REPUBLIC OF KENYA

COUNTY GOVERNMENT OF KIRINYAGA
P.O. BOX 260 - 10304,
KUTUS.

DEPARTMENT OF LANDS, HOUSING AND URBAN DEVELOPMENT

OPEN TENDER

FOR

PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP).

TENDER NO: CGK/SCM/LH&UD/001/2020-2021

County Government of Kirinyaga
P.O. Box 260-10304
KUTUS
Website: www.Kirinyaga.go.ke

APRIL, 2021

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SECTION I - INVITATION FOR TENDER

TENDER NAME: PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP).

TENDER NO: CGK/SCM/LH&UD/001/2020-2021

The County Government of Kirinyaga invites sealed bids from all, interested, eligible and qualified companies for the above-mentioned works.

Interested and eligible candidates may obtain detailed information and inspect the tender documents at Kirinyaga County Headquarters, Kutus, Supply Chain Management Office, Room B15 during normal working hours. Interested and eligible tenderers may obtain further information from and inspect the tender documents at Director Supply Chain Management Office, 1st Floor, Kirinyaga County Headquarters, Kutus during normal working hours.

A complete set of tender documents may be obtained by interested bidders from the Public Procurement Information Portal website http://tenders.go.ke or the County website www.kirinyaga.go.ke. Bidders who download the documents from the website **MUST** forward their particulars (Name, contacts, physical address and the tender no./ description) immediately to procurement@kirinyaga.go.ke for recording and any further clarifications or addendums.

Tender **MUST** be accompanied by an **Original bid security** of **Ksh 500,000.00** (Five Hundred Thousand Shillings only) issued in Kenya shillings or a freely convertible currency and in the form of bank guarantee, or an insurance guarantee from PPRA Approved Insurance Company in the format provided valid for an additional 30 days beyond the tender validity period from the date of tender opening.

Prices quoted should be inclusive of all taxes and delivery costs and must be expressed in Kenya shillings and shall remain valid for a period of ***120 days*** from the closing date of the tender.

Failure to submit an original hard copy of the tender securing declaration form/ Bid Security of not less than the indicated amount or equivalent amount in a freely convertible currency, at Kirinyaga County Headquarters, Kutus, Supply Chain Management Office, Room B15 during normal working hours before the closing date of the bid shall lead to disqualification of the bid. The Bid Security must be in a sealed envelope bearing the Tender Description and addressed to the address indicated above

Tenderers shall ensure that the submitted bid (documents) is (are) serialized/paginated, well bound and intact i.e. (each page in the submitted bid shall have serial identification).

Duly completed bid documents are to be enclosed in plain sealed envelopes, marked with the Tender No." and Tender Description" be addressed to;

The County Secretary & Head of Public Service,
County Headquarters,
P.O Box 260 – 10304,
Kutus.

and dropped in the Tender Box situated at the Kirinyaga County Headquarters **1st floor** so as to be received on or before, on or before **Wednesday 28th April, 2021 AT 11.00 A.M**

Tenders will be opened immediately thereafter in the presence of the bidders or their representatives who choose to attend the opening at The County Headquarters, 3rd Floor, Conference Room.

Late bids **SHALL NOT** be accepted.

HEAD, SUPPLY CHAIN MANAGEMENT
FOR: COUNTY SECRETARY

SECTION II - INSTRUCTIONS TO TENDERERS

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SECTION II - INSTRUCTION TO TENDERERS

A. GENERAL

2.1 Scope of Bid

2.1.1. The Employer, as defined in the Conditions of Contract Part II hereinafter "the Employer" wishes to receive bids for the construction of works as described in Section 1, clause 102 of the Special Specifications –"Location and extent of the Works"

2.1.2. The successful bidder will be expected to complete the Works within the period stated in the Appendix to Bid from the date of commencement of the Works.

2.1.3. Throughout these bidding documents, the terms bid and BID and their derivatives (bidder/Bidder, bid/bided, bidding/Bidding etc) are synonymous, and day means calendar day. Singular also means plural.

2.2 Source of Funds

The source of funding is through County Government of Kirinyaga NARIGP.

2.3 Corrupt Practices

2.1.4. The Government requires that the bidders, suppliers, sub-contractors and supervisors observe the highest standard of ethics during the procurement and execution of such contracts. In this pursuit of this policy, the government;

a) Defines for the purposes of this provision, the terms set forth below as follows:
(i) *"corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in the execution, and*
(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the Employer of the benefits of free and open competition

b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract, and

c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a government contract if it at any times determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government financed contract.

2.4 Eligibility

This invitation to tender is open to all tenderers who are qualified as stated in the appendix.

2.5 Qualification Requirements

To be qualified for award of Contract, the tenderer shall provide evidence satisfactory to the Employer of their eligibility under Sub clause 2.4. above and of their capability and adequacy of resources to effectively carry out the subject Contract. To this end, the tenderer shall be required to update the following information already submitted during prequalification: -

(a) Details of experience and past performance of the tenderer on the works of a similar nature and details of current work on hand and other contractual commitments.

(b) The qualifications and experience of key personnel proposed for administration and execution of the contract, both on and off site.

(c) Major items of construction plant and equipment proposed for use in carrying out the Contract. Only reliable plaint in good working order and suitable for the work required of it shall be shown on this schedule. The tenderer will also indicate on this schedule when each item will be available on the Works. Included also should be a schedule of plaint, equipment and material to be imported for the purpose of the Contract, giving details of make, type, origin and CIF value as appropriate.

(d) Details of sub-contractors to whom it is proposed to sublet any portion of the Contract and for whom authority will be requested for such subletting in accordance with clause 4 of the Condition of Contract.

(e) A draft Program of Works in the form of a bar chart and Schedule of Payment which shall form part of the Contract if the tender is accepted. Any change in the Program or Schedule shall be subjected to the approval of the Engineer.

(f) Details of any current litigation or arbitration proceedings in which the tenderer is involved as one of the parties.

2.6 Joint Ventures

Tenders submitted by a joint venture of two or more firms as partners shall comply with the following requirements: -

(a) The tender, and in case of a successful tender, the Form of Agreement, shall be signed so as to be legally binding on all partners

(b) One of the partners shall be nominated as being in charge, and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners

(c) The partner in charge shall be authorized to incur liabilities and receive instructions for an on behalf of any and all partners of the joint venture and the entire execution of the Contract including payment shall be done exclusively with the partner in charge.

(d) All partners of the joint venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under (b) above as well as in the Form of Tender and the Form of Agreement (in case of a successful tender)

(e)A copy of the agreement entered into by the joint venture partners shall be submitted with the tender.

2.7 Cost of Tendering

2.7.1 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, regardless of the conduct or outcome of the tendering process.

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

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

2.8 Site Visit

2.8.1 Due to the ***COVID -19*** pandemic and consequently the Public Health directives issued, there shall be NO Pre -Tender Site Visits. However, bidders are encouraged to make separate arrangements to acquaint themselves with the site before submissions of their bids and can submit in writing any queries to the undersigned vide electronic means.

2.8.2 The bidders shall be responsible for the accuracy of their bids and bid proposals.

2.8.3 The bidder is requested as far as possible to submit any questions in writing or by cable, to reach the Employer not later than two weeks before the submission deadline. Any modification of the Bidding Documents which may become necessary as a result of questions raised or clarifications issued shall be made by the Employer exclusively through the issue of an Addendum published on the County website.

B. BIDDING DOCUMENTS

2.9 Tender Documents

2.9.1 The Tender documents comprise the documents listed here below and should be read together with any Addenda issued in accordance with Clause 7 of these instructions to tenderers.

(a) Invitation to Bid
(b) Instructions to Bidders and Conditions of Tender

(c) Appendix to Instruction to Tenderers
(d) Conditions of Contract - Part I
(e) Conditions of Contract - Part II
(f) Road Maintenance Manual (May 2010 Edition)
(g) Standard Specifications
(h) Special Specifications
(i) Form of Bid, Appendix to Form of Bid and Bid Security
(j) Bills of Quantities
(k) Schedules of Supplementary information
(l) Form of Contract Agreement
(m) Form of Performance Security
(n) Drawings
(o) BID Addenda (BID Notices)
(p) Declaration Form

2.9.2 The tenderer is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the tender documents. Failure to comply with the requirements for tender submission will be at the tenderer's own risk. Pursuant to clause 22 of Instructions to Tenderers, tenders which are not substantially responsive to the requirements of the tender documents will be rejected.

2.9.3 All recipients of the documents for the proposed Contract for the purpose of submitting a tender (whether they submit a tender or not) shall treat the details of the documents as "private and confidential".

2.10 Inquiries by tenderers

2.10.1 A tenderer making an inquiry relating to the tender document may notify the Employer in writing or by telex, cable or facsimile at the Employer's mailing address indicated in the Invitation to Tender. The Employer will respond in writing to any request for clarification which he receives earlier than 7 days prior to the deadline for the submission of tenders. Written copies of the Employer's response (including the query but without identifying the source of the inquiry) will be sent to all prospective tenderers who have purchased the tender documents.

2.10.2 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.

2.11 Amendment of Tender Documents

2.9.1 At any time prior to the deadline for submission of tenders the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective tenderer, modify the tender documents by issuing Addenda.

2.9.2 Any Addendum will be notified in writing or by cable, telex or facsimile to all prospective tenderers who have purchased the tender documents and will be binding upon them.

2.9.3 In order to allow prospective tenderers reasonable time in which to take the Addendum into account in preparing their tenders, the Employer may, at his discretion, extend the deadline for the submission of tenders.

C. PREPARATION OF BIDS

2.12 Language of Tender

2.12.1 The tender and all correspondence and documents relating to the tender exchanged between the tenderer and the Employer shall be written in the English language. Supporting documents and printed literature furnished by the tenderer with the tender may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the above stated language. For the purpose of interpretation of the tender, the English language shall prevail.

2.13 Documents Comprising the Tender

2.13.1 The tender to be prepared by the tenderer shall comprise:

a) Duly filled-in the Form of Bid and Appendix to form of bid;
b) Bid security;
c) Priced Bills of Quantities;
d) Schedules of information
e) Qualification Criteria
f) Any other materials required to be completed and submitted in accordance with the Instructions to Bidders embodied in these bidding documents.

2.13.2 The Forms, Bills of Quantities and Schedules provided in the tender documents shall be used without exception (subject to extensions of the schedules in the same format and to the provisions of clause 13.2 regarding the alternative forms of Tender Surety].

2.14 Tender Prices

2.14.1 All the insertions made by the tenderer shall be made in INK and the tenderer shall clearly form the figures. The relevant space in the Form of Tender and Bills of Quantities shall be completed accordingly without interlineations or erasures except those necessary to correct errors made by the tenderer in which case the erasures and interlineations shall be initialed by the person or persons signing the tender.

2.14.2 A price or rate shall be inserted by the tenderer for every item in the Bills of Quantities whether the quantities are stated or not. Items against which no rate or price is entered by the tenderer will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bills of Quantities.

2.14.3 The prices and unit rates in the Bills of Quantities are to be the full [all-inclusive] value of the Work described under the items, including all costs and expenses which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based. All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause prior to the deadline for submission of tenders, shall be included in the rates and prices and the total Tender Price submitted by the tenderer.

2.14.4 Each price or unit rate inserted in the Bills of Quantities should be a realistic estimate for completing the activity or activities described under that particular item and the tenderer is advised against inserting a price or rate against any item contrary to this instruction.

2.14.5 Every rate entered in the Bills of Quantities, whether or not such rate be associated with a quantity, shall form part of the Contract. The Employer shall have the right to call for any item of work contained in the Bills of Quantities, and such items of work to be paid for at the rate entered by the tenderer and it is the intention of the Employer to take full advantage of unbalanced low rates.

2.14.6 Unless otherwise specified the tenderer must enter the amounts representing 10% of the sub-total of the summary of the Bills of Quantities for Contingencies and Variation of Prices [V.O.P.] payments in the summary sheet and add them to the sub-total to arrive at the tender amount.

2.14.7 The tenderer shall furnish with his tender written confirmation from his suppliers or manufacturers of basic unit rates for the supply of items listed in the Conditions of Contract clause 70 where appropriate. The Employer may require the tenderer to justify such rates so obtained from the suppliers or manufacturers.

2.14.8 The rates and prices quoted by the tenderer are subject to adjustment during the performance of the Contract only in accordance with the Provisions of the Conditions of Contract. The tenderer shall complete the schedule of basic rates and shall submit with his tender such other supporting information as required under clause 70 of the Conditions of Contract Part II.

2.14.9 Contract price variations shall not be allowed within the first 12 months of the contract.

2.14.10 Where quantity contract variation is allowed, the variation shall not exceed 15% of the original contract quantity.

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

2.15 Currencies of Tender and Payment

2.15.1 Tenders shall be priced in Kenya Shillings and the tender sum shall be in Kenya Shillings.

2.16 Tender Validity

2.16.1 The tender shall remain valid and open for acceptance for a period of One twenty days (120) days from the specified date of tender opening or from the extended date of tender opening (in accordance with clause 7.4 here above) whichever is the later.

2.16.2 In exceptional circumstances prior to expiry of the original tender validity period, the Employer may request the tenderer for a specified extension of the period of validity. The request and the responses thereto shall be made in writing or by cable, telex or facsimile. A tenderer may refuse the request without forfeiting his Tender Surety. A tenderer agreeing to the request will not be required nor permitted to modify his tender, but will be required to extend the validity of his Tender Surety correspondingly.

2.17 Tender Security

2.17.1 The tenderer shall furnish as part of his tender, a Tender Security in the amount and form stated in the Appendix to Instructions to Tenderers.

2.17.2 The tender security shall not exceed 2 percent of the tender price.

2.17.3 The Tender Security shall be valid at least thirty (30) days beyond the tender validity period

2.17.4 Any tender not accompanied by an acceptable Tender Surety will be rejected by the Employer as non-responsive.

2.17.5 The Tender Sureties of unsuccessful tenderers will be returned as promptly as possible but not later than twenty-eight (28) days after expiration of the tender validity period. The Tender Surety of the successful tenderer will be returned upon the tenderer executing the Contract and furnishing the required Performance Security.

2.17.6 The Tender Surety may be forfeited:

a) if a tenderer withdraws his tender during the period of tender validity: or
b) in the case of a successful tenderer, if he fails, within the specified time limit
   i. to sign the Agreement, or
   ii. to furnish the necessary Performance Security
c) if a tenderer does not accept the correction of his tender price pursuant to clause 23.

2.18 No Alternative Offers

2.18.1 The tenderer shall submit an offer which complies fully with the requirements of the tender documents unless otherwise provided for in the appendix.

Only one tender may be submitted by each tenderer either by himself or as partner in a joint venture. A tenderer who submits or participates in more than one tender will be disqualified.

2.18.2 The tenderer shall not attach any conditions of his own to his tender. The tender price must be based on the tender documents. The tenderer is not required to present alternative construction options and he shall use without exception, the Bills of Quantities as provided, with the amendments as notified in tender notices, if any, for the calculation of his tender price. Any tenderer who fails to comply with this clause will be disqualified.

2.19 Format and Signing of Tenders

2.19.1 The complete tender shall be without alterations, interlineations or erasures, except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialed by the person of persons signing the tender.

D.SUBMISSION OF BIDS

2.20 Deadline for Submission of Tenders

2.20.1 The Tenderer shall seal the original and each copy of the tender in separate envelopes, duly marking the envelopes as **"ORIGINAL"** and **"COPY."** The envelopes shall then be sealed in an outer envelope.

2.20.2 The inner and outer envelopes shall:

(a) be addressed to the Procuring entity at the address given in the Invitation to Tender:

The County Secretary & Head of Public Service,
County Headquarters,
P.O Box 260 – 10304,
Kutus

(b) bear, tender number and name in the Invitation for Tenders and the words, "**DO NOT OPEN BEFORE," Wednesday 28th April, 2021 AT 11.00 A.M.**

2.20.3 The inner envelopes shall also indicate the name and address of the tenderer to enable the tender to be returned unopened in case it is declared "late".

2.20.4 If the outer envelope is not sealed and marked as required by paragraph 2.19.2, the Procuring entity will assume no responsibility for the tender's misplacement or premature opening.

2.21 Modification and Withdrawal of Tenders

2.21.1 The tenderer may modify or withdraw his tender after tender submission, provided that written notice of the modification or withdrawal is received by the Employer prior to prescribed deadline for submission of tenders.

2.21.2 The tenderer's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions for the submission of tenders, with the inner and outer envelopes additionally marked "MODIFICATION" or "WITHDRAWAL" as appropriate.

2.21.3 No tender may be modified subsequent to the deadline for submission of tenders.

2.21.4 No tender may be withdrawn in the interval between the deadline for submission of tenders and the period of tender validity specified on the tender form. Withdrawal of a tender during this interval will result in the forfeiture of the Tender Surety.

2.21.5 Subsequent to the expiration of the period of tender validity prescribed by the Employer, and the tenderer having not been notified by the Employer of the award of the Contract or the tenderer does not intend to conform with the request of the Employer to extend the period of tender validity, the tenderer may withdraw his tender without risk of forfeiture of the Tender Surety.

E. BID OPENING AND EVALUATION

2.22 Tender Opening

2.22.1 The Employer will open the tenders in the presence of the tenderers' representatives who choose to attend at the time and location indicated in the Letter of Invitation to Tender. The tenderers' representatives who are present shall sign a register evidencing their attendance.

2.22.2 Tenders for which an acceptable notice of withdrawal has been submitted, pursuant to clause 19, will not be opened. The Employer will examine the tenders to determine whether they are complete, whether the requisite Tender Sureties have been furnished, whether the documents have been properly signed and whether the tenders are generally in order.

2.22.3 At the tender opening, the Employer will announce the tenderer's names, total tender price, tender price modifications and tender withdrawals, if any, the presence of the requisite Tender Surety and such other details as the Employer,

at his discretion, may consider appropriate. No tender shall be rejected at the tender opening except for late tenders.

2.22.4 The Employer shall prepare minutes of the tender opening including the information disclosed to those present.

2.22.5 Tenders not opened and read out at the tender opening shall not be considered further for evaluation, irrespective of the circumstances.

2.23 Process to be Confidential

2.23.1 After the public opening of tenders, information relating to the examination, clarification, evaluation and comparisons of tenders and recommendations concerning the award of Contract shall not be disclosed to tenderers or other persons not officially concerned with such process until the award of Contract is announced.

2.23.2 Any effort by a tenderer to influence the Employer in the process of examination, evaluation and comparison of tenders and decisions concerning award of Contract may result in the rejection of the tenderer's tender.

2.24 Clarification of Tenders

2.24.1 To assist in the examination, evaluation and comparison of tenders, the Employer may ask tenderers individually for clarification of their tenders, including breakdown of unit prices. The request for clarification and the response shall be in writing or by cable, facsimile or telex, 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 arithmetical errors discovered by the employer during the evaluation of the tenders in accordance with clause 24.

2.24.2 No tenderer shall contact the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. If the tenderer wishes to bring additional information to the notice of the Employer, he shall do so in writing.

2.25 Determination of Responsiveness

2.25.1 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender is substantially responsive to the requirements of the tender documents.

2.25.2 For the purpose of this clause, a substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tender documents without material deviation or reservation. A material deviation or reservation is one which affects in any substantial way the scope, quality, completion timing or administration of the Works to be undertaken by the tenderer under the Contract, or which limits in any substantial way, inconsistent with the tender documents, the Employer's rights or the tenderers obligations under the Contract and the rectification of which would affect unfairly the

competitive position of other tenderers who have presented substantially responsive tenders.

