MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

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P.O. BOX 190
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Kenya

PROPOSED RENOVATION AND EXTENSION OF MMUST CLINIC

TENDER SPECIFICATIONS AND BILLS OF QUANTITIES
MAIN CONTRACT WORKS

TENDER NO. MMUST/EST/007/2024-2025

CLIENT:

THE VICE CHANCELLOR,
MASINDE MULIRO UNIVERSITY
OF SCIENCE AND TECHNOLOGY
P. O. BOX 190-50100,
KAKAMEGA

CLOSING DATE TUESDAY 4TH MARCH 2025 AT 10:00AM

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INVITATION TO TENDER

PROCURING ENTITY: Masinde Muliro University of Science & Technology
P.O. Box 190 – 50100 Kakamega
Kakamega – Webuye Road
Telephone No: 0702 597360 / 057 2505222 / 057 2505223
Email: info@mmust.ac.ke

CONTRACT NAME AND DESCRIPTION:
Proposed MMUST Clinic Renovation and Extension

1. The Masinde Muliro University of Science & Technology invites sealed tenders for the Renovation and Extension of the MMUST Clinic facility
2. Tendering will be conducted under open competitive method (National Open Tender) using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours [8:00 am – 5:00 pm] at the address given below.
   Procurement Office
   Masinde Muliro University of Science & Technology
   P.O. Box 190 – 50100 Kakamega
   Kakamega – Webuye Road
   Telephone No: 0702 597360 / 057 2505222 / 057 2505223
   Email: procurementofficer@mmust.ac.ke
4. A complete set of tender documents may be obtained electronically from the University Website: www.mmust.ac.ke or PPIP Portal: supplier.treasury.go.ke . Tender documents obtained electronically will be free of charge.
5. Tender documents may be viewed and downloaded for free from the website www.mmust.ac.ke or PPIP Portal: supplier.treasury.go.ke. Tenderers who download the tender document must forward their particulars immediately to procurementofficer@mmust.ac.ke to facilitate any further clarification or addendum.
6. Tenders shall be quoted be in Kenya Shillings and shall include all taxes. Tenders shall remain valid for (120) days from the date of opening of tenders.
7. All Tenders must be accompanied by a Tender Security of Kshs. 400,000/- in form of a bankers cheque, a bank guarantee / bankers cheque from a reputable bank approved by the PPRA located in Kenya.
8. The Tenderer shall chronologically serialize all pages of the tender documents submitted.
9. Completed tenders must be delivered to the address below on or before 10.00 a.m Tuesday 4th March 2025 Electronic Tenders will not be permitted.
10. Tenders will be opened immediately after the deadline date and time specified above or any dead line date and times specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.
11. Late tenders will be rejected.
12. The addresses referred to above are:
    Procurement Office
    Masinde Muliro University of Science & Technology
    P.O. Box 190 – 50100 Kakamega
    Kakamega – Webuye Road

Telephone No: 0702 597360 / 057 2505223 / 057 2505223
Email: procurementofficer@mmust.ac.ke

a. **Address for obtaining further information and for purchasing tender documents**
   Procurement Office
   Masinde Muliro University of Science & Technology
   P.O. Box 190 – 50100 Kakamega
   Kakamega – Webuye Road
   Telephone No: 0702 597360 / 057 2505223 / 057 2505223
   Email: procurementofficer@mmust.ac.ke

b. Address for Submission of Tenders.
   Completed tender documents are to be enclosed in plain sealed envelopes, marked with the tender number and name and be deposited in the Tender Box at Masinde Muliro University of Science and Technology or be addressed to: -

   The Vice Chancellor,
   Masinde Muliro University of Science and Technology,
   P.O Box 190 – 50100 Kakamega,
   Kakamega –Webuye Road

   And dropped in Tender Box situated outside Administration Building Main entrance, Main Campus in Kakamega, so as to reach the University On or before 10.00 a.m Tuesday 4th March 2025
   Tenders that do not fit in the tender box will be submitted at the Procurement Office in the Adminstration Building.

