................................................................................
SIGNATURE ,...................................................................................

WITNESS'S NAME ,..............................................................................
ADDRESS ,.........................................................................................
.........................................................................................
DATE ,.........................................................................................
SIGNATURE ,..................................................................................