2.25.3 Each price or unit rate inserted in the Bills of Quantities shall be a realistic estimate of the cost of completing the works described under the particular item including allowance for overheads, profits and the like. Should a tender be seriously unbalanced in relation to the Employer's estimate of the works to be performed under any item or groups of items, the tender shall be deemed not responsive.

2.25.4 A tender determined to be not substantially responsive will be rejected by the Employer and may not subsequently be made responsive by the tenderer by correction of the non-conforming deviation or reservation.

2.26 Correction of Errors

2.26.1 Tenders determined to be substantially responsive shall be checked by the Employer for any arithmetic errors in the computations and summations. Errors will be corrected by the Employer as follows:

(a) Where there is a discrepancy between the amount in figures and the amount in words, the amount in words will govern.

(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 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 Bills 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 Prime Cost 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 valuations 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 13.

2.27 Conversion to Single Currency

2.27.1 For compensation of tenders, the tender price shall first be broken down into the respective amounts payable in various currencies by using the selling rate or rates of the Central Bank of Kenya ruling on the date twenty-one (21) days before the final date for the submission of tenders.

2.27.2 The Employer will convert the amounts in various currencies in which the tender is payable (excluding provisional sums but including Day works where priced competitively) to Kenya Shillings at the selling rates stated in clause 25.1.

2.28 Evaluation and Comparison of Tenders

2.28.1 The Employer will evaluate only tenders determined to be substantially responsive to the requirements of the tender documents in accordance with clause 23.

2.28.2 In evaluating 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 24.

(b) Excluding Provisional Sums and provision, if any, for Contingencies in the Bills of Quantities, but including Day works where priced competitively.

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

2.28.4 Price adjustment provisions in the Conditions of Contract applied over the period of execution of the Contract shall not be taken into account in tender evaluation.

2.28.5 If the lowest evaluated tender is seriously unbalanced or front loaded in relation to the Employer's estimate of the items of work to be performed under the Contract, the Employer may require the tenderer to produce detailed price analyses for any or all items of the Bills of Quantities, to demonstrate the relationship between those prices, proposed construction methods and schedules. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in clause 29 be increased at the expense of the successful tenderer to a level sufficient to protect the Employer against financial loss in the event of subsequent default of the successful tenderer under the Contract.

2.28.6 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.

2.28.7 Preference where allowed in the evaluation of tenders shall not exceed 15%

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

2.28.9 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.

2.28.10 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.

2.28.11 Poor past performance shall not be used as an evaluation criterion unless specifically provided for in the appendix.

F. AWARD OF CONTRACT

2.29 Award Criteria

2.29.1 County Government of Kirinyaga will award the contract to the successful tenderer(s) whose tender has been determined to be substantially responsive and has been determined to have the highest combined technically and financially evaluated tender, provided further that the tenderer is determined to be qualified to perform the contract satisfactorily.

2.29.2 The determination will consider the tenderer financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the tenderers qualifications submitted by the tenderer, pursuant to paragraph 2.12.3 as well as such other information as County Government of Kirinyaga deems necessary and appropriate.

2.29.3 An affirmative determination will be a prerequisite for award of the contract to the tenderer. A negative determination will result in rejection of the Tenderer's tender, in which event County Government of Kirinyaga will proceed to the next lowest evaluated tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily

2.30 Notification of Award

2.30.1 Prior to the expiration of the period of tender validity prescribed by the Employer, the Employer will notify the successful tenderer by cable, telefax or telex and confirmed in writing by registered letter that his tender has been accepted. This letter (hereinafter and in all Contract documents called "Letter of

Acceptance") shall name the sum (hereinafter and in all Contract documents called "the Contract Price") which the Employer will pay to the Contractor in consideration of the execution and completion of the Works as prescribed by the Contract.

2.30.2 At the same time that the Employer notifies the successful tenderer that his tender has been accepted, the Employer shall notify the other tenderers that the tenders have been unsuccessful.

2.30.3 Within fourteen [14] days of receipt of the Form of Contract Agreement from the Employer, the successful tenderer shall sign the form and return it to the Employer together with the required Performance Security.

2.30.4 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.

2.31 Signing of Agreement

2.31.1 At the same time that the Employer notifies the successful bidder that its bid has been accepted, the Employer will send the bidder the Agreement in the form provided in the bidding documents, incorporating all agreements between the parties.

2.31.2 After 21 days of receipt of the Agreement, the successful bidder shall sign the Form of Agreement and return it to the Employer, together with the required performance security.

2.32 Performance Guarantee

2.32.1 Within twenty-eight [28] days of receipt of the notification of award from the Employer, the successful tenderer shall furnish the Employer with a Performance Security in the amount stated in the Appendix to Instructions to Tenderers and in the format stipulated in the Conditions of Contract.

2.32.2 The Performance Security to be provided by the successful tenderer shall be an unconditional Bank Guarantee issued at the tenderer's option by a reputable Bank approved by the Employer and located in the Republic of Kenya and shall be divided into two elements namely, a performance security payable in foreign currencies (based upon the exchange rates determined in accordance with clause 60(5) of the Conditions of Contract) and a performance security payable in Kenya Shillings. The value of the two securities shall be in the same proportions of foreign and local currencies as requested in the form of foreign currency requirements.

2.32.3 Failure of the successful tenderer to lodge the required Performance Security shall constitute a breach of Contract and sufficient grounds for the annulment of the award and forfeiture of the Tender Security and any other remedy under the Contract. The Employer may award the Contract to the next ranked tenderer.

2.33 Advance Payment

2.33.1 An advance payment, if approved by the Employer, shall be made under the Contract, if requested by the Contractor, in accordance with clause 60(1) of the Conditions of Contract. The Advance Payment Guarantee shall be denominated in the proportion and currencies named in the form of foreign currency requirements. For each currency, a separate guarantee shall be issued. The guarantee shall be issued by a Bank located in the Republic of Kenya, or a foreign Bank through a correspondent Bank located in the Republic of Kenya, in either case subject to the approval of the Employer.

2.34 Contract Effectiveness

2.34.1 The Contract will be effective only upon signature of the Agreement between the Contractor and the Employer.

APPENDIX TO INSTRUCTIONS TO TENDERERS

Notes on the Appendix to Instructions to Tenderers

The following appendix to instructions to tenderers shall complement or amend the provisions of the instructions to tenderers (Section II). Wherever there is a conflict between the provisions of the instructions to tenderers and the provisions of the appendix, the provisions of the appendix herein shall prevail over those of the instructions to tenderers.

ITT Clause Number	**Amendments of, and Supplements to, Clauses in the Instruction to Tenderers**
2.4	*Eligible tenderers: is open to all eligible tenderers*
2.5	Particulars of eligibility and qualifications documents of evidence required. Copies of: i) **Certificate of Incorporation** **ii) Certificate of valid tax compliance**
2.8	**Site Visit:** *The bidder is informed Due to the **COVID -19** pandemic and consequently the Public Health directives issued, there shall be NO Pre -Tender Site Visits. However, bidders are encouraged to make separate arrangements to acquaint themselves with the site before submissions of their bids and can submit in writing any queries to the undersigned vide electronic means*
2.12	The Language of all correspondence and documents related to the Tender is**: English**
2.15	Prices shall be quoted in **Kenya Shillings**
2.16	The Tender validity period shall be **120 days.**
2.17	**The Tender Security shall be:** *accompanied by a **Bid Security of Kshs. 500,000** from a reputable bank or insurance firm approved by PPRA in the format provided valid for an additional 30 days beyond the tender validity period.*
2.20	Indicate day, date and time of closing: **Wednesday 28th April, 2021 AT 11.00 A.M.**
2.28	Tenderers are required to submit the following MANDATORY DOCUMENTS which will be used during PRELIMINARY EXAMINATION to determine responsiveness, notwithstanding any other requirement in the tender document: **1. Copy of Certificate of Incorporation/Business Name certified by commissioner of oaths** **2. Certificate A copy of valid Tax compliance Certificate certified by commissioner of Oaths (will be checked with KRA TCC.)** **3. A Certified Copy of RECENT CR 12 Form (12 Months) from Registrar of company. For AGPO Tenders BIDDERS should be provided a valid certificate of Registration from Treasury for the relevant special group and National ID(s) for the directors** **4. Registration with National Construction Authority (NCA) and above as a Building Works contractor valid at the date of tender of submission.** **5. Copy of Valid Contractors Annual Practicing License from National Construction Authority (NCA) as a Building Works contractor**

	6. Financial audited accounts for two (2) previous years endorsed, signed and stamped by a registered external auditor. **7. Duly filled, signed and stamped confidential business questionnaire by an individual entrusted with the powers of attorney** **8. Duly filled, signed and stamped Priced Bills of Quantities.** **9. Duly filled, signed and stamped Form of Tender** **10. Duly filled, signed and stamped self-declaration forms (r 62).** **11. Duly filled, signed and stamped Tender Securing Declaration Form.** **12. Tenderers shall ensure that the submitted bid (documents) is (are) serialized/paginated, intact and in PDF format. (i.e each page in the submitted bid shall have serial identification and uploaded in PDF format)**
2.29	Award Criteria: *The highest combined technically and financially evaluated bidder*
2.32	*Indicate particulars of performance security****: 10% Performance Security will be required.***

EVALUATION PROCESS / EVALUATION CRITERIA

STAGE 1. MANDATORY/PRELIMINARY REQUIREMENTS

The following **must** be submitted together with the Bid

1. All entries must be typed or written in ink. Mistakes must not be erased but should be crossed out and corrections made and initialed by the persons signing the tender.

Bidders shall attach copies of the under listed documents and Must be certified (signed and stamped) by commissioner of oaths/advocate registered in Kenya:

1. **Copy of Certificate of Incorporation/Business Name certified by commissioner of oaths**
2. **Certificate A copy of valid Tax compliance Certificate certified by commissioner of Oaths (will be checked with KRA TCC.)**
3. **A Certified Copy of RECENT CR 12 Form (12 Months) from Registrar of company. For AGPO Tenders BIDDERS should be provided a valid certificate of Registration from Treasury for the relevant special group and National ID(s) for the directors**
4. **Registration with National Construction Authority (NCA) and above as a Building Works contractor valid at the date of tender of submission.**
5. **Copy of Valid Contractors Annual Practicing License from National Construction Authority (NCA) as a Building Works contractor**
6. **Financial audited accounts for two (2) previous years endorsed, signed and stamped by a registered external auditor.**
7. **Duly filled, signed and stamped confidential business questionnaire by an individual entrusted with the powers of attorney**
8. **Duly filled, signed and stamped Priced Bills of Quantities.**
9. **Duly filled, signed and stamped Form of Tender**
10. **Duly filled, signed and stamped self-declaration forms (r 62).**
11. **Duly filled, signed and stamped Tender Securing Declaration Form.**
12. **Tenderers shall ensure that the submitted bid (documents) is (are) serialized/paginated, intact and in PDF format. (i.e. each page in the submitted bid shall have serial identification and uploaded in PDF format**

Bidders that will not comply with the above criteria shall be considered non-responsive

STAGE 2. TECHNICAL EVALUATION

2. TECHNICAL EVALUATION		
CRITERIA	**DESCRIPTION**	**MAX SCORE %**
(A) LEGAL CAPACITY (must be registered company (partnership, sole etc.)		
Legal Capacity	1. No History of Non-Performing Contracts	2.5
	2. No Pending Litigation	2.5
TOTAL (Legal Capacity)		**5.00**
(C) CONSTRUCTION EXPERIENCE		
Construction experience	**(A)General Construction Experience**	
	Experience under Building construction contracts in the role of contractor, subcontractor, or management contractor for at least the last 2 years prior to the applications submission deadline. Provide list showing project name, contract period, contract sum, commencement date, completion date, and percentage currently.	10.00
	(B)Specific Construction Experience	
	Participation as contractor, management contractor or subcontractor, in at least three (3) public (government) contracts within the last two (2) years, each with a value of at least KShs. 1,00,000.00), that have been successfully and substantially completed and that are similar to the proposed works. The similarity shall be based on the physical size, complexity, Methods/technology or other characteristics as described in Scope of Works**.** Attach certified copies of completion certificates	15.00
	(C) Work methodology	
	Methodology/Detailed Workplan for implementing of works……**2mrks**	5.00
	Proposed Equipment Scheduling/Work statement……**2mrks**	
	Methodology on safety during the construction period……1**mrks**	
TOTAL (Construction experience)		**30.00**
(D) Construction Equipment Capacity		
Essential Equipment Availability	**Proof of essential Building construction equipment ownership or proposal for timely acquisition. Attach evidence of either (owned, leased, hired etc) including**	

	Models, photos, capacities, current working conditions, etc	
	Building works Plant & Equipment, Mixers/Graders/Crane/Excavators etc	25.00
	Reliable Transport – Tipper/ Lorry. Pick up	10.00
TOTAL (Construction Equipment Capacity)		**35.00**
(E) KEY PERSONNEL		
Key Personnel competences	Qualification and experience of key personnel. Attach certified copies of C.Vs and certificates).	
	(i)Head Office staff: Directors, Managers, Accountants, etc;	10.00
	(ii) Construction Manager (the overall in charge person(s) to be assigned for the site) with at least five years' experience in works of an equivalent nature and volume. Minimum National Diploma in Road Construction related field. HND – 10%; ND – 8%	10.00
	(iii) Site Agent/ Foreman with at least five years' experience in works of an equivalent nature and volume. Minimum Certificate in Building Construction or NCA accreditation.	10.00
TOTAL (key personnel)		**30.00**
GRAND TOTAL	**(Totals for; A, B, C, D, & E)**	**100.00**

In addition to the mandatory requirements above, a minimum technical score of 70% shall be required to proceed to evaluation of the financial bids.

STAGE 3. FINANCIAL EVALUATION

The winning bidder will be the lowest bidder among those who will have passed the technical evaluation as outlined in (1 & 2) above except where the bidder has not satisfied all other requirements stated in the bid document. The financial evaluation will include:

(1) Arithmetic Errors

The bid shall be checked for arithmetic errors based on the rates and the total sums indicated in the bills of quantities. Confirmation shall be sought in writing from the tenderers whose tender sums will be determined to have a significant arithmetic error to their disadvantage, to confirm whether they stand by their tender sums.

(2) Comparison of rates

The evaluation committee will compare rates from different bidders and note

consistency of rates and front loading. The evaluation committee will judge and make an appropriate decision giving evidence.

The following evaluation criteria shall be applied not withstanding any other requirement in the tender documents.

Selection Process

Quality Cost Based Selection

STEP 1: Preliminary evaluation

This will be an elimination stage which will be done as per criteria above

STEP 2: Technical Evaluation

Tenderers will be required to provide technical details on their product that meets the provided technical requirement. Only Tenderers who score 70% and above will be considered to be technically responsive and therefore be considered for further evaluation

Technical Evaluation shall be based as per the evaluation criteria provided above

Only bidders who score 70% and above will be subjected to financial evaluation. Those who score below 70% will be eliminated at this stage from the entire evaluation process and will not be considered further.

STEP 3: Financial Evaluation

The financial submissions of the required services will be divided by the lowest bidder's financial quote to determine the financial score of each bidder using the formulae below:

FM

Sf = 100 X /$_F$ where: Sf is the financial score; Fm is the lowest priced financial proposal and F is the price of the proposal under consideration.

Proposals will be ranked according to their combined technical *(St)* and financial *(Sf)* scores using the weights ***(T*=the weight given to the Technical Proposal as 80%: *P* = the weight given to the Financial Proposal as 20%)**

Combined Technical and Financial scores is: :- *S* = *St* x *T* % + *Sf* x *P* %

Proposals will be ranked according to their combined technical *(St)* and financial *(Sf)* scores using the weights *(T*=the weight given to the Technical Proposal: *P* = the weight given to the Financial Proposal; *T* + *p* = I)

The table below summarizes the overall evaluation process and the proposed weighting of each stage.

AREA RATING	RATING/SCORE
STEP 1: Preliminary evaluation	Elimination
STEP 2: Technical Evaluation	80
STEP 3: Financial Evaluation	20
Combined Technical and Financial Score	100

STAGE 4 - RECOMMENDATION FOR AWARD

The successful bidder shall be the tenderer with the ***highest Combined Technical and Financial scores*** among those who will have passed the technical evaluation as outlined in (1 & 2) above except where the bidder has not satisfied all other requirements stated in the bid documents.

N:B

The Procuring Entity will verify information submitted. Any form of forgery or misinformation from the bidder shall lead to cancellation of the bid/award, institution of legal proceedings and blacklisting for all future contracts.

SECTION III : CONDITIONS OF CONTRACT

PART I: GENERAL CONDITIONS OF CONTRACT

The Conditions of Contract Part 1 – General Conditions shall be those forming Part 1 of the Conditions of Contract for works of Civil engineering construction Fourth Edition 1987, reprinted in 1992 with further amendments, prepared by the Federation Internationale des Ingenieurs Conseils (FIDIC)

Copies of the FIDIC Conditions of Contract can be obtained from:

FIDIC Secretariat P.O.Box 86
1000 Lausanne 12 Switzerland

Fax: 41 21 653 5432 Telephone: 41 21 653 5003

PART II: CONDITIONS OF PARTICULAR APPLICATION

The following Conditions of Particular Application shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The Particular Condition is preceded by the corresponding clause number of the General Conditions to which it relates.

SECTION IV: CONDITIONS OF CONTRACT

Table of Clauses

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.

"Day-works" are Work inputs subject to payment on a time basis for labour and the associated materials and plant.

"Employer", orthe **"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 two copies 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 authorized 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. 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. Day-works

29.1 If applicable, the Day-works 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 Day-works 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 Day-works subject to obtaining signed Day-works 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.

(b) 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 authorised 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.

34.5 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 favor or disfavor 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 to 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 withheldor 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 V: APPENDIX TO CONDITIONS OF CONTRACT

Name of Employer: **COUNTY GOVERNMENT OF KIRINYAGA**

P.O BOX 260 -10304, KUTUS

Name of Authorized Representative: **CHIEF OFFICER, TRANSPORT, ROADS AND PUBLIC WORKS**

The Project Manager is

Name: **DIRECTOR OF PUBLIC WORKS, COUNTY DEPARTMENT OF TRANSPORT, ROADS AND PUBLIC WORKS, KIRINYAGA COUNTY.**

Address: **P.O BOX 390 KERUGOYA**

Telephone: **020 215 3369/ 0789 218 976**

Email: ***kirinyagacountyworks@gmail.com***

The name (and identification number) of the Contract is
PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP)..

TENDER NO: CGK/SCM/LH&UD/001/2020-2021

Scope of the Works: ***AS PER BILLS OF QUANTITIES IN THIS TENDER DOCUMENT AND THE CONTRACT AGREEMENT***

The Start Date shall be **AGREED WITH THE PROJECT MANAGER**

The Intended Completion Date for the whole of the Works is stated in the Appendix to the Conditions of Contract herein.

The Site Possession Date shall be the date site is handed over to the Contractor by the Project Manager.

The following documents also form part of the Contract:

Documents listed in **clause 2.2.1** conditions of contract

The Contractor shall submit a revised program for the Works within 7 days of delivery of the Letter of Acceptance.

The Site Possession Date shall be **AGREED WITH THE PROJECT MANAGER**

The Sites are located at
The Defects Liability period is **180** days from the date of Practical Completion.