   Opening of the bid documents will be done immediately thereafter in the presence of applicants or their representatives who choose to attend.

c. Address for Opening of Tenders.
   Masinde Muliro University of Science and Technology,
   P.O Box 190 – 50100 Kakamega,
   Kakamega –Webuye Road

   Venue for opening of the bid documents will be communicated during closing of the tenders at the location of the tender box as communicated above.

Vice Chancellor
Masinde Muliro University of Science & Technology

PART1: TENDERING PROCEDURES

SECTION I - INSTRUCTIONS TO TENDERERS

GENERAL PROVISIONS

1.0 Scope of tender

1.1 The Procuring Entity as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The name, identification, and number of lots (contracts) of this Tender Document are specified in the TDS.

1.2 Throughout this tendering document:

a) The term "inwriting" means communicated in written form (e.g. by mail, e-mail, fax, including if specified in the TDS, distributed or received through the electronic-procurement system used by the Procuring Entity) with proof of receipt.

b) if the context so requires, "singular" means "plural" and vice versa.

c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Procuring Entity. It excludes official public holidays.

2.0 Fraud and corruption

2.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 "Declaration not to engage in corruption". The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

2.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the "Certificate of Independent Tender Determination" annexed to the Form of Tender.

2.3 Tenderers shall permit and shall cause their agents (whether declared or not), subcontractors, sub-consultants, service providers, suppliers, and their personnel, to permit the Procuring Entity to inspect all accounts, records and other documents relating to any initial selection process, pre-qualification process, tender submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Procuring Entity.

2.4 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **Data Sheet** and make available to all the firms together with this tender document all in formation that would in that respect give such firm any unfair competitive advantage over competing firms.

3.0 Eligible tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.8, or an individual or any combination of such entities in the form of a joint venture (JV) under an existing agree mentor with the intent to enter in to such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender. The maximum number of JV members shall be specified in the **TDS.**

3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be

eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.

3.3 A Tenderer shall not have a conflict of interest. Any tenderer found to have a conflict of interest shall be disqualified. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:

a) Directly or indirectly controls, is controlled by or is under common control with another tenderer;

b) Receives or has received any direct or indirect subsidy from another tenderer;

c) Has the same legal representative as another tenderer;

d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process;

e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods or works that are the subject of the tender;

f) Any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as a consultant for Contract implementation.

g) Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document.

h) Has a close business or personal relationship with senior management or professional staff of the Procuring Entity who has the ability to influence the bidding process and:

   i) Are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or

   ii) May be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.

3.4 A tenderer shall not be involved in corrupt, coercive, obstructive or fraudulent practice. A tenderer that is proven to have been involved in any of these practices shall be automatically disqualified

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. Members of a joint venture may not also make an individual tender, be a sub-contractor in a separate tender or be part of another joint venture for the purposes of the same Tender. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT3.9. A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed sub-contractors or sub-consultants for any part of the Contract including related Services.

3.7 A Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.ke.

3.8 A Tenderer that is a state-owned enterprise or a public institution in Kenya may be eligible to tender and be awarded Contract(s) only if it is determined by the Procuring Entity to meet the following conditions, i.e. if it is:

i) A legal public entity of Government and/or public administration,

ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and;

(iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it to compete with firms in the private sector on an equal basis.

3.9 Firms and individuals shall be ineligible if their countries of origin are:

(a) As a matter of law or official regulations, Kenya prohibits commercial relations with that country.

(b) By an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, local sub-contracts and labour) from citizen suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided for this purpose in *"SECTION III - EVALUATION AND QUALIFICATION CRITERIA, Item 9".*

3.11 Pursuant to the eligibility requirements of ITT 3.10, a tender is considered a foreign tenderer, If it is registered in Kenya and has less than 51 percent ownership by nationals of Kenya and if it does not subcontract to foreign firms or individuals more than 10 percent of the contract price, excluding provisional sums. JVs are considered as foreign tenderers if the individual member firms registered in Kenya have less 51 percent ownership by nationals of Kenya. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

3.12 The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website www.nca.go.ke.

3.13 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke.

4.14 A Kenyan tenderer shall be eligible to tender if it provides evidence of having fulfilled his/her tax obligations by producing valid tax compliance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4.0 Eligible goods, equipment, and services

4.1 Goods, equipment and services to be supplied under the Contract may have their origin in any country that is not ineligible under ITT 3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment and services.