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;

- Contractor's **ALL RISK INSURANCE**

1. The minimum cover for insurance of the Works and of Plant and Materials in respect of contractor's faulty design is **N/A**

2. The minimum cover for loss or damage to Equipment is **N/A**

3. The minimum for insurance of other property is **N/A**

4. The minimum cover for personal injury or death insurance

- For the Contractor's employees is Kshs 5,000,000 (Five Million)

- And for other people is Kshs 5,000,000 (Five Million)

The following events shall also be Compensation Events:

1. Those listed in the conditions of contract

The period between Program updates is 7 days.

The amount to be withheld for late submission of an updated Program is **Kshs "Full Certificate"**

The proportion of payments retained is **10%**.

Limit of retention is **10%** of contract sum.

The Price Adjustment Clause **SHALL NOT** apply

The liquidated damages for the whole of the Works is Kshs. **0.05%** of the Contract Sum per day

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

The Completion Period for the Works is **24 WEEKS FROM DATE OF POSSESSION**

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 not to attach].*

Advance Payment **shall not be granted.**

Prices for **V.A.T.** should be given WITHIN THE RATES

SECTION VI- STANDARD FORMS

Table of Contents

FORM OF POWER OF ATTORNEY

(All bidders shall complete this form otherwise; their bids shall be considered as non-responsive)

We _____ (Name of Bidder)

having our offices located in _____ (Name of Town and Building) duly authorise
_____ (Name of person appointed to act for and on behalf of the bidder) to act for and on our behalf on all matters pertaining to the execution of works as stipulated under

PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP).

Duly signed and delivered:

Name of appointed attorney: _____

Signature of appointed attorney: _____

Witnessed by:

1. Name of First Company Director: _____

   Signature: _____

2. Name of Second Company Director: _____

   Signature: _____

Company Seal:

_____

_____ **Name and Title**

FORM OF TENDER

Office of the County Secretary,
County Government of Kirinyaga,
P.O. Box 260 - 10304
KUTUS

Date: ……,

Dear Sir,

REF: PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP)..

In accordance with the Instructions to Tenderers, Conditions of Bid, Specifications and Bills of Quantities for the execution of the above named works, we, the undersigned offer to perform the works and remedy any defects therein for the sum of:

Kshs……*[**Amount in figures]***
Kenya
Shillings……

……

…… *[**Amount in words]***

We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Employer's Representative's notice to commence, and to complete the whole of the Works comprised in the Contract within ……[period] weeks.

We agree to abide by this tender for **a period of 120 days from the date of bid opening** and shall remain binding upon us and may be accepted at any time before that date.

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

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** **Bidder***]*

Of…… [***Address of Bidder****]*

PIN No. ……

VAT CERTIFICATE No. ……

Witness: Name ……

Address ……

Signature ……

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 OF CONTRACT AGREEMENT

THIS AGREEMENT, made the _____ day of _____ 20 _____ between **COUNTY GOVERNMENTOF KIRINYAGA** of[or whose registered office is situated at] **P.O BOX 260 - 10304, KUTUS,KENYA** (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 certain works should be executed, viz

REF: PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP)- TENDER NO: CGK/SCM/LH&UD/001/2020-2021(hereinafter called "the Works") located at **KIRINYAGA COUNTY a**nd 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.

a. The Conditions of Contract (FIDIC IV) Part 2
b. The Conditions of Contract (FIDIC IV) Part 1
c. The Special Specification
d. The Standard Specifications
e. The Priced Bill of Quantities
f. The Letter of Award and Acceptance
g. Schedules of Supplementary Information
h. The Drawings
i. Other documents as may be agreed and listed

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 _____

Binding Signature of Contractor _____

In the presence of (i) Name_____

Address_____

Signature_____

[ii] 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]*

FORM OF PERFORMANCE BANK GUARANTEE (UNCONDITIONAL)

To
The Chief Officer,

County Department of Roads, Transport and Public Works **P.O BOX 390 KERUGOYA**

WHEREAS ..... (hereinafter called "the Contractor")
has undertaken in pursuance of Contract No. .....Dated .....to execute the

PROPOSED CONSTRUCTION OF FIRE STATION AT LIVESTOCK MARKET-KENYA URBAN SUPPORT PROGRAM (KUSP).

, (hereinafter called the "Contract")

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified in the

Appendix to Form of Bid 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 in figures)
Kshs.....

.....(amount in words)

and we undertake to payment to you, upon your first written demand and without cavil or argument, any sum or sums within and up to the limits as aforesaid without your needing to prove or show grounds or reasons for the sum specified therein.

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

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 you 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

This Guarantee shall be valid until 28 days after issuing of the Defects Liability Certificate.

AUTHORIZED SIGNATURE OF THE BANK .....

Name of Signatory.....

Name of bank.....

Address.....Date .....

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:

Name in full Nationality Citizenship Details Shares

1……

2……

3……

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:

Name in full. Nationality. Citizenship Details*. Shares.

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

TENDER – SECURING DECLARATION FORM

[The Bidder shall complete in this form in accordance with the instructions indicated]

Date: _____

Tender No. _____

For: _____

To: The County Government of Kirinyaga
P. O. Box 260 -10304
Kutus

We, the undersigned, declare that:

1. We understand that, according to your conditions, bid must be supported by a Bid Securing Declaration.

2. We accept that we will be automatically be suspended from being eligible for bidding in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we –

(a) Have withdrawn our bid during the period of bid validity; or

(b) Having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity,

(i) fail or refuse to execute the contract, if required, or

(ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Tenderers

3. We understand that this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of

(i) our receipt of a copy of your notification of the name of the successful Bidder; or

(ii) twenty-eight days after the expiration of our Tender

4. We understand that if we are a Joint Venture, the Bid Securing Declaration must be in the name of the Joint Venture that submits bid and the Joint Venture has not been legally constituted at the time of bidding, the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:

_____

_
[insert signature of person whose name and capacity are shown]
In the capacity of:

_____
[insert legal capacity of person signing the Bid Securing Declaration]

Name:

_____

__
[insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of:

_____

[insert complete name of Bidder]

Dated on ..... day of ..... [insert date of signing]

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

Year	Volume	
	Currency	Value

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.

Project name	Name of client and contact person	Type of work performed and year of completion	Value of Contract	Completion Status

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

2

Item of Equipment	Description, Make and age (years)	Condition (new, good, poor) and number available	Owned, leased (from whom?), or to be purchased (from whom?)

1.5 Qualifications and experience of key personnel proposed for administration and execution of the Contract. Attach biographical data.

Position	Name	Years of experience (general)	Years of experience in proposed position
Project Manager, etc.			

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.

3 Joint Ventures

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

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

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

3.7 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.

DETAILS OF DOMESTIC 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 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

FORM SD1

SELF DECLARATION FORMS(r 62)

REPUBLIC OF KENYA

PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA)

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.

I, ……of P. O. Box …… being a resident of …… in the Republic of ------ do hereby make a statement as follows:-

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Director of …… (insert name of the Company) who is a Bidder in respect of **Tender No. ……** for ……(insert tender title/description) for ……(insert name of the Procuring entity) and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.

3. THAT what is deponed to hereinabove is true to the best of my knowledge, information and belief.

…… …… ……
(Title) (Signature) (Date)

Bidder Official Stamp

Note: This form MUST be filled, signed and submitted by all the bidders participating in this tender. This is a mandatory requirement under the new Public Procurement Asset and Disposal Act 2015 that came into effect on 7th January 2016

FORM SD2
SELF DECLARATION FORMS (r 62)
REPUBLIC OF KENYA
PUBLIC PROCUREMENT REGULATORY AUTHORITY (PPRA)
SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE.

I, ...of P. O. Box ..... being a resident of ..... in the Republic of ------ do hereby make a statement as follows:-

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of ..... (insert name of the Company) who is a Bidder in respect of **Tender No. .....** for .....(insert tender title/description) for .....(insert name of the Procuring entity) and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of .....(insert name of the Procuring entity) which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of .....(name of the procuring entity)

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender

5. THAT what is deponed to hereinabove is true to the best of my knowledge information and belief.

....
(Title) (Signature) (Date)
Bidder's Official Stamp

Note: This form MUST be filled, signed and submitted by all the bidders participating in this tender. This is a mandatory requirement under the new Public Procurement Asset and Disposal Act 2015 that came into effect on 7th January 2016

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.

etc.

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

1.

2.

etc

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

KEY PERSONNEL

DESIGNATION	NAME	NATIONALITY	SUMMARY OF QUALIFICATIONS AND EXPERIENCE
Headquarters: 1. Director 2. 3. 4. 5. etc.			
Site Office: 1. Site Superintendent 2. 3. 4. 5. etc.			

I certify that the above information is correct.

…… …… …….

(Title) *(Signature)* *(Date)*

SCHEDULE OF COMPLETED CIVIL WORKS CARRIED OUT BY THE TENDERER IN THE LAST EIGHT YEARS

DESCRIPTION OF WORKS AND CLIENT	TOTAL VALUE OF WORKS (KSHS)	CONTRACT PERIOD (YEARS)	YEAR COMPLETED

I certify that the above Civil Works were successfully carried out and completed by ourselves.

…… …… ……

(Title) *(Signature)* *(Date)*

*Value in Kshs using Central Bank of Kenya mean exchange rate at a reference date 30 days before date of tender opening.

SCHEDULE OF ONGOING PROJECTS

DESCRIPTION OF WORK AND CLIENT	CONTRACT PERIOD	DATE OF COMMEN-CEMENT	DATE OF COMPLETION	TOTAL VALUE OF WORKS (KSHS.)	PERCENTAGE COMPLETED TO DATE

I certify that the above Civil Works are being carried out by ourselves and that the above information is correct.

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

OTHER SUPPLEMENTARY INFORMATION

1. Financial reports for the last five years, balance sheets, profit and loss statements, auditors' reports etc. List them below and attach copies.

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

2. Evidence of access to financial resources to meet the qualification requirements. Cash in hand, lines of credit etc. List below and attach copies of supporting documents

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

3. Name, address, telephone, telex, fax numbers of the Tenderer's Bankers who may provide reference if contacted by the Employer.

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

4. Information on current litigation in which the Tenderer is involved.

OTHER PARTY (IES)	CAUSE OF DISPUTE	AMOUNT INVOLVED (KSHS)

I certify that the above information is correct.

.....	.....	.....
Title	*Signature*	*Date*

SECTION VII -IX: 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.

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

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.

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.

2.0 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

SECTION VII: SPECIFICATIONS AND PRICING NOTES FOR BUILDER'S WORKS

The Contractor should read carefully the following specification for workmanship prepared in accordance with standard specifications for building works 1976 Edition prepared by the Ministry of Roads, Public Works and Housing.

A.0 GENERAL ITEMS

A.1 MATERIALS GENERALLY

All materials used on the works shall be new and of the qualities and kinds specified herein and equal to approved samples. Deliveries shall be made sufficiently in advance to enable samples to be taken and tested if required. No materials shall be used until approved and all materials which are not approved or which are damaged, contaminated or have deteriorated in any way or do not comply in any way with the requirements of this specification shall be rejected and shall be immediately removed from the site at the contractors expense.

A.2 MATERIAL FOR WHICH THERE IS A KENYA BUREAU OF STANDARD SPECIFICATION

All materials used in the works for which a Kenya Bureau of Standards (K.S.) specification has been published shall conform to the latest edition hereof in every way. The Architect reserves the right to demand that the Contractor shall obtain at his own expense a certificate in respect of any materials to state that is in accordance with the Kenya Bureau of Standard specifications.

A.3 MATERIALS FOR WHICH THERE IS NO KENYA BUREAU OF STANDARDS SPECIFICATION

All materials used in the works for which no Kenya Bureau of Standards specification has been published shall conform to the British Standards (B.S.) specification for such materials. If there are no published standards as specified for any materials, the quality of such materials shall be generally of a standard equal to those for which there is a Kenya Bureau of Standards or British Standard Specification.

B.0 EXCAVATION AND EARTHWORK

B.1 SITE CLEARANCE

Site clearance shall include the cutting down of all trees, stumps, bushes, vegetation and rubbish, burning the debris arising in approved locations and cutting remaining materials to a tip provided by the Contractor.

B.2 NATURE OF THE SOIL

The Contractor is advised to visit the site and ascertain the nature of the ground to be excavated and he shall price accordingly and no claim will be allowed for want of knowledge in this respect.

Rates for excavation shall include for excavation in soil, earth, black cotton, sandy soil, murram, turf, soft rock, boulders or whatever other subsoil is encountered except hard rock as defined below.

B.3 FOUNDATION EXCAVATIONS

The foundation trenches and column bases shall be excavated to widths and depths of the concrete foundations shown on the drawings or to such widths and depths as the Engineer may instruct after examination of the excavations. Quantities of all excavations shall be measured and valued by the Quantity Surveyor and any

difference between such measurement and the measurements herein given shall be dealt with as a variation to the Contract.

If however, the Contractor excavates to any greater depths than shown in the drawing or as instructed by the Engineer, then he shall at his own expense fill such extra depth of excavation with concrete as specified for the foundations to the satisfaction of the Engineer. The Contractor shall not be paid for the cost of any excavation executed deeper or wider than shown on the drawings or instructed by the Engineer or the cost of back filling such excavation or disposing of surplus.

B.4 SURPLUS SOIL DISPOSAL

Excavated material not required for subsequent refilling shall be removed to areas off site which shall be approved by the Architect.

B.5 TOP SOIL FOR SPREADING

Where required in the Bills of Quantities, top soil required for subsequent spreading over finished work shall be especially selected and shall be dumped in special heaps as indicated by the Architect. Such top soil shall be reasonably free from vegetation to the satisfaction of the Architect and shall be compacted as little as possible in the heaps.

B.6 FILLING UNDER SURFACE BEDS IN BUILDINGS

i) MURRAM FILLING

Murram for filling as base course shall be from an approved source and of the highest quality. It shall be laid in layers not less than 150mm thick and not greater than 230mm thick prior to compaction. Water will be applied to O.M.O. and each layer will be thoroughly compacted by at least 8 passes of a 10 ton smooth wheeled roller or a 2 ton vibrating roller until all movement ceases and 100% California Bearing Ratio (C.B.R.) is obtained.

ii) HARDCORE FILLING

Hardcore filling shall be crushed rock, broken concrete or other approved hard granular materials broken to pass not greater than a 150mm ring or to be 75% of the finished thickness of the layers being compacted whichever is the less and graded so that it can be easily and thoroughly compacted by rolling. The filling is to be laid in layers each of a consolidated thickness not exceeding 230mm.

B.7 ANTI-TERMITE TREATMENT

Where described the top surface of filling shall be treated with Gladiator T.C. pesticides to be supplied and applied by Rentokil Ltd. P.O Box 44360, Nairobi or other equal and approved firm strictly in accordance with the satisfaction of the Architect. The Contractor must destroy the termite nests found within the perimeter of the building and within 20 meters from the building externally and take out and destroy queens, impregnate holes and tunnels with approved insecticide and backfill with hard material, well rammed and consolidated. The specialist shall be required to issue a 10 year guarantee to the Employer.

B.8 POLYTHENE SHEETING

Polythene sheeting shall be produced by an approved manufacturer. Joints in sheeting shall be treble folded with a 150mm fold and taped at 300mm intervals with 50mm wide back plastic adhesive tapes. The sheeting shall not stretch but shall be laid with sufficient wrinkles to permit shrinkage up to 15%.

The Contractor shall ensure that the membrane is not pierced by laying and concerting.

B.9 EXISTING SERVICES

Before commencing works, the Contractor shall at his own expense ascertain in writing from the relevant Local authorities and all other public bodies, companies and persons who may be affected, the position and depths of their respective ducts, cables, mains or pipes and appurtenance. He shall there upon search for and locate such services.

Active existing services shall be adequately protected from damage or relocated as directed by the Architect. Inactive services shall be removed or sealed off in accordance with the direction of the Architect.

B.10 PROTECTION

The Contractor shall protect all graded and filled areas from the actions of the elements. Any settlement or washing away that occur prior to acceptance of the works shall be repaired and grades re-established to the required elevations and slopes.

C.0 CONCRETE WORK

C.1 CODES OF PRACTICE

All workmanship, materials, tests and performances in connection with reinforced concrete shall be in conformity with the latest edition of the British Standard for concrete works B.S. 8110 parts 1&2, B.S. 8004, B.S. 8007) and any other approved Local and International standards.

Where inconsistency exists between these preambles and these standards, the Contractor shall notify the Engineer in good time for his clarification as to which of the two implications on the Contract.

C.2 SUPERVISION

A competent person approved by the Engineer shall be employed by the Contractor whose duty will be to supervise all stages in the preparation and placing of the concrete. All cubes shall be made and site tests carried out under his direct supervision on consultation with the Engineer.

C.3 CEMENT

Cement unless otherwise specified shall be Ordinary Portland cement or a brand and source approved by the Engineer and shall comply with the requirements of K.S.02-21. A manufacturer's certificate of test in accordance with K.S.02.21 shall be supplied for each consignment delivered to the Site.

C.4 AGGREGATE

Aggregates shall conform to the requirement K.S.02-95 and all the proposed sources, types and grading test results of all aggregates are to be approved in all respects by the Engineer before work commences.

If in the opinion of the Engineer the aggregate meets with the above requirement but is dirty or altered in any manner it shall be screened and/or washed in clean water at the Contractor's expense.

Aggregate shall be delivered to the site in their prescribed sizes or gradings and shall be stock-piled on paved areas to boarded platforms in separate units to avoid intermixing. On no account shall premixed cores aggregates be brought to the patching plant. On no account shall aggregates be stock-piled on the ground.

C.5 WATER

The water used for mixing concrete shall be from an approved source, clean, fresh and free from harmful matter and comply with the requirements of B.S.3148.

C.6 QUALITY CONTROL AT WORKS STAGE

Once the concrete mix is accepted form preliminary to works stage, the principal basis of control shall be analysis of the cube test results at 28 days.

C.7 CEMENT

The quantity of cement shall be measured by weight. Where delivered in bags, each batch of concrete is to contain one or more bags of cement in accordance with the proportions specified.

For non-structural concrete, volume batching may be used as indicated below:

Class of concrete	15	10
Nominal mix by volume	1:3:6	1:4:8
Cubic metres of coarse aggregate per 50kg bag of cement	0.12	0.16
Cubic metres of coarse aggregate per 50kg bag of cement	0.24	0.32

Maximum size of coarse aggregate 40mm x 40mm or 20mm for blinding concrete where described.

Where batching is by volume, approved gauge boxes as such a size as will give the correct proportions shall be used, and full account shall be taken of bulking due to high moisture content.

C.8 CONSTRUCTION JOINTS

Construction joints shall be permitted only at the positions predetermined on the drawings or as instructed on the Site by the Engineer. In general they shall be located at points of maximum shear, viz, vertical at, or near midspans of slabs, ribs and deems.

C.9 FAULTY CONCRETE

Any concrete which fails to comply with these preambles, or which shows signs of setting before it is placed shall be taken out and removed from the batch; where concrete is found to be defective after it has set the concrete shall be cut out and replaced in accordance with the Engineer's instruction. On no account shall any

faulty, honeycombed, or otherwise defective concrete be repaired or patched until the Engineer has made an inspection and issued instructions for the repair.

C.10 STEEL REINFORCEMENT

The steel reinforcement shall comply with the latest requirements of the following Kenyan and British Standards:

Hot rolled MS for the Reinforcement Concrete	KS 02-22
Hot rolled MS for the Reinforcement Concrete	KS 4449
Cold worked H.Y. steel for the reinforcement concrete	BS 4461
Hard drawn steel wire	BS 4482

C.11 FABRIC REINFORCEMENT

Fabric reinforcement shall be electrically cross-welded steel wire mesh reinforcement to B.S. 4483 and of the size and weight specified and made of wire to B.S 4482.

C.12 FIXING STEEL REINFORCEMENT

Reinforcement shall be accurately bent to the shapes and dimensions shown on the drawings and schedules and in accordance with B.S 4466 and B.S 8110. Reinforcement must be cut and bent cold and no welded joints will be permitted unless detailed or directed by the Engineer.

C.13 FORMWORK

The method and system of formwork which the Contractor proposes to use shall be approved by the Engineer before construction commences. Formwork shall be substantially and rigidly constructed of timber, steel, plastic, precast concrete or other approved materials.

All timber formwork shall be good, sound, clean, sawn, well-seasoned timber free from warps and loose knots and of scantlings sufficiently strong for their purpose.

D. WALLING

D.0 MATERIALS

D.1 CEMENT

Cement used for making mortar shall be as described in concrete work.

D.2 LIME

The lime for making mortar shall be obtained from an approved source and shall comply with B.S. 890 Class A for non-hydraulic lime. The lime can be run to putty in an approved lined pit or container. The water to be first run into the pit or container and the lime to be added until it is completely submerged, stirred vigorously until all lumps are disintegrated and shall be kept constantly covered with water and regularly stirred for at least four

weeks. The resulting milk–lime then to be run through a fine sieve and run into a pit or other container and kept clean and moist for not less than two weeks before being used in the works.

D.3 SAND

Sand used for making mortar shall be clean, well graded siliceous sand of good sharp hard quality equal to samples which shall be deposited with and approved by the Architect. It shall be free from lumps of stone, earth, loam, dust, salt, organic matter and other deleterious substances, passed through a fine sieve and washed with clean water if so directed by the Architect.

D.4 WATER

Shall be as described in Concrete work.

D.5 STONE

All stones shall comply with the requirement of CP 121.202 for masonry and rubble walls respectively except where amended or extended by the following clauses.

D.6 REINFORCED WALLS

Steel reinforcing bars in walls shall be carefully placed and spacers used to ensure that a minimum of 20mm cover is given to the reinforcement unless otherwise specified.

Horizontal reinforcement in mortar joints shall be laid such that the reinforcement is not in contact with the blocks or stone.

D.7 WALL TIES

Wall ties shall be provided to connect walls to steel or concrete columns and beams to connect two unbound leaves of wall.

Wall ties shall be provided at 450mm centres both vertically and 900mm centres horizontally and shall be staggered when used to connect two leaves of unbound wall. Wall ties shall be embedded into each material by a minimum of 50mm

D.8 FAIR FACE

All concrete and hollow blockwork described as finished with a fair face is to be built to a true and even face with the joints finished as specified hereinafter.

D.9 POINTING

Pointing of walls shall be prepared for pointing by raking out all loose or friable material to a minimum of 15mm to form a square recess. The joints shall then be wetted and new mortar shall be forced into the joints and finished as directed.

E. GLAZING

E.0 MATERIALS

E.1 GENERAL

Glass used in glazing and for mirrors shall be best quality clear glass free from visible defects so that to afford uninterrupted vision or reflection as appropriate and without obvious distortion.

E.2 STANDARDS

Glass for glazing and mirrors shall be approved manufacture and is to comply with B.S. 952 in all respects free from flaws, bubbles, specks and other imperfections. E.3. CLEAR SHEET GLASS ETC.

The clear sheet glass shall be ordinary glazing (OG) quality.

F. METALWORK

F.0 MATERIALS

F.1 GENERALLY

All materials shall be the best of their respective kinds free from defects and all work is to be carried out in the most workmanlike manner and strictly as directed by an Architect. The materials in all stages of transportation, handling and stacking shall be kept clean and prevented from injury by breaking, bending or distortion and weather action.

F.2 MILD STEEL

Mild steel shall comply with B.S. 15.

F.3 HOLLOW SECTION TUBING

Square and rectangular hollow section tubing shall be hot rolled mild steel in accordance with Grade 43C of B.S. 4360.

F.4 BOLTS, NUTS AND WASHERS

These shall be fabricated from materials which comply with B.S.15 and each manufactured item shall comply with the appropriate B.S.

F.5 GALVANIZED SHEET STEEL

Stainless steel tube shall be Austenic steel B.S. comparable to B.S. 1449 Type 316 S 16\.

F.7 STEEL GRILLES

Steel grilles shall be manufactured from section conforming to B.S.990 of heavy duty sections of the metric W20 range of approved manufacture and design approved by the Architect.

After manufacture and before delivery to site steel windows are to be hot galvanized by dipping in a bath of molten zinc or painted with one coat primer.

WORKMANSHIP

F.8 WELDING

All welding is to be in accordance with the requirements of B.S 1856 and 938 and the electrodes shall comply with B.S. 639.

F.9 PAINTING

All steel is to be wire brushed and any loose scale, dirt or grease shall be removed before any painting is commenced. One coat of red oxide primer type A to B.S. 2523 shall be applied at the shop.

Any damage to the printing paint shall be made good to the Architect's satisfaction.

F.10 FIXING OF STEEL GRILLES

Fixing of metal grilles shall include for assembling and fixing, including screwing to sub-frames or cutting mortices for lugs in concrete or walling and running with cement mortar 91:4, bedding frames in similar mortar, pointing in mastic, bedding sills, transoms and mullions in mastic, making good finishing around both sides and fixing, and adjusting all fittings and frames.

G. FLOOR, WALL AND CEILING FINISHING

G.0 PLASTERWORK

G.1 GENERALLY

Render, both internal and external shall be cement and sand in the proportions 1:4 finished to the thickness specified.
Plaster shall consist of an undercoat of 1 part cement to 6 parts sand by volume, and a finishing coat of 1 part cement to 10 parts lime putty. Each coat shall be finished to the thickness specified.
G.2 CEMENT

Ordinary Portland Cement and shall comply with K.S. 02-21. White and coloured cements shall comply with B.S. 12 and be obtained from an approved manufacturer.

G.3 LIME

Lime shall be prepared from hydrated lime complying with B.S. 890, Part 2. G.4

SANDS

Sands for cement and lime mixes shall comply with B.S. 1199, Table 1.

G.5 WATER

Water shall be clean and kept free from all impurities.

G.6 MIXING OF MATERIALS

All materials shall be thoroughly mixed in the proportions described. No mixes of plasters, other than described shall be used.

G.7 PERIOD BETWEEN COATS

Cement – lime undercoats shall be allowed to dry out thoroughly before a further coat is applied.

G.8 SURFACES OF BEDS AND BACKINGS

Screeded beds for in-situ finishings of floor finishings bedded in mortar shall be left rough from the screeding board. Floated beds for inflexible floor finishing bedded in mastic, shall be left with a plain untextured surface. Trowelled beds for flexible finishings shall be finished smooth and free from score marks, grooves or depressions. Screeded backings for in-situ wall finishings or wall finishings bedded in mortar shall be scratched for key. Floated backings for inflexible wall finishings shall be finished smooth and free from score marks or depressions. Beds and backings for finishings by specialists shall be to the approval of the specialist.

G.9 PREPARATION OF SURFACES

All surfaces to receive the finishing in this section shall be thoroughly cleaned. Screeds to receive finishing bedded in mortar shall be well wetted before laying is commenced.

H. PAINTING AND DECORATING

H.0 MATERIALS

H.1 COLOUR RANGE

Painting and decorative schemes shall be carried out in colours selected by the Architect from the approved range of colours.

H.2 APPROVAL OF BRANDS

The contractor shall seek, in writing, approval from the architect for all brands of paint he wishes to use.

H.3 QUALITY OF PRODUCTS

Where a type of paint is produced by the manufacturer in more than one quality, only paints and materials of the first or best quality shall be used in the works. The container label shall indicate clearly the quality of the paint being used.

Where it is not event that the first or best quality of paint is being used, the Architect will order the removal of such materials from the site and rectification of any work executed with those materials, all at the Contractor's expense.

H.5 SAME MAKERS' MATERIALS USED FOR COATING

While materials for the work may be obtained from several makers, undercoats and finishing coats for a particular surface must be obtained from the same maker, (i.e. one makers' undercoat).

H.8 REMEDYING DEFECTS DUE TO DEFECTIVE MATERIALS

All materials, which in the opinion of the Architect are unsatisfactory, shall be immediately removed from the site and any work executed with such defective materials shall be made good by the Contractor, at his expense, to the satisfaction of the Architect.

H.15 BLACK BITUMINOUS PAINT

Black bituminous paint shall comply with B.S. 3416, Type 1 for general use, Type II for drinking water tanks.

H.20 PRIMER FOR IRON AND STEELWORK

Primer for iron and steelwork shall be:-

i) Lead based priming paint complying with B.S. 2523, Type B.
ii) Calcium plumbate priming paint complying with B.S. 3698, Type A.

H.25 PRIMER FOR WOODWORK

Primer for internal woodwork, other than the internal surfaces of external doors, windows and their frames and backs of frames and linings, etc., in contact with masonry, concrete or plaster, shall be leadless white or light grey priming paint not darker than 9-093 of B.S. 4800 which shall be compatible with the subsequent coats and obtained from the same maker.

H.26 OIL PAINTS

Hard gloss, semi-gloss matt and flat oil paints, and respective undercoats, shall be approved quality, as appropriate.

H.27 POLYURETHANE LACQUER

Polyurethane lacquer shall be an approved single pack or two pack lacquer as described of interior or exterior quality, as appropriate.

H.31 PLASTER, RENDERING, CONCRETE BLOCK WORK AND BRICKWORK

All plaster or mortar splashes, etc., shall be removed from plaster rendering, concrete, block work and brickwork by careful scraping; all holes, cracks, etc., shall be stopped and the whole of the surfaces shall be brushed down to remove dust and loose materials. In addition, all traces of mould, oil shall be removed from concrete surfaces by scrubbing with water and detergent and rinsing with clean water to remove all detergent.

H.35 IRON AND STEEL

Before fixing, all rust and scale shall be removed from iron and steel surfaces by wire-brushing, scraping, hammering, flame cleaning etc.

H.37 HARDWOOD

All dirt and grease shall be removed from hardwood surfaces. After priming, all nail holes and other imperfections shall be stopped.

H.38 FIBREBOARD

All dirt shall be brushed off from fireboard surfaces. After priming all nail holes and other imperfections shall be stopped.

H.39 PLYWOOD

Surfaces of plywood to be filled as required with a plaster based filler for internal work, and a filler as described in stopping here before for external work, and then rubbed down and all dust and loose materials brushed off.

H.40 WOODWORK TO BE PAINTED

Before fixing woodwork, all surfaces which will be visible after fixing shall be rubbed down and all knots and resin pockets shall be scorched back and coated with knotting.

After priming and fixing, all nail holes and other imperfections shall be stopped and whole surface shall be rubbed down and all dust brushed off.

H.41 WOODWORK TO RECEIVE CLEAR FINISH

All holes and other imperfections in surfaces to receive a clear finish shall be stopped and the whole surface shall be rubbed down to a fine satin finish and all dust brushed off.

WORKMANSHIP

H.42 STANDARD OF WORKMANSHIP

Prior to the commencement of internal or external decoration, (areas not exceeding 50sq.m. in total area), and designated by the Architect, shall be completely decorated, and after approval shall be used as a standard for the whole of the works. Any additional cost involved in carrying out such decoration in advance of the general work shall be deemed to be included in the contract sum. Such decorated surfaces shall be made good and touched up as necessary prior to the handing over of the works.

H.43 STIRRING OF MATERIALS

The contents of all cans and containers of all materials must be properly and thoroughly stirred before and during use and shall be suitably strained as and when necessary.

H.44 MANUFACTURER'S INSTRUCTIONS

All materials shall be used strictly in accordance with instructions issued by the manufacturers concerned. The addition of thinners, driers or other materials will only be permitted when specially required by the maker and the procedure approved by the Architect.

H.45 BRUSH WORK

Unless otherwise described, all coatings shall be applied by brush. Written permission must be obtained from the Architect for the application of coatings by spray or roller where not as described, and if permission is granted, such application shall not result in extra cost to the Employer.

DRAWINGS

Note 1. The tender drawings including Site plans should be annexed in a separate booklet and issued To bidders during the Pre Tender Site meeting.

SECTION VIII:

GENERAL SPECIFICATIONS OF MATERIALS AND WORKS FOR ELECTRICAL WORKS

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.

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.

2.4 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.

2.5 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.

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.

2.6 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 easily withdrawable 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 t o 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 enamelled 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 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/SWA/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.

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 blackstraps 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.
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.

SYSTEM	INSULATION COLOUR	CABLE END MARKER
Main and Sub-Main		
a) Phase	Red	Red
b) Neutral	Black	Black
1) Sub-Circuits Single Phase		
a) Phase	Red	Red
b) Neutral	Black	Black

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.

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 switchboardSwitchboard 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.

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.

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 Company Limited, and Communications Commission of Kenya (CCK).

SECTION VII: C: GENERAL MECHANICAL SPECIFICATION

SECTION IX: GENERAL MECHANICAL SPECIFICATIONS

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.

h) The Kenya Building Code Regulations.

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 pipework 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 pipework 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 pipework shall be colour 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 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 IX-A: PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

CLAUSE No. DESCRIPTION PAGE

SECTION IX-B: PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

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 Pipework and Fittings

Pipework materials are to be used as follows:

a) **Galvanized Steel Pipework**

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.

b) **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.

c) **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.

d) **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, centers 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.

e) **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 adhere 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.

b) 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.

c) 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) 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.

Size Nominal Bores-	Copper Tube to B.S. 659	Steel Tube to BS 1387
15mm	1.25m	2.0m
20mm	2.0m	2.5m
25mm	2.0m	2.5m
32mm	2.5m	3.0m
40mm	2.5m	3.0m
50mm	2.5m	3.0m
65mm	3.0m	3.5m
80mm	3.0m	3.5m
100mm	3.0m	4.0m
125mm	3.0m	4.5m
150mm	3.5m	4.5m

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.

1.1. **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.

b) 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 crawlways, 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 IX - C: PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER BOOSTED HOSE REEL SYSTEM, HOSE REEL, AND FIRE HYDRANT INSTALLATIONS

6.1 GENERAL

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers and Boosted Hose Reel System. 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.

6.2 SCOPE OF WORKS

The Sub-contractor shall supply, deliver, erect, test and commission all the portable fire extinguishers and Hose Reel which are called for in these Specifications and as shown on the Contract Drawings.

6.3 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.

6.4 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

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 it s 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.

6.6 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 $2^3/_4$ X 8TPI female thread**.**

Head cap: to be plastic moulding acetyl resin.

CO_2 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.

6.7 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.

6.8 BOOSTED HOSE REEL SYSTEM

6.8.1 General

The Particular Specification details the requirements for the supply, installation and commissioning of the hose reel installation. The hose reel installation shall comply in all respects to the requirements set out in C.O.P 5306 Part 1: 1976, B.S 5041 and B.S 5274. The System shall comprise of a pumped system.

6.8.2 Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approved manufacturers. The pumps shall be capable of delivering 0.76 lit/sec at a running pressure of 2 bars.

The pump casing shall be of cast iron construction with the impeller shaft of stainless steel with mechanical seal.

6.8.3 Control Panel

The control panel shall be constructed of mild steel 1.0mm thick sheet, be moisture, insect and rodent proof and shall be provided complete with circuit breakers and a wiring diagram enclosed in plastic laminate.

The pump shall be controlled by a flow switch therefore; the control panel shall include the following facilities:

(a) 'On' push button for setting the control panel to live.

(b) Green indicator light for indicating control panel live.

(c) Duty / Stand-by pump auto change over.

(d) Duty pump run green indicator light.

(e) Stand-by pump run green indicator light.

(f) Duty pump fail red indicator light.

(g) Stand-by pump fail red indicator light.

(h) Low water condition pump cut-out with red indicator light.

The pumps are to be protected by a low level cut-out switch to prevent dry pump run when low level water conditions occur in the water storage tank.

6.8.4 Hose Reel

The hose reel to the installation shall consist of a recessed, swing-type hose reel as Angus Fire Armour Model III or from other approved manufacturers.

The hose reel shall comply with B.S. 5274: 1975 and B.S 3161: 1970 and is to be installed to the requirements of C.P. 5306 Part 1: 1976.

The hose reel shall be supplied and installed complete with a first-aid Non-kinking hose 30 meters long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome - plated globe valve to B.S 1010 to the inlet to the reel is to be supplied.

The orifice to the nozzle is to be not less than 4.8mm to maintain a minimum flow of 0.4 lit / sec to jet.

The hose reels shall be installed complete with electro-galvanised cabinet recessed on the wall.

The hose reels shall be installed at 1.5 metres centre above the finished floor level in locations shown in the contract drawings.

6.8.5 Pipe Work

The pipe work for the hose reel installation shall be galvanised wrought steel tubing heavy grade Class C to B.S 1387: 1967 with pipe threads to B.S 21. The pipe work and all associated fittings shall be in approved colour for fire fittings.

6.8.6 Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings, welded or seamless fittings conforming to B.S. 1740 or malleable iron fittings to B.S 143.
All changes in direction will be with standard bends or long radius fittings. No elbows will be provided.

6.8.7 Non-return Valves

The non-return valves up to and including 80mm diameter shall be to B.S. 5153: 1974.
The valves shall be of cast iron construction with gunmetal seat and bronze hinge pin.

6.8.8 Gate Valves

The gate valves up to and including 80mm diameter shall be non-rising stem and wedge disc to B.S 5154: 1974 with screwed threads to B.S. 21 tapes thread

6.8.9 Sleeves

Where pipe work passes through walls, floors or ceilings, a sleeve shall be provided one diameter larger than the diameter of the pipe, the space between them to be packed with mineral wool, to the Engineer's approval.

6.8.10 Earthing

The hose reel installation shall be electrically earthed by a direct earth connection. The installation of the earthing shall be carried out by the Electrical Sub- contractor.

6.8.11 Finish Painting

Upon completion of testing and commissioning the hose reel installation, the pipework shall be primed and finish painted with 2 No. coats of paints to the Engineer's requirements.

6.8.12 Testing and Commissioning

The hose reel installation shall be flushed out before testing to ensure that no builder's debris has entered the system. The installation is to be then tested to one and half times the working pressure of the installation to the approval of the Engineer. Simulated fault conditions of the pumping equipment are to be carried out before acceptance of the System by the Engineer.

6.8.13 Instruction Period

The Sub-contractor shall allow in his contract sum for instructing of the use of the equipment to the Client's maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.

The period of time required shall be stipulated by the Client but will not exceed two days in which time the Client's staff shall be instructed on the operation and maintenance of the equipment.

6.8.14 Signage-Fire Instruction /Fire Exit

6.8.14.1 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.

6.8.14.2 Fire Exit Sign

Print Fire Exit signs on the Perspex plate, 4mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOUR** 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.

6.8.14.3 Hose Reel Label

Print Fire Exit signs on the Perspex plate, 4mm thick, with white colour background as follows:-

1. Lettering **IN RED COLOUR** of not less than 50mm in height.
2. A pendant sign bearing words, **HOSE REEL** and with a directional arrow.

The sign must be capable of being read from both approaches to exit and so is double sided.

SECTION IX - D: PARTICULAR SPECIFICATION FOR L.P. GAS INSTALLATIONS

A GENERAL

The specification and sub-contract drawings detail the requirements of the Sub-contract works.

The specification and sub-contract drawings shall be read together and are meant to explain each other.

The sub-contract drawings do not purport to show minor details of equipment, fixtures, pipe work or fixings, but are intended to indicate the intent and extent of the installations as designed, together with thee sufficient information for the tenderer to include in his pricing any other items he deems necessary for the satisfactory completion and correct functioning of the sub-contract works.