4.2 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

5.0 Tenderer's responsibilities

5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender,

and the Procuring Entity will in no case be responsible or liable for those costs.

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

5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter upon its premises and lands for the purpose of such visit. The Tenderer shall indemnify the Procuring Entity again stall liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the examination and inspection.

5.4 The tenderer shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including charts, as necessary or required.

B. CONTENTS OF TENDER DOCUMENTS

6.0 Sections of Tender Document

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT 10.

PART 1: Tendering Procedures
- Section I – Instructions to Tenderers
- Section II – Tender Data Sheet (TDS)
- Section III- Evaluation and Qualification Criteria
- Section IV – Tendering Forms

PART 2: Works' Requirements
- Section V - Bills of Quantities
- Section VI - Specifications
- Section VII - Drawings

PART 3: **Conditions of Contract and Contract Forms**
- Section VIII - General Conditions (GCC)
- Section IX - Special Conditions of Contract
- Section X- Contract Forms

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents. Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of a pre-arranged site visit

6.3 and those of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 10. Incase of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

6.4 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document and to furnish with its Tender all information and documentation as is required by the Tender document.

7.0 Clarification of Tender Document, Site Visit, Pre-tender Meeting

7.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the **TDS** or raise its enquiries during the pre-Tender meeting if provided for in accordance with ITT 7.2. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS p**rior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender documents in accordance with ITT 7.4, including a description of the inquiry but without identifying its source. If so specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents following the procedure under ITT 8 and ITT 22.2.

7.2 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine

and inspect the site(s) of the required contracts and obtain all information that may be necessary for preparing a tender. The costs of visiting the Site shall be at the Tenderer's own expense. The Procuring Entity shall specify in the **TDS** if a pre-arranged Site visit and or a pre-tender meeting will be held, when and where. The Tenderer's designated representative is invited to attend a pre-arranged site visit and a pre-tender meeting, as the case may be. The purpose of the site visit and the pre-tender meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

7.3 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the **TDS** before the meeting.

7.4 Minutes of a pre-arranged site visit and those of the pre-tender meeting, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents. Minutes shall not identify the source of the questions asked.

7.5 The Procuring Entity shall al so promptly publish anonymized (*no names*) Minutes of the pre-arranged site visit and those of the pre-tender meeting at the web page identified in the **TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-arranged site visit and those of the pre-tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT 8 and not through the minutes of the pre-Tender meeting. Non-attendance at the pre-arranged site visit and the pre-tender meeting will not be a cause for disqualification of a Tenderer.

8.0 Amendment of Tender Documents

8.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tender Documents by issuing addenda.

8.2 Any addendum issued shall be part of the Tender Documents and shall be communicated in writing to all who have obtained the Tender Documents from the Procuring Entity. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's website in accordance with ITT 7.5.

8.3 To give Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity should extend the deadline for the submission of Tenders, pursuant to ITT 22.2.

C. PREPARATION OF TENDERS

9. Cost of Tendering

The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

10.0 Language of Tender

The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate and notarized translation of the relevant passages into the English Language**,** in which case, for purposes of interpretation of the Tender, such translation shall govern.

11.0 Documents Comprising the Tender

11.1 The Tender shall comprise the following:

a) Form of Tender prepared in accordance with ITT 12;
b) Schedules including priced Bill of Quantities, completed in accordance with ITT 12 and ITT 14;
c) Tender Security or Tender-Securing Declaration, in accordance with ITT 19.1;

d) Alternative Tender, if permissible, in accordance with ITT 13;

e) ***Authorization****:* written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordancewithITT20.3;

f) *Qualifications:* documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted.

g) *Conformity:* a technical proposal in accordance with ITT 16;

h) Any other document required in the **TDS.**

11.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed JV Agreement. Change of membership and conditions of the JV prior to contract signature will render the tender liable for disqualification.

12.0 Form of Tender and Schedules

12.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

12.2 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

13. Alternative Tenders

13.1 Unless otherwise specified in the TDS, alternative Tenders shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **TDS**, and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.