If in the opinion of the tenderer, there is any ambiguity or any difference in the requirements of the specifications and the sub-contract drawings, he shall clarify these with the Engineer before tendering. No claims for extra payment shall be entertained because of non-compliance of this requirement.

B REGULATIONS AND STANDARDS

Material, equipment, installations and workmanship shall comply with the requirements of the latest Editions of the following:

(a) Kenya Government By-laws.

(b) Relevant standards published by the Kenya Bureau of Standards.

(c) Relevant British Standards, Specifications & Codes of Practice; referred to as B.S. &B.S.C.P respectively in this document.

(d) Requirements of the clients proposed local L.P Gas Supplier for the sub-contract.

(e) This specification and the sub-contract drawings.

C L.P.GAS BULK STORAGE TANKS

The L.P Gas bulk storage tank shall be of horizontal cylindrical mild steel construction manufactured in compliance with the requirements of BS 5500 or ASME (American Society of mechanical Engineers) Codes. The storage tank shall have a nominal gas capacity of one ton.

The storage tank shall have the following minimum pressure requirements:-

Test Pressure: 26 bars

Working pressure: 17.5 bars

The tank shall be supplied complete with:

(a) Filing valve, magnetic float gauge, multi-valve and first stage regulator **all housed under a lockable-hinged cover**, forming integral part of the tank.

(b) Safety relief valve.

(c) Drain plug.

(d) Main isolating Valve.

(e) Lifting lug and mounting feet.

The tank shall be pickled and primed on the outside and painted with two coats of weather resistant paint in yellow ochre.

Apart from the above minimum specification for the bulk L.P Gas storage tank, the tenderer shall ensure that he has allowed for in his pricing of the tank any additional requirements needed by L.P. Gas supplier.

D PIPEWORK

The L.P. Gas pipe work installation shall comply with the requirements of B.S.C.P. 331: Part 3.

Pipes for L.P. Gas installations shall be galvanized mild steel tubing to B.S. 1387: Class C with Pipe threads to B.S. 21.

Pipe fittings shall be either welded or seamless wrought steel pipe fittings to B.S. 1740: Class C.

All joint in the pipework shall be made using non hardening jointing compound suitable for L.P gas. A union shall be provided on all straight runs of pipe work at a maximum interval of six meters.

Pipe work laid under ground shall be wrapped with pipe wrapping material having vapour permeability of less than $0.11 g/m^2/d$ at $25^{0}\,C$ and 75% relative humidity. The pipe wrapping material shall have high resistance to mineral acids, alkalis and salts and shall be on non-cracking and non-hardening characteristics.

Under ground L.P. Gas distribution pipe work shall be laid to a slope of 1 in 200. Gas service pipes, from the gas distribution pipes to the parts of building they service, shall be laid to rise from the distribution pipe at a slope of 1 in 200. All pipes under the ground shall rest throughout their length on a 150mm deep, flue sand topping, follow by an approved backfilling.

Where the pipe passes through the building fabric, it shall be located within a galvanized steel pipe sleeve, one diameter larger than the pipe passing through it. The void between the pipe and the sleeve shall be packed with bitumen or approved equal material.

Horizontal and vertical pipes within the building shall be fixed off the walls with brass built in brackets or spacer type steel pipe clips. The pipe supports spacing intervals for both the horizontal and vertical pipe runs shall be as follows:

Pipe nominal diameter:	15mm	Interval: 1.82 metres
:	20 & 25mm	: 2.44 metres
:	32 & 40mm	: 2.75 metres
:	50mm	: 3.00 metres
:	65mm	: 3.65 metres

The pipe work underneath the tables worktops to which shall be connected the gas outlets shall be made from gas quality copper.

E CHAINLINK FENCE

It shall be the responsibility of others to construct a concrete plinth of 150 mm thickness to support the tank and erect a 1.2m high chain link fence with lockable gates around the cylinders to protect them.

F GAS ISOLATION VALVE

The L.P. Gas isolation valves shall be quarter turn; lever operated ball valve of stainless steel construction.
The valve shall have "open" and "closed" positions clearly marked on the valve body.
The valves shall be as 'Saunders' or equal and approved.

G TESTING AND COMISSIONING

The whole pipe work system shall be pressure tested using compressed air. The test pressure shall be 7.0 bars, which shall be maintained for a period of six hours. If the pressure drops during this period, leaks in the pipe work shall be made good and the pressure test repeated for a further six hours.

The pressure test on pipe work shall be made before any part of the pipe work is concealed in any manner.

The bulk gas storage tank shall be pressure tested using water and compressed air. Test pressure of 25 bars shall be maintained for a period of six hours.

After completion of pressure tests and installation, the L.P. Gas installations shall be balanced to give the required gas flows at each gas user's point.

SECTION X: SCHEDULE OF UNIT RATES

CLAUSE No.

SPECIAL NOTES

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 approva**l 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: ……

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

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' name(s) and catalogue references are given, it is 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 shall be reinforced with hoop iron at 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 arrises, 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 Roads, Public Works and Housing “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

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.

ITEM	DESCRIPTION	AMOUNT (KSHS.)
	PARTICULAR PRELIMINARIES	
A	**PRICING ITEMS OF PRELIMINARIES** Prices **SHALL BE INSERTED** against items of "Particular and General Preliminaries" in the tenderer's priced Bills of Quantities. Preliminaries to the contract are mandatory conditions and responsibilities the contractor is required to fulfill for the complete and proper execution of the contract. The contractor is advised to read and understand all his obligations under preliminaries. Should he find that fulfillment of any of the items will lead to him incurring any cost not covered under measured works he shall price such works accordingly. Items for which no price is entered will not be paid for but shall be deemed covered by other rates and prices in these Bills of Quantities. Value Added Tax (V.A.T.) shall be included in the individual prices or rates at the rate of 16%.	
B	**DESCRIPTION OF THE WORKS AND SCOPE OF CONTRACT** The works to be carried out under this contract involve; **Construction of a Fire Station at Kutus Town, Kirinyaga County** as described in the Tender Bills of Quantities These are works in Erection and Completion of a Fire Station as described generally comprising of builder's works, electrical, mechanical and external/civil works	
C	**LOCATION OF SITE** The site of the works is located at Kutus Town, Kirinyaga County. The Contractor is advised to visit the site to familiarize with the nature and position of the site. No claims arising from the Contractor's failure to do so will be entertained.	
D	**MEASUREMENTS** 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.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
	THE TENDERER MUST PRICE THE FOLLOWING ITEMS	
	PROJECT MANAGER'S SUPERVISION EXPENSES	
A	Provide a provisional sum of Kenya Shillings Seven Hundred Thousand (Kshs.700,000.00) only for the Project Manager's Stationery and Supervision Expenses to be used as directed by the PM	700,000.00
B	Provide a provisional sum of Kenya Shillings One Hundred Thousand (Kshs.100,000.00) only for Airtime Expenses for 8no. Officers to be dispensed by the PM during the duration of the contract	100,000.00
	Allow for Contractor's profit and overheads for items A and B above (--%)	
	CLERK OF WORK EXPENSES	
C	Provide a provisional sum of Kenya Shillings One Hundred Thousand (Kshs.100,000.00) only for **Clerk of works** expenses	100,000.00
	Allow for Contractor's profit and overheads for item C above (--%)	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**TENDER DOCUMENTS** Tender documents are as listed in Clause 2.1 of the Instruction to Tenderer's Page STD/8	
B	**VIEWING OF DRAWINGS** Any tenderer interested in viewing the drawings related to this project before submission of the tenders may do so by contacting the **Director of Public Works, County Department of Transport, Roads and Public Works Head Office, Prisons Road, Kerugoya.**	
C	**PRICING RATES** The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, taxes, and all other incidental expenses, all to comply with the said Conditions of Contract.	
D	**FIRM PRICE CONTRACT** This is a firm price contract and, therefore the tenderer shall not be reimbursed for any increases in the costs of materials and/or labour in the execution of the works except as provided under the fluctuations clause.	
E	**VALUE ADDED TAX** The Contractor's attention is drawn to the Legal Notice in the Finance Act part 3 Section 21(b) operative from 1st September, 1993 which requires payment of VAT on all contracts. The contractor should therefore include allowance for V.A.T and other Government taxes currently in force for all his rates, provisional items and prime cost sums in this tender. The tenderer is advised that in accordance with Government public notice No. 35 & 36 Dated 11th September 2003 operational from 1st October 2003, VAT will be deducted against the contract sum at the prevailing rate by the Employer and remitted directly to the Commissioner of VAT through all interim certificates. It should however be noted that this is not additional tax but a new mode of payment for VAT, any excess payment will be refundable once the Contractor has submitted monthly returns to the Commissioner of VAT who will do the refunds when satisfied that the VAT regulations have been complied with. NB: The tenderers shall allow for for 16% V.A.T. in	
F	**STANDARD FORMS** Any tender with standard forms not filled as appropriate will be treated as non-responsive.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**DELIVERY OF TENDER** Tenders and all documents in connection therewith, as specified above must be delivered in the addressed envelope which should be properly sealed and deposited in the tender box as specified in the tender advertisement and or letter of invitation to tender. Tenders will be opened at the time specified in the advertisement and/or letter of invitation to tender. Tenders arriving later than the specified time will not be considered.	
B	**CORRECTION OF ERRORS IN TENDER** Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and the quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail.	
C	**BID SECURITY** The Bidder shall furnish, as part of his bid, a security as specified in the tender advertisement or letter of invitation to tender. The bid security shall, at the bidder's option, be in the form of a certified cheque, bank draft, standby letter of credit or guarantee duly signed, sealed and stamped from a bank or Insurance company which has been determined by the bidder to be acceptable to the Government. The format of the bid security shall be in accordance with the sample forms of bid security included in the post qualification forms, other formats may be permitted, subject to the prior approval of the Government. **Bid Security shall be valid for a period of Thirty (30) days beyond the tender validity period.**	
D	**TENDER VALIDITY** "Clause 3.6 of the Instructions to Tenderers has been amended to read: **"Tenders shall remain valid for a period of Ninety (90) days from the date of Tender Opening.** All Tenderers are advised to note this amendment when filling the Form of Tender".	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**PERFORMANCE BOND** A bond of **5% of the contract sum** will be required in accordance with Clause 28 on award of contract of the Instructions to Tenderer's. No payment on account for the works executed will be made to the contractor until he has submitted valid Performance Bond to the EMPLOYER duly signed, sealed and stamped from an approved Bank or Insurance Company.	
B	**CONTRACT COMPLETION PERIOD** The contract completion period in accordance with condition 31 of the Conditions of contract must be adhered to. The PROJECT MANAGER shall strictly monitor the Contractors progress in relation to the progress chart and should it be found necessary the PROJECT MANAGER shall inform the Contractor in writing that his actual performance on site is not satisfactory. In all such cases the Contractor shall accelerate his rate of performance production and progress by all means such as additional labour, plant, e.t.c and working overtime all	
C	**URGENCY OF THE WORKS** The Contractor is notified that these " works are urgent" and should be completed within the period stated in Contract Agreement. The Contractor shall allow in his rates for any costs he/ she deems that he/she may incur by having to complete these works within the stipulated contract period.	
D	**PROGRESS CHART.** The Contractor shall provide within two weeks of Possession of Site and in agreement with the PROJECT MANAGER a Progress Chart for the whole of the works including the works of Nominated Sub-Contractors; one copy to be handed to the PROJECT MANAGER and a further copy to be retained on Site. Progress to be recorded and chart to be amended as necessary as the work proceeds.	
E	**INSURANCE** The Contractor shall insure as required in Condition No.30 of the Conditions of contract. No payment on account of the work executed will be made to the Contractor untill he has satisfied the PROJECT MANAGER either by production of an insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clause have been complied with in all respects. Thereafter the PROJECT MANAGER shall from time to time ascertain that the premiums are duly paid up by the Contractor, who, if called upon to do so, shall produce receipted premium renewals for the PROJECT MANAGER's inspection.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**WORKING CONDITIONS** The Contractor shall allow in his rates for any interferance that he may encounter in the course of the works for the Client may in some cases ask the Contractor not to proceed with the works until some activities within the site are completed, **as the offices will be operational as usual during the course of the contract.**	
B	**PREVENTION OF ACCIDENT, DAMAGE OR LOSS** The Contractor is notified that these works are to be carried out on a restricted site where the client is going on with other nomal activities. The Contractor is thus instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of activities beeing carried out by the Client. The Contractor shall allow in his rates any expense he deemes necessary by taking such care within the site.	
C	**EXISTING BUILDINGS AND SERVICES** Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and he/she shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services.	
D	**ADJOINING PROPERTY** The contractor is advised to take all necessary precautions to prevent damage to adjoining property. Any damage occurring must be made good to the satisfaction of the PROJECT MANAGER and/or owner(s) of the adjoining property at the contractor's expense.	
E	**LABOUR CAMPS** The Contractor shall not be allowed to house labour on site. Allow for transporting workers to and from the site during the tenure of the contract.	
F	**NCA, NEMA, WELFARE, OCCUPATIONAL HEALTH AND SAFETY STATUTORY REQUIREMENTS** The Contractor must take all necessary measures to ensure total compliance in all respects with the current statutory requirements in relation to the National Construction Authority, National Environment Management Authority, Public/ Occupational Health and Safety and Staff / Workers Welfare during the both the contract and defects liability periods.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**HOARDING** The Contractor shall enclose all the site under construction with a hoarding 2400 mm high consisting of iron sheets gauge 30 on 100 x 50 mm 2nd grade treated sawn cypress timber posts firmly secured at 1800 mm centres with two 75 x 50 mm 2nd grade treated sawn cypress timber rails. The Contractor is in addition required to take all precautions necessary for the safe custody of the works, materials, plant, public and Employer's property on the site. Advertisements shall not be displayed on the hoarding unless the prior permission of the PROJECT MANAGER in writing has been obtained.	
B	**USE OF SITE** The contractor shall not use the site for any other purpose other than carrying out the contract works.	
C	**PAYMENTS** The tenderer's attention is drawn to the fact that the COUNTY GOVERNMENT SHALL NOT MAKE ANY ADVANCE PAYMENTS. Payments are shall only be made for work done and materials delivered to site: all in accordance with Clause 23 of the Conditions of Contract Agreement. In order to facilitate this, a list of the general component elements for the works is given at the summary page of these specifications and the tenderer is requested to break down his tender sum commensurate to	
D	**PAYMENT FOR MATERIALS ON SITE** All materials for incorporation in the works must be stored on site before payment is effected, unless specifically exempted by the PROJECT MANAGER. This is to include materials of the Contractor, nominated sub-Contractors and nominated suppliers.	
E	**CLAIMS** It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and / or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such a claim or intent to claim notice to the PROJECT MANAGER in accordance with Clauses 19 and 24 of the conditions of contract within the contract period. No claim shall be entertained if the contractor has not complied with the said conditions or upon the expiry of the said contact	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**PROJECT IDENTIFICATION AND PUBLICITY SIGNBOARD** The Contractor shall provide, erect and maintain throughout the contract period and remove on completion when so directed by the PROJECT MANAGER 1No. Project Identification and Publicity Signboard of approved size and construction showing the following information in approved lettering / signage as designed, detailed, specified, and approved by the PROJECT MANAGER. (i) The Project Title (ii) The Client (County Government of Kirinyaga) (iii) The location of the Project (County Ward) (iv) The Financial Year applicable (v) The Project Initiator/Sponsor (vi) The Authorised Client Representative (vii) Overall Responsilibilty (viii) The Project Manager (ix) The Contractor (x) The Nominated Subcontractors (if applicable)	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
II	**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: - **Period of Final Measurement** 3 Months From Practical completion **Defects Liability Period** 6 Months from Practical completion **Date for Possession** To be agreed with the Project Manager **Date for Completion** To be **28 Weeks** from the date of Site Possession **Liquidated and Ascertained damages** At the rate of **Kshs: 0.05% of contract sum** per day or part thereof **Period of Interim Certificates** Monthly **Period of Honouring Certificates** 30 days **Percentage of Certified Value Retained** 10% **Limit of Retention Fund** 10% **The Price Adjustment Clause SHALL NOT apply** Price for **VAT** should be included in the tenderer's rates	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
	COLLECTION	
	Brought forward from page PP/1	
	Brought forward from page PP/2	
	Brought forward from page PP/3	
	Brought forward from page PP/4	
	Brought forward from page PP/5	
	Brought forward from page PP/6	
	Brought forward from page PP/7	-
	Brought forward from page PP/8	
	TOTAL FOR PARTICULAR PRELIMINARIES CARRIED TO GRAND SUMMARY	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
	GENERAL PRELIMINARIES	
A	**PRICING ITEMS OF PRELIMINARIES AND PREAMBLES** **Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specifications.** 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.	
B	**ABBREVIATIONS** Throughout these Bills, units of measurement and terms are abbreviated and shall be all the requirements for the proper execution of the whole of the works in the Contract. *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	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**METHOD OF MEASUREMENT** Notwithstanding any contrary provision in the conditions of contract all quantities shall be deemed to have been prepared in accordance with current edition of the Standard Method of Measurement of Building Works for the Republic of Kenya. The rates set down by the contractor against each item in the particular specifications shall, unless otherwise expressly provided to the contrary, or unless there is a separate item for extra labour, cutting or waste, be held to include for waste of materials, carriage and cartage, carrying in and return of empties, hoisting, setting, fitting and fixing in position, making and all other labour and everything else necessary for the proper completion of each item and for establishment charges and profit. Each items of cutting shall include for consequent waste.	
B	**EXCEPTIONS TO THE STANDARD METHOD OF MEASUREMENT** ***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 and shall be deemed to include: allowing use of standing scaffolding, messrooms, sanitary conditions and welfare facilities; provision of special scalfolding where necessary, 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 and the like necessary for the execution and testing of Sub- Contractors' work and being responsible for the ***Fix Only:-*** "Fix Only" shall mean take delivery at nearest major supply centre, pay all demurrage charges, load and transport to site where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.	
C	**ALTERATIONS TO BILLS, PRICING, ETC.** Any unauthorised alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The Contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the priced Bills of Quantities. All items of measured work shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**EMPLOYER** The "Employer" is the COUNTY GOVERNMENT OF KIRINYAGA.The term "Employer" and "Government" wherever used in the contract document shall be synonymous	
B	**PROJECT MANAGER** The term "PROJECT MANAGER" wherever used in these Bills of Quantities shall be deemed to imply the person defined in Condition 1 of the Conditions of Contract hereby attached or such person or persons as may be duly authorised to represent him on behalf of the Government.	
C	**ARCHITECT** The term "Architect" shall be deemed to mean "The PROJECT MANAGER" as defined above whose address unless otherwise notified is the **County Department of Transport, Roads and Public Works**, P.O. Box 390, KERUGOYA.	
D	**QUANTITY SURVEYOR** The term "Quantity Surveyor" shall be deemed to mean "The PROJECT MANAGER" as defined above whose address unless otherwise notified is the **County Department of Transport, Roads and Public Works**, P.O. Box 390, KERUGOYA.	
E	**ELECTRICAL ENGINEER** The term "Electrical Engineer" shall be deemed to mean "The PROJECT MANAGER" as defined above whose address unless otherwise notified is the **County Department of Transport, Roads and Public Works,** P.O. Box 390, KERUGOYA.	
F	**MECHANICAL ENGINEER** The term "Mechanical Engineer" shall be deemed to mean "The PROJECT MANAGER" as defined above whose address unless otherwise notified is the **County Department of Transport, Roads and Public Works,** P.O. Box 390, KERUGOYA.	
G	**STRUCTURAL ENGINEER** The term "Structural Engineer" shall be deemed to mean "The PROJECT MANAGER" as defined above whose address unless otherwise notified is the **County Department of Transport, Roads and Public Works,** P.O. Box 390, KERUGOYA.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**FORM OF CONTRACT** The form of contract will be the one included in the Republic of Kenya's (PPOA) Standard Tender Document for Procurement of Works (2006 Edition) hereby attached and Conditions of Contract are those attached thereto. If the Contractor considers that compliance with any of the Conditions of Contract involves any expenses distribute them among his rates for the various items in the Bills of Quantities. No claim shall be allowed arising from the Contractors compliance with **any of the Conditions of Contract**. These are numbered from 1 to 37 as set out on pages 18 to 40 of these tender documents. Particulars of the insertion to be made in the Appendix of the Appendix of the Contract Agreement will be found in the The Conditions of Contract are also included herein ***Conditions of Contract*** These are as contained in 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	
B	**GENERAL SPECIFICATIONS.** 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, 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.	
C	**WORKS** Except as amplified under the item "Insurance" in these Preliminaries, the word "Works" in the Particular Specification shall include the work of all sub contractors and shall include all the approved variations.	
D	**VISIT SITE AND EXAMINE DRAWINGS.** 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 his tender. No claim arising from his failure to comply with this recommmendation will	
E	**AREA TO BE OCCUPIED BY THE CONTRACTOR** The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the PROJECT MANAGER.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**ACCESS TO SITE AND TEMPORARY ROADS.** 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 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, culverts, bridges, etc.and make good and reinstate all works and surfaces disturbed to the satisfaction of the PROJECT MANAGER.	
B	**WATER AND ELECTRICITY SUPPLY FOR THE WORKS** 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.	
C	**SANITATION OF THE WORKS** The Sanitation of the works shall be arranged and maintained by the Contractor in accordance with Public Health and Labour Departments requirements and to the satisfaction of the the PROJECT MANAGER. The Pit latrines shall be enclosed with framing and corrugated iron sheet roof, side and partition. The site of the latrine shall be agreed with the PROJECT MANAGER and the works shall not be commenced beforethe sanitary accommodation has been approved by the PROJECT MANAGER and the above mentioned authorities. The contractor will beeqiured to pay employ sufficient sewwpers on the site to ensure clean maintenance and daily disinfecting of the latrines and not less than once per week, the whole area and the enclosures shall be sprayed with disinfectant and insectcide and on completion the works, the latrines shall be removed and all works and surfaces disturbed made good and the whole area disinfected and left clean and free from pollution to the satisfaction of the PROJECT MANAGER and local authorities.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**SECURITY OF WORKS ETC.** The Contractor shall be entirely responsible for the security of all the works stores, materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public. No claim will be entertained from the Contractor for not maintaining adequate security for both the works and workers.	
B	**OFFICE FOR THE PROJECT MANAGER** 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 maintain a lock-up pedestral 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 Government and Medical Officer of Health and pay the services of a cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencemet to the completion of the works and dismantle and make good disturbed surfaces. The office and closet shall be complete before the contractor is permitted to commence the works. The Contractor shall make available on site as and when required by the PROJECT MANAGER a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic linen tape.	
C	**CONTRACTOR'S SUPERINTENDENCE/SITE AGENT** The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the PROJECT MANAGER and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	
D	**TRANSPORT.** Allow for transport of workmen, materials, etc., to and from the site at such hours and by such routes as may be permitted by the competent authorities.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**SCAFFOLDING, PLANT, TOOLS AND VEHICLES** Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described hereiin. No timber used for formwork, scalffolding or temporary works of any kind shall be used afterwards in the permanent work.	
B	**SETTING OUT** The PROJECT MANAGER shall furnish to the contractor either by way of carefully dimensioned drawings or by personnel supervision at the time of setting out the works such information as shall enable the contractor to set out the enclosing walls of the building at ground level after which the contractor shall be responsible and shall at his own cost amend any errors arising from his own inaccurate setting out unless the PROJECT MANAGER shall state otherwise in writing.	
C	**MATERIALS AND WORKMANSHIP.** All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also order materials from local sources as early as necessary to ensure that they are on site when required for use in the the works. The Bills of Quantities shall not be used for the purpose of ordering	
D	**STORAGE OF MATERIALS** The Contractor shall provide at his own risk and cost where directed on the site weatherproof lockup sheds for the safe storage and custody of materials for the works and for the use of workmen engaged thereon and shall remove such 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.	
E	**MATERIALS ON SITE** All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the PROJECT MANAGER. This includes the materials of the Main Contractor, Nominated Sub-Contractors and Nominated Suppliers.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**MATERIALS ARISING FROM EXCAVATIONS** 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.	
B	**MATERIALS FROM DEMOLITIONS** Any materials from demolitions and not re-used shall become the property of the Client/User. The Contractor shall allow in his rates for the cost of transporting, storing and securing the materials on site as directed by the PROJECT MANAGER.	
C	**SIGN FOR MATERIALS SUPPLIED.** The Contractor will be required to sign a receipt for all articles and materials supplied by the PROJECT MANAGER at the time of taking delivery thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and 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.	
D	**PUBLIC AND PRIVATE ROADS.** 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	
E	**EXISTING PROPERTY.** 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	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**QUALITY OF THE WORKS** The works should be of high quality and the contractor will be required to make samples of the work to be executed for approval by the PROJECT MANAGER before he commences the carrying out of the works. The contractor should allow for sample works in his rates accordingly. Incase a sample does not meet the standards set by the Project Manager, the contractor shall be expected to make another sample at his cost until it is approved by the PROJECT MANAGER.	
B	**SAMPLES** 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 Materials Branch, Ministry of Transport and Infrastructure. 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.	
C	**GOVERNMENT ACTS REGARDING WORKPEOPLE ETC.** Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the Contractor's attention is drawn to the provisions of the Factory Act 1950 and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurances, pensions and holidays for workpeople or so the safety, health and welfare of the workpeople. The Contractor must make himself fully acquainted with current Acts and Regulations, including Police Regulations regarding the movement, housing, security and control of labour, labour camps , passes for transport, etc. It is most important that the Contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the organisation of the works, supply and control of labour, etc., and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**SUPERVISION AND WORKING HOURS** The works shall be executed under the direction and to the entire satisfaction in all respects of the "PROJECT MANAGER" who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract. The working hours shall be those generally worked by good employers in the in the Building and Civil Engineering trades in Kenya. No work shall be carried out at night or on gazetted holidays unless the PROJECT MANAGER shall so direct. No work shall be covered up nor shall any concreting be carried out in the in the absence of the Clerk of Works without prior approval of the PROJECT MANAGER in writing.	
B	**PROTECTION OF THE WORKS.** 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.	
C	**BLASTING OPERATIONS** Blasting will only be allowed with the express permission of the PROJECT MANAGER in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost in accordance with any Government regulations in force for the time being, and any special regulations laid down by the PROJECT MANAGER governing the use and storage of explosives.	
D	**REMOVAL OF RUBBISH AND SITE CLEARANCE ETC.** 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	
E	**WORKS TO BE DELIVERED UP CLEAN** Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings, glass inside and outside and any other parts of the works and remove all marks, blemishes, stains and defects from joinery, fittings and decorated surfaces generally, polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the PROJECT MANAGER.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**PROVISIONAL SUMS.** 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 mentioned in Condition No. 16 of the conditions of Contract. Such sums are net and no addition shall be made to them for profit.	
B	**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 as described for variations in condition No. 22 of the Conditions of Contract, but should any part of the contract be executed by a nominated Sub-Contractor, or any articles for the Work 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.	
C	**PRIME COST (OR P.C.) SUMS.** 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 mentioned in Condition No. 16 of the conditions of Contract. Persons or firms nominated by the PROJECT MANAGER to execute work or to provide and fix materials or goods as stated in **Condition No. 20** of the Conditions of Contract are described herein as Nominated Sub-Contractors. Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers.	
D	**ADJUSTMENT OF P.C. SUMS.** 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 provide 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.	
	Total to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**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 as described in Condition No 8 of the Conditions of Contract 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".	
B	**DIRECT CONTRACTS** 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 the instances, profit relative to the P.C. Sum the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.	
C	**ATTENDANCE UPON OTHER TRADESMEN, ETC.** 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	
D	**PROVISIONAL WORK** 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.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT (KSHS.)
A	**TRAINING LEVY** Legal notice No. 237 of October, 1971 requires payment by the contractor of a training levy of a quarter percent (1/4 %) of the value of the contract where the contract value exceeds KShs. 50,000/=. The contractor will be required to furnish the PROJECT MANAGER with a receipt showing that he has paid the required Training Levy to the Director of Industrial Training. In case the contractor fails to furnish the said receipt to thePROJECT MANAGER, the Client will pay the amount to the Director of Industrial Training from monies due to the contractor.	
	Carried to collection	
	COLLECTION Brought forward from page GP/1 Brought forward from page GP/2 Brought forward from page GP/3 Brought forward from page GP/4 Brought forward from page GP/5 Brought forward from page GP/6 Brought forward from page GP/7 Brought forward from page GP/8 Brought forward from page GP/9 Brought forward from page GP/10 Brought forward from page GP/11 Brought forward from page GP/12 Brought forward from page GP/13 Brought down from above	
	TOTAL FOR GENERAL PRELIMINARIES CARRIED TO GRAND SUMMARY	

BILL NO. 1: BUILDERS' WORKS					
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	FIRE STATION				
	ELEMENT NO. 1				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	Oversite excavation				
A	Clear site of small bushes, grub up roots, load and cart away.	715	sm		
B	Excavate oversite to remove top soil average 200mm deep and keep on site for later re-use (for landscaping)	715	sm		
	Excavation				
C	Excavate to reduce levels commencing from stripped level not exceeding 1.50 meters deep.	200	cm		
D	Excavate foundation trenches for strip foundations starting from reduced level not exceeding 1.50 meters deep.	332	cm		
E	Ditto; but for column bases ditto	47	cm		
F	Extra-over all excavation for excavating in rock irrespective of class	50	cm		
G	Return, fill-in and ram selected excavated materials around foundations	207	cm		
H	Remove and cart away surplus excavated materials.	173	cm		
	Total carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
	Diposal of water				
A	Keeping all excavations free from all water including spring or running water		Item		
	Planking and strutting				
B	Uphold the sides of all excavations		Item		
	Filling				
C	Hardcore filling in making up levels,exceeding 300mm thick in layers of 150mm maximum thickness	100	cm		
D	Ditto; but to receive concrete floor bed (m.s.) maximum 500mm thick in layers a.b.d.	155	cm		
E	Ditto; but maximum thickness 300mm thick ditto	406	sm		
F	50mm (average) thick quarry dust blinding to surfaces of hardcore	715	sm		
	Antitermite treatment				
G	Premise 200 SC' or other equal and approved anti-termite insecticide treatment with ten years guarantee, applied strictly in accordance with manufacturer's instructions, to tops of fill and foundation walls	715	sm		
	Concrete				
H	50mm thick mass concrete class Q (1:3:6) to bottoms of foundations	253	sm		
	Total carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
	Insitu concrete; reinforced; class 25 / (20mm); vibrated				
A	Strip foundations	44	cm		
B	Column bases	11	cm		
C	Columns	2	cm		
D	Ground beams	9	cm		
E	150mm thick bed; level	406	sm		
F	200mm thick; Ditto	309	sm		
	Reinforcement				
	Bars; high yield steel; cold worked to B.S. 4461 including bends, hooks, tying wire and distance blocks				
G	12mm Diameter	1,274	kg		
H	10mm; ditto	1,734	kg		
J	8mm; ditto	385	kg		
K	Fabric; B.S. 4483 Reference A142 mesh 200 x 200 mm , weight 2.22 kgs per square meter (measured net - no allowance made for laps) including bends, tying wire and distance blocks	406	sm		
L	Ditto; but laid in 2no. Layers and spaced as approved and to engineer's specifications	309	sm		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
	Sawn formwork to insitu concrete as described to:-				
A	Edges of ground floor slab; 75 to 150mm wide	85	lm		
B	Ditto; but in slab exceeding 150mm not exceeding 300mm width	26	lm		
C	Ditto; but to edges of strip foundations, ditto	738	lm		
D	Sides of column bases	30	sm		
E	Sides of columns	25	sm		
F	Sides of ground beams	92	sm		
	Walling				
G	200mm thick approved natural stone; local; roughly squared to foundation walling; bedding and jointing in cement sand (1:3) mortar	579	sm		
	Damp proofing				
H	Polythene sheet; 1000 gauge, 200mm welted laps (no allowance made to laps), horizontal; 1 no. layer laid on compacted quarry dust blinding	715	sm		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
	Insitu Finishings				
A	14mm thick 2 No. coatwork cement sand (1:3) render; wood floated to concrete or blockwork base to walls; external	66	sm		
	Prepare and apply three coats bituminous paint to:				
B	Wood floated rendered plinths over 300mm girth	66	sm		
	Paving Slabs.				
C	600 x 600 x 50 mm Precast concrete class 20/20 paving slabs, laid to falls on blinded hardcore surface and jointed in cement and sand (1:3) mortar	68	sm		
	Total Carried to Collection Below				
	COLLECTION				
	From page ST/1				
	From page ST/2				
	From page ST/3				
	From page ST/4				
	From above				
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ELEMENT NO. 2				
	RC SUPERSTRUCTURE				
	Reinforced concrete; class 25 / (20mm); vibrated in:				
A	Beams	25	cm		
B	Ditto; but arched to 1360mm radius	1	cm		
C	Columns	5	cm		
	Bars; high yield steel; cold worked to B.S. 4461 including bends, hooks, tying wire and distance blocks				
D	D12	2,079	kg		
E	D8	984	kg		
	Supply and fix sawn formwork as described to;				
F	Sides and soffits of ringbeams	322	sm		
G	Ditto; but curved to 1360mm radius	8	sm		
H	Sides of columns	69	sm		
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ELEMENT NO. 3				
	WALLING				
A	200mm wide; B.S. 743 Type A bitumen hessian base 150 mm laps (no allowance made for laps); horizontal, 1 no. layer, bedded in cement sand (1:3) mortar	306	lm		
B	150mm wide; ditto	19	lm		
	Smooth chisel dressed natural stone walling in cement and sand (1:4) mortar reinforced with and including 25 x 3mm thick hoop iron in every alternate course in:				
C	200mm Thick walling: ready to receive plaster (m.s)	693	sm		
D	150mm Thick: ditto	57	sm		
E	200mm Thick parapet walling; ditto	26	sm		
F	150mm Thick precast concrete lourvre block walling; bedded and jointed as described	40	sm		
	Precast Concrete Coping				
G	300mm (600mm long) x 50mm thick half round precast concrete (class 20/20) coping, reinforced with 2no. 10mm H.T.S. bars; hoisting and bedding in cement/sand (1:3) mortar and making flush joints	43	lm		
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ELEMENT NO. 4				
	ROOF (ALL PROVISIONAL)				
	Prepainted 28gauge IT5 iron sheets as "MRM" or equal and approved nailed to purlins in:				
A	Roof covering; 150mm laps on one end and one and a half corrugation side lap; nailed to purlins (m.s.) with and including self-tapping screws and neoprene washers.	943	sm		
B	Close fitting and matching half-round ridge cover	39	lm		
	The following in welded steel trusses spanning 11,400mm wide; including hoisting and placing average 3000mm above floor slab level.				
C	125 x 50 x 2mm thick purlins	871	lm		
D	75 x 50 x 2mm thick rectangular hollow section wall plate	179	lm		
E	100 x 50 x 2mm thick; ditto in truss rafters	88	lm		
F	Ditto; but in tie beams	88	lm		
G	75 x 50 x 2mm thick ditto; truss rafters	212	lm		
H	Ditto; but in tie beams	193	lm		
J	Ditto; but in kingpost	34	lm		
K	Ditto but ridge board	39	lm		
L	50 x 50 x 2mm thick strut/tie	230	lm		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ROOFING (CONTINUED)				
	Eaves finishing				
A	25x200mm wrot cypress fascia/barge board nailed to rafters (m.s.)	167	lm		
	Painting Prepare and apply one coat of calcium plumbate and two coats of gloss oil paint to:				
B	General surfaces of wood exceeding 200mm but not exceeding 300mm girth.	167	lm		
	Rain Water Disposal goods in approved heavy gauge uPVC fittings and accessories:				
C	150mm diameter gutter with socketed joints in the running length fixed to timber fascia board (m/s) with brackets (m/s) at 900mm centers	116	lm		
D	Extra over gutter for support brackets	134	no		
E	Ditto; for End Stops	14	no		
F	Ditto; for Angles	2	no		
G	Ditto; for Central Outlet for 75mm diameter downpipe (m/s)	29	no		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ROOFING (CONTINUED)				
A	75mm diameter rainwater downpipe fixed to masonry/ concrete surfaces with compartible strap/clips at 900mm centres	102	lm		
B	Extra over ditto downpipe for swanneck outlet	29	no		
C	Ditto; for support clips	118	no		
D	Extra over downpipe for water shoe	29	no		
	Carried to collection below				
	COLLECTION				
	From page ST/8				
	From page ST/9				
	From page above				
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ELEMENT NO. 5				
	DOORS				
	Roller shutters The following in purpose made heavy duty high quality galvanized steel manual roller shutters complete with and including all necessary standard accessories; all rollers, railing, framing, lugging, locking devices and the like to be standard or as specified. All including hoisting and fixing in position:				
A	Size 4700 x 4000mm high	4	no		
	Steel casement doors The following purpose made mild steel double leafdoors complete with and including glazing as approved; in heavy duty Z and T sections. Framing, transomes, mullions and hinges to an approved design; with and including 12mm diameter bar grilles with approved lugging and a 3-lever mortice lock as "Union" or equal and approved: hoisting and fixing in position including bedding frame all round with cement/sand mortar (1:3); casement primed before fixing.				
B	Overall size 1500 x 2700mm high	1	no		
C	Overall size 1200 x 2700mm high	4	no		
D	Ditto but single door; overall size 900 x 2700mm high	9	no		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	DOORS (CONTINUED)				
	Flush Doors				
	Wrot Cypress framed frames and framings				
A	100 x 50 mm; 2 No. labours; plugged door frame	121	lm		
B	Ditto; 4 No. labours; in transom	10	lm		
C	40 x 35 mm moulded architrave	121	lm		
D	25 x 25mm moulded quadrants	121	lm		
	45mm Thick semi solid core flush doors to B.S 459: part 2 veneered both sides with internal quality plywood and lipped on all edges in approved hardwood				
E	Single swing door size 900 x 2100 mm high	22	no		
F	Double door overall size 1000 x 2100mm high in 2no. equal leaves	1	no		
	Fanlight				
G	Fanlight overall size 900x600mm high comprising 5mm thick clear sheet glass secured with a 50x25mm thick hardwood beading to match frame.	11	no		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	DOORS (CONTINUED)				
	Iron mongery Supply and fix the following to UNION catalogue or other equal and approved				
	Fix the following iron mongery with matching screws to hardwood/softwood.				
A	Two lever Brass mortice lock complete with approved brass lever handle furniture.	11	no		
B	Indicator bolts	11	no		
C	100mm brass-plated butt hinges	36	prs		
	To concrete or masonry; fixing with bolts; plugging				
D	Rubber door stop complete with 38 mm rawl bolt	43	no		
E	150mm long fish tailed door cramps	138	no		
F	Approved plastic female and male toilet door plates fully engraved	7	No		
G	Approved plastic door plates fully engraved with title of office holder	22	No		
H	Brass hat and coat hooks	60	No		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	DOORS (CONTINUED)				
	Painting and Decorations				
	Aluminium primer or other equal and approved wood primer before fixing: -				
A	Backs of frame, board, etc over 100mm but not exceeding 200mm girth	121	lm		
	Knot, prime and stop; prepare and apply one coat stain and two coats of clear varnish				
B	Frames; over 200mm but not exceeding 300mm girth; internal	131	lm		
	Prepare and apply three coats of polysterine clear varnish				
C	General surfaces of timber doors internally and externally	87	sm		
	Prepare and apply one undercoat and two finish coats of high gloss oil paint to:-				
D	General surfaces of steel doors (both sides measured flat)	78	sm		
	Carried to collection below				
	COLLECTION				
	From page ST/11				
	From page ST/12				
	From page ST/13				
	From above				
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ELEMENT NO. 6				
	WINDOWS				
	Moulded precast concrete window sill weathered and throated, reinforced as necessary, finished fair faced including hoisting and bedding in cement/sand (1;3) mortar.				
A	150 x 25mm thick window sill	40	lm		
	Curtain rods;				
	20mm diameter heavy duty twin brass coated rod complete with and including curtain rings proportionate to the length, end ornaments and all other accessories to PM's approval				
B	2700mm long	2	no		
C	2400mm long	2	no		
D	1800mm long	3	no		
E	1500mm long	9	no		
F	1100mm long	1	no		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	METAL WORK				
	PURPOSE - MADE UNITS				
	Supply, assemble and fix the following purpose-made mild steel casement windows; standard heavy duty metal SHS sections from approved manufacturer complete with frames, transomes, mullions and with and including permanent ventilators 600mm high on the top side to full length of window comprising 3mm thick flat steel bar lourves with mosquito gauze, coupling mullions: all complete with 25x25x2mm thick SHS steel bar grilles (spaced in 200mm centers both ways), stays, fasterners and all other necessary ironmongery with one coat manufacturer's primer; all welding ground to smooth finish.				
	Steel; for glazing with putty, lugs to two jambs, cutting and pinning to concrete or blockwork, fixing to head and sill with screws; plugging				
A	Window, overall size 3600 X 1050mm high with fixed/openable lights as approved	1	no		
B	Ditto; 2400 X 1800mm high ditto	3	no		
C	Ditto; 2400 X 1650mm high ditto	1	no		
D	Ditto; 2100 X 1650mm high ditto	2	no		
E	Ditto; 1800 X 1050mm high ditto	1	no		
F	Ditto; 1500 X 1650mm high ditto	3	no		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	WINDOWS (CONTINUED)				
A	Ditto; in window overall size 1200 X 3500mm high ditto	2	no		
B	Ditto; 1200 X 2400mm high ditto	4	no		
C	Ditto; 1200 X 1650mm high ditto	3	no		
D	Ditto; 1200 X 1050mm high ditto	4	no		
E	Ditto; 900 X 1650mm high ditto	1	no		
	LOUVRED WINDOWS				
F	Louvre window overall size 1500x1650mm high fabricated in 500 x150 x 5mm thick clear sheet glass louvres with polished edges, fixed to adjustable zinc coated steel louvre window carriers. All to be supported on 100x50mm wrot cypress framing and quadrants all round and 2no. matching mullions to create 3no. equal partitions. All including priming, hoisting and plugging/fixing in position.	2	no		
	GLAZING				
G	4mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with putty	59	sm		
H	Ditto; obscure	11	sm		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	WINDOWS (CONTINUED)				
	Painting and Decorations				
	Painting to Wood work Aluminium primer or other equal and approved wood primer before fixing: -				
A	Backs of frame, board, etc over 100mm but not exceeding 200mm girth	6	lm		
	Knot, prime and stop; prepare and apply one coat stain and two coats of clear varnish				
B	Frames; over 200mm but not exceeding 300mm girth; internal	10	lm		
	On Metal work Prepare and apply three coats oil paint super gloss as "Crown" or other equal and approved to: -				
C	General window surfaces; over 300mm girth internal	69	sm		
D	General window surfaces; over 300mm girth external	69	sm		
	Total Carried to Collection Below				
	COLLECTION				
	From page ST/15				
	From page ST/16				
	From page ST/17				
	From above				
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	ELEMENT NO. 7				
	FINISHES				
	External Finishes				
	Insitu finishes				
	Ruff and Tuff				
A	Prepare and apply two coats of "Crown; ruff and tuff" or any other equal and approved wall master finish to cement/sand render backing (m.s.)	433	sm		
	Cement/sand backings				
B	Render backing; 15mm thick, 1 No. coatwork of cement and sand (1:3); wood floated to concrete or blockwork base to receive finish (m.s.): -	433	sm		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	Internal Wall Finishes				
	Plaster; 15mm thick, 2 No. coatwork, 12mm first coat of cement sand (1:3); 3mm second coat of cement and lime putty (1:9); steel trowelled to concrete or blockwork base				
A	Walls; internal	996	sm		
	Tile, Slab or Block Finishings				
	Approved ceramic tiles to B.S. 1281; local; white glazed wall tiles to regular or approved other pattern; bedding and jointing in cement sand (1:4) mortar, grouting with white cement				
B	6mm thick; butt joints straight both ways; to cement sand base (m/s) to walls internal	235	sm		
C	Aluminium edging (provisional)	207	lm		
	Beds or Backings				
	Screed; cement and sand (1:3)				
D	14mm thick one coat backings; wood floated to receive ceramic tiles (m/s) to concrete or blockwork base; to walls internal	235	sm		
	Prepare and apply one undercoat and three coats of first quality emulsion paint to the following surfaces				
E	Plastered walls; internal	996	sm		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	Insitu Floor Finishings				
	20mm thick, 2No. Coat work terrazzo; approved colour; cement and marble chippings (1:2); washed; to concrete or blockwork base generally to:				
A	Floors; level	295	sm		
B	Matching terrazzo skirtings; 150mm wide; rounded junction with wall finish and moulded junction with floor finish.	70	lm		
C	32 x 3 mm thick aluminium dividing strips set in terrazzo finish (m.s.)	442	lm		
	Floor tiles 450x450x8mm Thick ceramic floor tiles of approved colour as "SAJ or R.A.K". applied to floor screed (m.s.) in approved adhesive				
D	Floor level; internal	359	sm		
E	100mm high skirting to match ceramic tile floor finish a.b.d.	450	lm		
	Screed; cement and sand (1:3)				
F	32 mm thick one coat backings; wood floated to receive ceramic tile floor finish (m.s.) to concrete base; to floors level; internal	359	sm		
G	20mm thick ditto; to receive terrazzo finish (m.s.) ditto	295	sm		
	Total Carried To Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	Ceiling finishes				
	Plain sheet finishings				
A	12mm thick softboard ceiling, V-jointed and nailed to brandering (m.s.).	359	sm		
B	Extra over for trap door size 600x600mm complete.	4	no		
C	75 x 12mm thick moulded hardwood cornice	450	lm		
D	75x50mm thick sawn cyrpress brandering jointed or otherwise plugged to walls at 600mm centers boths ways	761	lm		
E	50x50mm thick ditto	761	lm		
	Painting and Decorations Prepare and apply one undercoat and two coats of first quality emulsion paint as "Duracoat" or equivalent to the following surfaces:				
F	Softboard surfaces in ceiling	359	sm		
G	Hardwood surfaces not exceeding 100mm girth.	450	lm		
	Total Carried to Collection Below				
	COLLECTION				
	From page ST/19				
	From page ST/20				
	From page ST/21				
	From above				
	Total Carried To Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SECTION SUMMARY				
ELEMENT NO.	TITLE	PAGE NO.			K.SHS.
A	SUBSTRUCTURE WORKS		ST/5		
B	RC FRAME		ST/6		
C	WALLING		ST/7		
D	ROOF CONSTRUCTION.		ST/10		
E	DOORS		ST/14		
F	WINDOWS		ST/18		
G	FINISHES		ST/22		
	Total Carried To Grand Summary				