13.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

13.4 When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

14.0 Tender Prices and Discounts

14.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Bill of Quantities shall conform to the requirements specified below.

14.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.

14.3 The price to be quoted in the Form of Tender, in accordance with ITT 12.1, shall be the total price

of the Tender, including any discounts offered.

14.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 12.1.

14.5 It will be specified in the **TDS** if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except in cases where the contract is subject to fluctuations and adjustments, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.

14.6 Where tenders are being invited for individual lots (contracts)or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 14.4, provided the Tenders for all lots (contracts) are opened at the same time.

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days 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.

15.0 Currencies of Tender and Payment

15.1 The currency(ies) of the Tender and the currency(ies) of payments shall be the same**.**

15.2 Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings.

a) A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya (referred to as "the foreign currency requirements") shall (if so allowed in the **TDS**) indicate in the Appendix to Tender the percentage(s) of the Tender Price (excluding Provisional Sums), needed by the Tenderer for the payment of such foreign currency requirements, limited to no more than two foreign currencies.

b) The rates of exchange to be used by the Tenderer in arriving at the local currency equivalent and the percentage(s) mentioned in (a) above shall be specified by the Tenderer in the Appendix to Tender and shall be based on the exchange rate provided by the Central Bank of Kenya on the date 30 days prior to the actual date of tender opening. Such exchange rate shall apply for all foreign payments under the Contract.

15.3 Tenderers may be required by the Procuring Entity to justify, to the Procuring Entity's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Adjustment Data in the Appendix to Tender are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Tenderers.

16.0 Documents Comprising the Technical Proposal

The Tenderer shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, Tender Forms, insufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

17.0 Documents Establishing the Eligibility and Qualifications of the Tenderer

17.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.

17.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tender Forms.

17.3 If a margin of preference applies as specified in accordance with ITT 33.1, nation al tenderers, individually or in joint ventures, applying for eligibility for national preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

17.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity to identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.

17.5 The purpose of the information described **in ITT 17.4** above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

17.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to owner ship and control which in formation on any changes to the information which was provided by the tenderer under ITT 6.4. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

17.7 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

17.8 If a tenderer fails to submit the information required by these requirements, its tender will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

17.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:

i) If the procurement process is still ongoing, the tenderer will bed is qualified from the procurement process,

ii) if the contract has been awarded to that tenderer, the contract award will be set as depending on the outcome of (iii),

iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other person shave committed any criminal offence.

17.10 If a tenderer submits information pursuant to these requirements that is in complete, in accurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 17.8 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tender.

18.0 Period of Validity of Tenders

18.1. Tenders shall remain valid for the Tender Validity period specified in the **TDS**. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 22). At ender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

18.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may requestTendererstoextendtheperiodofvalidityoftheirTenders.Therequestandtheresponsesshallbemadein writing. If a Tender Security is requested in accordance with ITT 19, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer

may refuse the request without forfeiting its Tender security. A Tenderer granting there quest shall not be required or permitted to modify its Tender.

19.0 Tender Security

19.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the **TDS**, in original form and, in the case of a Tender Security, in the amount and currency **specified** in the **TDS**. A Tender-Securing Declaration shall use the form included in Section IV, Tender Forms.

19.2 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:

I) cash.

ii) a bank guarantee.

iii) a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority.

(iv) a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, from a reputable source, and an eligible country.

19.3 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 18.2.

19.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

19.5 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the TDS. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non-responsive, or a bidder declines to extend tender validity period.

19.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security, and any other documents required in the TDS.

19.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

a) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension there to be provided for by the Tenderer; or

b) if the successful Tenderer fails to: -

i) sign the Contract in accordance with ITT47; or

ii) furnish a Performance Security and if required in the TDS, and any other documents required in the TDS.

19.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA to debars the Tenderer from participating in public procurement as provided in the law.

19.9 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of tendering, the Tender Security or the Tender-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITT 4.1 and ITT 11.2.

19.10 A tenderer shall not issue a tender security to guarantee itself.

20.0 Format and Signing of Tender

20.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 11 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 13, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **TDS** and clearly mark them "COPY." In the event of any discrepancy between the origin a land the copies, the original shall prevail.

20.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

20.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the **TDS** and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialled by the person signing the Tender.

20.4 Incase the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Tender.

D. SUBMISSION AND OPENING OF TENDERS

21.0 Sealing and Marking of Tenders

21.1 The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

a) in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as described in ITT 11; and

b) in an envelope or package or container marked "COPIES", all required copies of the Tender; and

c) if alternative Tenders are permitted in accordance with ITT 13, and if relevant:

   i) in an envelope or package or container marked "ORIGINAL – ALTERNATIVE TENDER", the alternative Tender; and

   ii) in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

a) bear the name and address of the Procuring Entity,

b) bear the name and address of the Tenderer; and

c) bear the name and Reference number of the Tender.

21.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders misplaced or opened prematurely will not be accepted.

22.0 Deadline for Submission of Tenders

22.1 Tenders must be received by the Procuring Entity at the address specified in the **TDS** and no later than the date and time also specified in the **TDS.** When so specified in the **TDS**, tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the **TDS**.

22.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by

amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

23.0 Late Tenders

The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 22. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

24.0 Withdrawal, Substitution, and Modification of Tenders

24.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

a) prepared and submitted in accordance with ITT 20 and ITT 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and

b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 22.

24.2 Tenders requested to be withdrawn in accordance with ITT 24.1 shall be returned unopened to the Tenderers.

24.3 No Tender may be withdrawn, substituted, or modified in the interval between the deadline for submission of Tenders and the expiration of the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereof.

25. Tender Opening

25.1 Except in the cases specified in ITT 23 and ITT 24.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified **in the TDS**, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 22.1, shall be as specified in the **TDS.**

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

25.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

25.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorizationtorequestthemodificationandisreadoutatTenderopening.

25.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

25.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bill of Quantities (to be decided on by the tender opening committee) are to be initialled by the members of the tender opening committee attending the opening.

25.7 At the Tender Opening, the Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 23.1).

25.8 The Procuring Entity shall prepare minutes of the Tender Opening that shall include, as a minimum: -

a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification.
b) the Tender Price, per lot (contract) if applicable, including any discounts.
c) any alternative Tenders;
d) the presence or absence of a Tender Security, if new as required;
e) number of pages of each tender document submitted.

25.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening register shall be distributed to all Tenderers.

E. EVALUATION AND COMPARISON OF TENDERS

26. Confidentiality

26.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 43.

26.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.

26.3 Notwithstanding ITT 26.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any matter related to the tendering process, it shall do so in writing.

27.0 Clarification of Tenders

27.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 31.

27.2 If a tenderer does not provide clarifications of its tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

28.0 Deviations, Reservations, and Omissions

28.1 During the evaluation of tenders, the following definitions apply: -

a) *"Deviation"* is a departure from the requirements specified in the tender document;
b) *"Reservation"* is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tender document; and
c) *"Omission"* is the failure to submit part or all of the information or documentation required in the Tender document.

29.0 Determination of Responsiveness

29.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 11.

29.2 A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:

a) Affect in any substantial way the scope, quality, or performance of the Works specified in the Contract;

b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract;

c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.

29.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 16, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

29.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30.0 Non-material Non-conformities

30.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.

30.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non- conformities in the tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.

30.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable non-material non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the TDS.**

31.0 Arithmetical Errors

31.1 The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity.

31.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis: -

a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.

b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and

c) if there is a discrepancy between words and figures, the amount in words shall prevail

31.3 Tenderers shall be notified of any error detected in their bid during the notification of award.

32.0 Conversion to Single Currency

For evaluation and comparison purposes, the currency(ies) of the Tender shall be converted into a single currency as specified in the **TDS**.

33.0 Margin of Preference and Reservations

33.1 A margin of preference may be allowed only when the contract is open to international competitive tendering where foreign contractors are expected to participate in the tendering process and where the contract exceeds the value/threshold specified in the Regulations.

33.2 A margin of preference shall not be allowed unless it is specified so in the **TDS**.

33.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 33.4.

33.4 Where it is intended to reserve a contract to a specific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses or firms belonging to the specified group are eligible to tender. No tender shall be reserved to more than one group. If not so stated in the Invitation to Tender and in the Tender documents, the invitation to tender will be open to all interested tenderers.