BILL NO. 2 : CIVIL WORKS					
ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	EXTERNAL WORKS				
	SUBSTRUCTURES (ALL PROVISIONAL)				
	Oversite excavation				
A	Clear site of small bushes, grub up roots, load and cart away.	1,430	sm		
B	Excavate oversite to remove top soil average 200mm deep and keep on site for later re-use (for landscaping)	1,430	sm		
	Excavation				
C	Bulk excavation to reduce levels commencing from stripped level not exceeding 1.50 meters deep.	805	cm		
D	Ditto; but exceeding 1.50 not exceeding 3.0 meters deep.	805	cm		
E	Excavate for concrete bases starting from reduced level not exceeding 1.50 meters deep.	260	cm		
F	Ditto; but for strip foundations	63	cm		
G	Extra-over all excavation for excavating in rock irrespective of class	200	cm		
H	Return, fill-in and ram selected excavated materials around foundations	194	cm		
J	Ditto; but fill, water and roll/ram to compact in 300mm layers to make up levels with excavated soil	1,609	cm		
	Total carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
A	Remove and cart away surplus excavated materials; spread the same on site as directed	129	cm		
	Diposal of water				
B	Keeping all excavations free from all water including spring or running water		Item		
	Planking and strutting				
C	Uphold the sides of all excavations		Item		
	Filling				
D	Hardcore filling in making up levels,exceeding 300mm thick in layers of 150mm maximum thickness	200	cm		
E	Ditto; but to receive precast paving blocks (m.s.) maximum 250mm thick in layers a.b.d.	715	sm		
F	50mm (average) thick quarry dust blinding to surfaces of hardcore	715	sm		
	Herbicide treatment				
G	Treat surface of formation with approved prime quality total persistent herbicide as per manufacturer's specifications	715	sm		
	Concrete				
H	50mm thick mass concrete class Q (1:3:6) to bottoms of bases	269	sm		
	Total carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
	Insitu concrete; reinforced; class 25 / (20mm); vibrated in:				
A	Bases	67	cm		
B	Strip foundations	11	cm		
C	Retaining walls	87	cm		
D	Columns	11	cm		
E	Beams	40	cm		
	Reinforcement				
	Bars; high yield steel; cold worked to B.S. 4461 including bends, hooks, tying wire and distance blocks				
F	12mm Diameter	8,479	kg		
G	10mm; ditto	2,878	kg		
H	8mm; ditto	1,801	kg		
	Formwork as "12mm thick marine boards" or as approved to insitu concrete as described to:-				
	Edges of strip foundations 150-300mm girth	178	lm		
J	Sides of bases	121	sm		
K	Sides of retaining walls	669	sm		
L	Sides of columns	151	sm		
M	Sides of beams	394	sm		
	Total Carried to Collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (KSH)
	SUBSTRUCTURES (CONTINUED)				
	Walling				
A	200mm thick approved natural stone; local; roughly squared to retention walling; bedding and jointing in cement sand (1:3) mortar	387	sm		
	Insitu Finishings				
B	14mm thick 2 No. coatwork cement sand (1:3) render; wood floated to concrete or blockwork base to walls; external	387	sm		
	Paving blocks				
C	60mm Thick heavy duty interlocking cabro paving blocks laid on quarry dust underlay (m.s.). Minimum strength 49N/mm^2. Including rolling and compaction to secure blocks to the ground.	715	sm		
D	125x200mm high precast concrete kerbs jointed in mix 1:3mortar to paved edges on and including concrete base with all associated excavations, back filling and disposal; as "MOW type A"	315	lm		
	Grassing				
E	Provide manure and mix with vegetable soil up to 150mm deep; supply, plant, water and weed "Kikuyu grass" or other approved grass runners to MOW general specifications; roll grass with a light weight roller to even out surface approx. 2 weeks after planting; maintain grass untill well established.	600	sm		
	Total Carried to Collection Below				
	COLLECTION				
	From page CIV/1				
	From page CIV/2				
	From page CIV/3				
	From above				
	Total Carried To Grand Summary				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BILL NO.3: SEPTIC TANK: 22500 LTR. CAPACITY				
	SUBSTRUCTURES				
	(ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of small bushes, grub up roots, load and cart away.	22	Sm		
B	Excavate oversite average 250mm deep to remove vegetable soil, load up, wheel and cart away.	22	Sm		
	Excavations				
C	Excavate pit occuring not exceeding 1.5 metres deep commencing from stripped level.	32	Cm		
D	Ditto but exceeding 1.5 metres not exceeding 3.0 metres	32	Cm		
E	Ditto but exceeding 3.0 metres not exceeding 4.5 metres	5	Cm		
	Sides of foundations				
F	Allow for upholding sides of excavations by planking and strutting to sides of excavations.		Item		
G	allow for keeping excavations free from water by pumping, bailing or other approved means.		Item		
	Excavation in rock				
H	Extra over for excavation in rock	5	Cm		
	Disposal				
I	Load surplus excavated material and cart away from site.	68	Cm		
	Filling				
J	Return, fill and ram selected excavated material around foundations.	6	Cm		
	Blinding				
K	50mm thick plain concrete (mix 1:4:8) class X blinding under concrete base	22	Sm		
	Insecticide treatment				
L	"TERMIDOR 25 EC" or other equal and approved chemical insecticide treatment according to the manufacturer's printed instructions.	83	Sm		
	TOTAL TO SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Substructures cont'd:				
	Vibrated reinforced concrete (1:2:4/20-20mm aggregate) as described in:				
A	150mm thick concrete base	8	Sm		
B	Ditto but laid to slope	14	Sm		
C	Ditto but in suspended cover slab	22	Sm		
D	250mm thick walls	52	Sm		
E	200mm thick ditto	5	Sm		
F	100mm Thick scum baffle	7	Sm		
G	200x300mm beam	3	Lm		
	Steel Reinforcement Bar/rod reinforcement including bending hooks, tying wire, cutting spacer blocks and supporting all in position. (Measured nett-allow for laps.) High tensile square twisted bars to B.S. 4461 as described in:				
H	12mm Diameter	11	Kg		
I	10mm Diameter	714	Kg		
J	8mm Diameter	28	Kg		
	Mesh reinforcement				
K	Fabric mesh reinforcement to B.S.4483 ref:A142 including tying wire, moulding and fitting spacer blocks complete (measured nett-allow for laps)	8	Sm		
	Supply and fix sawn formwork as described to;				
L	Edges and soffits of suspended cover slab	20	Sm		
M	Ditto but in edges of concrete base exceeding 75mm not exceeding 150mm width	20	Lm		
N	Vertical sides of walls	113	Sm		
O	Sides and soffits of scum baffles	15	Sm		
P	Ditto in beams	3	Sm		
	TOTAL TO SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Substructures cont'd:				
	FINISHES				
	FLOOR FINISHES				
	Cement/sand screed (1:4) as described in:				
A	25mm Thick, in two coats steel trowelled to finish including mixing with an approved waterproofing admixture	16	Sm		
B	15mm Thick ditto but to walls internally	51	Sm		
	EXTERNAL FINISHES				
C	15mm thick cement/sand (mix 1:3) wood floated render to walls externally.	28	Sm		
	INLET AND OULET MANHOLES				
D	Construct to completion 2no.standard septic tank inlet/outlet manholes size 1000x1000x1200mm deep each attached to concrete walls (m.s).Benching in concrete class Q av. 200mm thick with a 150mm wide drain,150mm thick masonry walls all to be finished in cement/sand plaster mix 1:3 in two coats steel trowelled to finish internally and externally: Complete with and including a heavy duty standard size 650x450mm wide cast iron manhole cover and frame.		Item		
			TOTAL TO SUMMARY		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	SOAK PITS				
	SUBSTRUCTURES				
	(ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of small bushes, grub up roots, load and cart away.	2	Sm		
B	Excavate oversite average 250mm deep to remove vegetable soil, load up, wheel and cart away.	2	Sm		
	Excavations				
C	Excavate for strip foundation trenches occuring not exceeding 1.5 metres deep commencing from stripped level.	3	Cm		
D	Excavate pit occuring not exceeding 1.5 metres deep commencing from stripped level.	2	Cm		
E	Ditto but exceeding 1.5 metres not exceeding 3.0 metres	2	Cm		
F	Ditto but exceeding 3.0 metres not exceeding 4.5 metres	2	Cm		
G	Ditto but exceeding 4.5 metres not exceeding 6.0 metres	2	Cm		
H	Ditto but exceeding 6.0 metres not exceeding 7.5 metres	2	Cm		
I	Ditto but exceeding 7.5 metres not exceeding 9.0 metres	2	Cm		
	Excavation in rock				
J	Extra over for excavation in rock	5	Cm		
	Disposal				
K	Load surplus excavated material and cart away from site.	12	Cm		
	Filling				
L	Return, fill and ram selected excavated material around foundations.	2	Cm		
	Insecticide treatment				
M	"TERMIDOR 25 EC" or other equal and approved chemical insecticide treatment according to the manufacturer's printed instructions.	2	Sm		
	Hardcore				
N	Loosely packed hardcore filling	10	Cm		
			Total to collection		

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Substructures cont'd:				
	Vibrated reinforced concrete (1:2:4/20-20mm aggregate) as described in:				
A	450x150 mm Thick strip foundations	5	Lm		
B	150mm Thick cover slab	2	Sm		
	Steel Reinforcement				
	Bar/rod reinforcement including bending hooks, tying wire, cutting spacer blocks and supporting all in position. (Measured nett-allow for laps.)				
	High tensile square twisted bars to B.S. 4461 as described in:				
C	10mm Diameter	19	Kg		
D	8mm Diameter	2	Kg		
	Supply and fix sawn formwork as described to;				
E	Edges and soffits of suspended cover slab	2	Sm		
F	Edges of strip foundations not exceeding 150mm width	4	Lm		
	Masonry walling				
G	200mm Thick natural stone walling bedded and jointed in cement/sand (1:3) mortar;rough chisel dressing and reinforced with and including 20swg x 25mm wide hoop iron in every alternate course.	6	Sm		
	FINISHING				
	Cement/sand plaster(1:4) as described in:				
H	15mm Thick to walls internally	5	Sm		
	EXTERNAL FINISHES				
I	15mm thick cement/sand (mix 1:3) wood floated render to walls externally.	4	Sm		
	MANHOLE COVER				
J	Heavy duty standard size 650x450mm wide cast iron manhole cover and frame secured/grouted into concrete surround.	1	No		
	Total to collection				
	COLLECTION				
	From SP/04				
	From above				
	SUB-TOTAL				
	X2 FOR 2NO. SOAKPITS TO SUMMARY				

	SUMMARY **FROM PAGE SP/01** **FROM PAGE SP/02** **FROM PAGE SP/03** **FROM PAGE SP/05**	
	TOTALTO GRAND SUMMARY	

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	BILL NO.4 - ELEVATED WATER TANK PLATFORM				
	SUBSTRUCTURES				
	(ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of small bushes, grub up roots, load and cart away.	6	Sm		
B	Excavate oversite average 250mm deep to remove vegetable soil, load up, wheel and cart away.	6	Sm		
	Column Excavation				
C	Excavate for column base occuring not exceeding 1.5 metres deep commencing from stripped level.	9	Cm		
	Sides of foundations				
D	Allow for upholding sides of excavations by planking and strutting to sides of excavations.		Item		
E	allow for keeping excavations free from water by pumping, bailing or other approved means.		Item		
	Excavation in rock				
F	Extra over for excavation in rock	1	Cm		
	Disposal				
G	Load surplus excavated material and cart away from site.	2	Cm		
	Filling				
H	Return, fill and ram selected excavated material around foundations.	7	Cm		
	TOTAL TO SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Substructures cont'd:				
	Blinding				
A	50mm thick plain concrete (mix 1:3:6) class Q blinding under foundations	6	Sm		
	Insecticide treatment				
B	"TERMIDOR 25 EC" or other equal and approved chemical insecticide treatment according to the manufacturer's printed instructions.	6	Sm		
	Vibrated reinforced concrete (1:2:4/20-20mm aggregate) as described in:				
C	1200x1200x250mm Thick column bases	4	No		
D	300x200mm columns	20	Lm		
E	150mm Thick suspended slab	6	Sm		
F	Ring beam	1	Cm		
	Steel Reinforcement Bar/rod reinforcement including bending hooks, tying wire, cutting spacer blocks and supporting all in position. (Measured nett-allow for laps.) High tensile square twisted bars to B.S. 4461 as described in:				
G	16mm Diameter	171	Kg		
H	12mm Diameter	162	Kg		
I	10mm Diameter	121	Kg		
J	8mm Diameter	104	Kg		
	TOTAL TO SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Substructures cont'd:				
	Supply and fix sawn formwork as described to;				
A	Soffits and edges of suspended slab	8	Sm		
B	Ditto but in edges of column bases exceeding 150mm not exceeding 300mm girth	20	Lm		
C	Vertical sides of columns	20	Sm		
D	Sides and soffits of ringbeam	15	Sm		
	Finishing				
E	12mm thick cement/sand (1:3) wood floated render to concrete columns	14	Sm		
F	Ditto to concrete beams	19	Sm		
G	Ditto to soffits of slab	5	Sm		
H	25mm thick screed ditto waterproofed to top of slab	8	Sm		
	Painting				
I	Prepare and apply one undercoat and three coats of super gloss oil paint as "Duracoat" or equal and approved to rendered surfaces.	37	Sm		
	TOTAL TO SUMMARY				

	SUMMARY	
	FROM PAGE WT/01	
	FROM PAGE WT/02	
	FROM PAGE WT/03	
	TOTALTO GRAND SUMMARY	

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	BILL NO. 5: MECHANICAL WORKS				
	STORAGE TANKS FOR THE HYDRANT SYSTEM				
A	Supply and install a High Level storage tank PVC 5,000Litres c/w ball float switch, inlet, outlet, and overflow connections. The tanks to rest on a high level steel structure raised 10m above the ground level. The structure to be provided by others.The tanks to be as "TECHNO TANK" or equal and approved.	4	No		
B	Supply and install a Ground Level storage tank PVC 10,000Litres c/w ball float switch, inlet, outlet, and overflow connections. The tanks to rest on a flat surface raised 400mm above the ground level.The tanks to be as "TECHNO TANK" or equal and approved.	3	No		
C	100mm diameter gate valve as Pegler England	2	No		
D	100mm diameter g.m.s bends	4	No		
E	100mm diameter g.m. union	2	No		
F	100mm diameter g.m.s nipples	8	No		
	WATER PUMP				
G	Supply and install a water booster pump of capacity 1.1kw, operating on a 240V, 50 Hz power supply, The pump should be complete with a float switch to cut off power supply to the pump once the tanks are full and also protect the pump against dry run when the ground level tank is empty. The pump should also have a start and stop button and Power surge protection.Allow for the neceessary wiring from the nearest power point.(The pump to be as Davis and Shirtliff model or Equal and approved)	1	No		
	PUMP CAGE				
H	Allow for construction of a pump metal cage housing with a roof and metal grille door to protect the pump from rain, direct sunlight and vandalism. (Metal cage to Engineers approval)	1	Item		
	FIRE HYDRANT POINTS OUTLET 6No.				
I	100mm diameter PVC Water pipe (heavy gauge) for water distribution to outlet points	100	Lm		
J	100mm diameter tees	6	No		
K	100 X 50mm diameter reducers	6	No		
L	50mm diameter valve sockets	6	No		
M	50mm diameter gate valve as Pegler England	6	No		
N	50mm diameter fire hydrant control valve with connection outlet to a portable hose reel	6	No		
P	50mm diameter g.m.s stand pipe standing 600mm high from the ground level and well connected to the 100mm diameter supply distribution pipe.. The stand pipe should be firmly held with concrete surround	6	No		
Q	50mm diameter g.m.s bends	12	No		
R	50mm diameter g.m.s nipples	12	No		
S	50mm diameter g.m.s plain sockets	12	No		
	Excavation works for the Fire Hydrant distribution pipe				
T	Allow for excavation of trench 400mm wide and not less than 300mm deep but not exceeding 600mm deep, lay water hydrant distribution pipe return soil and ram well	80	Lm		
	Total for storage tanks and Fire Hydrant C/F to Summary Page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	SANITARY FITTINGS **Supply, install, fix and test the following sanitary fittings including all materials and jointing to supply waste/ soil and overflow pipes.** **STAFF WASHROOMS** **High Level WC**				
A	Squatting wc closet in white china comprising of WC bowl,plate with intergral foot treads, trap connector, 9 Litre high ceramic cistern, fittings and flushing handle including siphon, 15 mm diameter side inlet ball valve, 20 mm side overflow, plastic flush pipe, inlet connector and cistern supports.To be as Twyfords "ORIENT" or equal and approved	4	No		
	Wash Hand Basin on Countertop				
B	**Countertop wash hand basin** with basins size 545 x 425mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, chrome plated non-conculsive time delay press action pillar tap as Cobra model and heavy duty chrome plated bottle trap (32mm 'P' trap) with 75mm seal. To be as 'ORIENT' countertops washhand basin or equal and approved.	4	No		
	URINAL BOWLS				
C	Supply, deliver and install Ceramic urinal bowl complete with heavy duty bottle trap outlet, Push button tap valve with chrome plated flexible tubing and 2No. Ceramic divisionsThe bowl to be as " SONA" Model or equal and approved	2	No		
	MIRROR				
D	6mm Thick polished glass, siverbacked mirror with bevelled edges, size 800 X 500mm plugged and screwed to wall with 4No chrome plated chromepacked screws and 5mm thick foam back rest.	2	No		
	TOILET ROLL HOLDER				
E	Toilet roll holder in vitreous china in white colour of size 165 X 165mm and recessed into wall. Toilet roll holder to be as "Twyfords semi recessed and ornamental" or equal and approved	4	NO		
	SOAP DISPENSER				
F	Liquid soap dispenser in white colour. Water capacity 1.136L complete with plastic rawl plugs, fixing screws lock and key complete with initial fill of soap gel. The soap dispenser to be as " ZAPLONS MARK " model, size 125 x 100 x 290mm high or approved equivalent.	3	No		
	PWD TOILET				
G	Supply and install a close coupled WC toilet with a 7Litre cistern, heavy duty plastic seat cover, side inlet, outlet and overflow connections, Push button type flushing system and any other necessary item for its proper functioning. To be as " SONA" Model or Equal and approved. The facility should also include the following items : i) Mirror size 500mm wide by 800mmm high mounted 300mm above the finished floor level, ii) 1No. Hinged hand rail, iii) 3No. 600mm long fixed hand rails, iv) Medium size wash hand Basin with 15mm diameter action lever chrome plated tap.	1	Set		
	KITCHENETTE				
H	Single bowl Single drainer stainless steel sink (SBSD) Heavy duty size 1100 x 650 mm, Bowl size 450 by 370mm on counter top complete with overflow, waste fittings, plugs, chain stays, and 40mm diameter bottle trap with 75mm deep seal, 15mm diameter Chrome plated Swivel tap and any other other necessary fitting for its proper function.	1	No		
	Total for Staff Toilets C/F to Summary Page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	Fire Brigade Washrooms				
	High Level WC				
A	Squatting wc closet in white china comprising of WC bowl,plate with intergral foot treads, trap connector, 9 Litre high ceramic cistern, fittings and flushing handle including siphon, 15 mm diameter side inlet ball valve, 20 mm side overflow, plastic flush pipe, inlet connector and cistern supports.To be as Twyfords "ORIENT" or equal and approved	4	No		
	Wash Hand Basin on Countertop				
B	**Countertop wash hand basin** with basins size 545 x 425mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, chrome plated non-conculsive time delay press action pillar tap as Cobra model and heavy duty chrome plated bottle trap (32mm 'P' trap) with 75mm seal. To be as 'ORIENT' countertops washhand basin or equal and approved.	4	No		
	URINAL BOWLS				
C	Supply, deliver and install Ceramic urinal bowl complete with heavy duty bottle trap outlet, Push button tap valve with chrome plated flexible tubing and 2No. Ceramic divisionsThe bowl to be as " SONA" Model or equal and approved	2	No		
	MIRROR				
D	6mm Thick polished glass, siverbacked mirror with bevelled edges, size 800 X 500mm plugged and screwed to wall with 4No chrome plated chromepacked screws and 5mm thick foam back rest.	2	No		
	TOILET ROLL HOLDER				
E	Toilet roll holder in vitreous china in white colour of size 165 X 165mm and recessed into wall. Toilet roll holder to be as "Twyfords semi recessed and ornamental" or equal and approved	4	NO		
	SOAP DISPENSER				
F	Liquid soap dispenser in white colour. Water capacity 1.136L complete with plastic rawl plugs, fixing screws lock and key complete with initial fill of soap gel. The soap dispenser to be as " ZAPLONS MARK " model, size 125 x 100 x 290mm high or approved equivalent.	2	No		
	SHOWER (WITH INSTANT HEATER)				
G	Instant shower unit as Lorenzetti or equal and approved with 15 mm diameter pipe connection at a fixed height with concealed pipework, chrome plated stop cork and 15 mm chrome plated bib tap.	3	No		
	SOAP DISH				
H	Twyfords " signature" ceramic in white colour soap tray of size 150 X 115 X 65 mm semi recessed into the wall.	3	No		
	TOWEL RAIL				
I	20mm diameter, 600mm long approved doubled towel rail, CP, Plugged and screwed to the wall.	3	No		
	Total for Fire Brigade Washrooms Sanitary Fittings C/F to Summary Page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	INTERNAL PLUMBING				
	Install tubing fittings as AGRO FLOW PPRC conforming to the current European standards for PPR installation. Pipe jointing shall be by polyfusion or use of electrical coupling.				
	PIPES				
A	32mm diameter ppr pipe	90	Lm		
B	25 mm diameter ppr pipe	60	Lm		
C	20 mm diameter ppr pipe	24	Lm		
	Extra over for pipework				
D	32mm diameter tees	4	No		
E	32 x 25mm diameter reducer	4	No		
F	32mm diameter nipples	12	No		
G	25 x 20 mm diameter reducing tee	32	No		
H	25mm diameter bends	16	No		
I	25mm diameter union	8	No		
J	25 mm diameter nipples	24	No		
K	20 mm diameter nipples	36	No		
L	50mm diameter union	3	No		
M	50mm diameter nipples	6	No		
	Taps and Valves				
N	15 mm diameter angle valve	22	No		
P	20 mm diameter gate valve as Pegler England	5	No		
Q	25mm diameter gate valve as Pegler England	4	No		
R	50mm diameter gate valve as Pegler England	3	No		
	Flexible Tubing				
S	15mm Diameter chrome plated flexible tubing 300mm long c/w backnut.	22	No		
	Stand pipes				
T	Supply and Install a g.m.s stand pipe of 20mm diameter and 20mm diameter tap as Pegler. The stand pipe should be 700mm high from the ground level and firmly held with concrete surround and Trowelled smooth.	2	No		
	Total For Internal Plumbing For Washrooms C/F to Summary page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	INTERNAL DRAINAGE				
	Supply, deliver, install and fix the following UPVC soil and waste system to BS 4514 and 5255 with fittings fixed to manufactures printed instructions and BS 5572 (1978) and manufactured by "Key Terrain" as described. All PVC branches, tees, reducing tees				
	UPVC soil and Waste systems c/w fittings				
A	150mm diameter heavy duty grey pipe class 'D'	100	Lm		
B	100mm diameter heavy duty grey pipe class 'D'	40	Lm		
C	50mm diameter ditto	30	Lm		
D	40mm diameter ditto	30	LM		
	Extra over UPVC pipe for the following				
E	100mm diameter long radius bend	11	No		
F	100mm diameter inspection bend	11	No		
G	100mm diameter vent cowl	2	No		
H	100 x 50mm diameter floor trap and grating	12	No		
I	50mm diameter sweep tee	12	No		
J	50mm diameter access cap	12	No		
K	40mm diameter sweep Tee	8	No		
L	40mm diameter access cap	8	No		
	Excavations				
M	Allow for excavation of trench for drainage pipe 300mm wide, depth not less than 650mm deep but not exceeding 1250mm deep, lay waste pipe, return soil and ram well.	150	Lm		
	Total for Drainage works C/F to summary Page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	FIRE FIGHTING				
	Portable Fire Extinguishers				
	Supply, deliver, install, test and commission the following portable fire extinguishers and conforming to BS EN 3 / BS 1449.				
A	**Water/Carbon Dioxide Gas Fire Extinguisher** 9 litres water/carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
B	**Carbon Dioxide Gas Fire Extinguisher** 5kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
C	**Dry Chemical Powder Fire Extinguisher** 9kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
D	**Manual Alarm Bell** 9" (225mm) manual operated alarm bell (Gong)	2	No		
E	**Fire Blanket** 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.	2	No		
F	**Fire Notices** Allow for fire instructions notices as described in the particular specifications and to the Project Engineer's approval.	4	No		
G	**Fire Exit Signs** Allow for installation of Fire Exit signs clearly showing exit directions in case of fire outbreak.	6	No		
	Total for Portable Fire fighting Equipment /CF to Collection Page FS/9				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	HOSE REEL				
A	Supply, deliver, install and fix an automatic recessed swinging type hose reel complete with a 30m non kinking reinforced rubber hose of 20mm norminal diameter hose including a 4.9 X 6.3mm nozzle controlled by a plastic jet spray, all as manufactured by M/S " ANGUS" or other equal and approved equivalent.	2	No		
B	**Supply, deliver, install and fix galvanised mild steel pipes to BS 1387 class " B "**				
	(i) 25mm g.m.s pipe	70	Lm		
	(ii) 20mm ditto	2	Lm		
	(iii) 25 x 20mm diameter reducer	2	No		
	(iv) 25 x 25mm diameter tee	1	No		
	(v) 25mm diameter union	4	No		
	(vi) 20mm diameter union	2	No		
	(vii) 25mm diameter nipple	8	No		
	(viii) 20mm ditto	4	No		
	(ix) 25mm diameter bend	6	No		
	(X) 20mm diameter ditto	4	No		
C	25mm diameter gate valve to BS 1010 with screw thread as pegler	2	No		
D	20mm ditto	2	No		
	WATER STORAGE TANK (For Fire Fighting)				
E	Supply, deliver and install a PVC Water storage tank of capacity 2000 litres. The tank should be complete with cover, ball float valve, inlet and outlet connections and overflow connection. The tank should rest on a flat surface. The tank should be as " TECHNO TANK" or equal and approved equivalent	1	No		
	Total for Hose Reel, g.m.s pipes and tank C/F to Collection page FS/9				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	TWIN BOOSTER PUMP				
A	Supply, deliver, install and fix two number twin booster pumps, one on duty and the other standby. If the duty pump fails to start for any reason the standby one comes on automatically within five seconds.Each of the pumps to be of capacity 1.1kw, 240v, 50Hz. The pumps shall be complete with a pressure tank switch and all other accessories required for proper and satisfactory operation. The pump shall be automatic, electric and capable of delivering 2.31L/Second against a pressure head of 2.1 bar. The electrical supply shall be single phase and all electrical wiring relating to control panel for the booster pump shall be done to the satisfaction of the engineer.(The pumps to be as Davis and Shirtliff Model or Equal and approved)	1	Set		
	Control Panel				
B	Allow for construction of an electrical control panel, wiring, switches and circuit breakers to match the above item	1	Item		
	PUMP PROTECTION CAGE				
C	Allow for construction of a pump metal cage housing with a roof and metal grille door to protect the pump from rain, direct sunlight and vandalism. (Metal cage to Engineers approval)	1	Item		
D	Allow for testing and commissioning of the Fire Fighting system and Hydrants to the Satisfaction of the Engineer	1	Item		
	Total for Twin Booster Pump C/F to Collection Below				
	COLLECTION PAGE				
1	Total for Booster Pump B/F From Above ……				
2	Total for Portable Fire Fighting Equipment B/F from Page FS/7 ……				
3	Total for Hose Reel, g.m.s pipework and tank B/F from Page FS/8 ….				
	Total for Fire Fighting System C/F to Summary Page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	WATER RETICULATION				
	Supply pipe				
A	50mm diameter ppr pipe	100	Lm		
	Extra over for pipes				
B	50mm diameter bends	8	No		
C	50mm diameter nipple	8	No		
D	50mm diameter union	4	No		
	Gate valve				
E	50mm diameter gate valve	2	No		
	Excavation works for supply pipe				
F	Allow for excavation of trench 300mm wide but not less than 300mm deep lay water supply pipe, return soil and ram well	100	Lm		
G	Allow for meter deposit and charges and connection to the Local water supply.	1	Item		
H	Allow for meter connection accessories like nipples, gate valve, unions etc	1	Item		
I	Allow for flushing out of the cold water system, testing and commissioning of the plumbing and drainage system to the satisfaction of the Engineer	1	Item		
J	Allow for contingencies related to plumbing works	1	Item		
	Total for Water Reticulation C/F to Summary Page FS/10				

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT-KSHS
	SUMMARY PAGE				
1	**Total for Storage Tanks and Fire Hydrant B/F from Page FS/1**				
2	**Total for Staff Toilets Sanitary Fittings B/F from Page FS/2**				
3	**Total For Fire Brigade Sanitary fittings B/F from Page FS/3 …….**				
4	**Total for Internal Plumbing for Washrooms B/F from Page FS/4 ……**				
5	**Total for Internal Drainage B/F from Page FS/5 …….**				
6	**Total for Fire Fighting System B/F from Page FS/8 …….**				
7	**Total for Water Reticulation B/F from Page FS/9……**				
	MECHANICAL WORKS TOTAL TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	K.SHS
	PC AND PROVISIONAL SUMS				
A	Allow a Prime Cost sum of Kenya Shillings Three Million and Seven Hundred Thousand (Ksh 3,700,000.00) Only as Electrical Works				**3,700,000.00**
B	**Add:** Profits		%		
C	**Add:** Attendance		Sum		
D	Allow a Provisional sum of Kenya Shillings Three Million (Ksh 3,000,000.00) Only as Contigency to be used as Directed by the Project Manager				**3,000,000.00**
E	Allow a Provisional sum of Kenya Shillings Three Million (Ksh.3,000,000.00) Only as Civil Works				**3,000,000.00**
	TOTAL PRIME COST AND PROVISIONAL SUMS CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	SHS	SHS
		FOR OFFICIAL USE	FOR CONTRACTOR'S USE
	GRAND SUMMARY		
1	Particular Preliminaries from page PP/10		
2	General Preliminaries from page GP/13		
3	Fire Station from page ST/23		
4	External Works from page CIV/4		
5	Septic Tank from page SP/06		
6	Water Tank Tower from page WT/04		
7	Mechanical Works from page FS/10		
8	Provisional Sums fom page PS/1		
	TOTAL CARRIED TO FORM OF TENDER KSHS		

CONTRACTOR'S NAME,.....

ADDRESS,.....

DATE ,.....

SIGNATURE ,.....
WITNESS NAME,.....

DESCRIPTION.....
.....
DATE, ...

SIGNATURE, ...