34.0 Nominated Subcontractors

34.1 Unless otherwise stated in the **TDS,** the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity. Incase the Procuring Entity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.

34.2 Tenderers may propose sub-contracting up to the percentage of total value of contracts or the volume of works as specified in the **TDS**. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.

34.3 Domestic subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated so by the Procuring Entity in the **TDS** a scan be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

35. Evaluation of Tenders

35.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Lowest Evaluated Tender in accordance with ITT 40.

35.2 To evaluate a Tender, the Procuring Entity shall consider the following:

a) price adjustment in accordance with ITT 31.1 (iii); excluding provisional sums and contingencies, if any, but including Daywork items, where priced competitively.

b) price adjustment due to discounts offered in accordance with ITT 14.4;

c) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 32;

d) price adjustment due to quantifiable nonmaterial non-conformities in accordance with ITT 30.3; and

e) any additional evaluation factors specified in the **TDS** and Section III, Evaluation and Qualification Criteria.

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be considered in Tender evaluation.

35.4 Where the tender involves multiple lots or contracts, the tenderer will be allowed to tender for one or more lots (contracts). Each lot or contract will be evaluated in accordance with ITT 35.2. The methodology to determine the lowest evaluated tenderer or tenderers base done lot (contract) or based on a combination of lots (contracts), will be specified in Section III, Evaluation and Qualification Criteria. In the case of multiple lots or contracts, tenderer will be required to prepare

the Eligibility and Qualification Criteria Form for each Lot.

36.0 Comparison of tenders

The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 35.2 to determine the Tender that has the lowest evaluated cost.

37.0 Abnormally low tenders and abnormally high tenders

Abnormally Low Tenders

37.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regard to the Tenderer's ability to perform the Contract for the offered Tender Price or that genuine competition between Tenderers is compromised.

37.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

37.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

Abnormally high tenders

37.4 An abnormally high tender price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

37.5 Incase of a nab normally high price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.

ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

37.6 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering.

38.0 Unbalanced and/ or front-loaded tenders

38.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or frontloaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tender document.

38.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

a) accept the Tender;

b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 30% of the Contract Price;

c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works;

d) reject the Tender,

39.0 Qualifications of the tenderer

39.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

39.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 17. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Sub-contractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

39.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

40.0 Lowest evaluated tender

Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Lowest Evaluated Tender. The Lowest Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:

a) Most responsive to the Tender document; and

b) the lowest evaluated price.

41.0 Procuring entity's right to accept any tender, and to reject any or all tenders.

The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without thereby incurring any liability to Tenderers. Incase of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

F. AWARD OF CONTRACT

42.0 Award criteria

The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.

43.0 Notice of Intention to Enter into a Contract/Notification of Award

Upon award of the contract and prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract/Notification of award to all tenderers which shall contain, at a minimum, the following information:

a) the name and address of the Tenderer submitting the successful tender;

b) the Contract price of the successful tender;

c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;

d) the expiry date of the Standstill Period; and

e) instruction son how to request a debriefing and/ or submit a complaint during the stand still period;

44.0 Stand still Period

44.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

44.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter into a Contract with the successful Tenderer.

45.0 Debriefing by The Procuring Entity

45.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 43, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

45.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

46.0 Letter of Award

Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 42.1, upon addressing a complaint that has been filed with in the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

47.0 Signing of Contract

47.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

47.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.

47.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period.

48.0 Performance Security

48.1 Within twenty-one (21) days of the receipt of the Letter of Award from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and, any other documents required in the **TDS**, in accordance with the General Conditions of Contract, subject to ITT 38.2 (b), using the Performance Security and other Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.

48.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security and other documents required in the **TDS** or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

48.3 Performance security shall not be required for contracts estimated to cost less than the amount specified in the Regulations.

49.0 Publication of Procurement Contract

Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

a) name and address of the Procuring Entity;

b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;

c) the name of the successful Tenderer, the final total contract price, the contract duration;

d) dates of signature, commencement and completion of contract;

e) names of all Tenderers that submitted Tenders, and their Tender prices as readout at Tender opening.

50.0 Procurement related Complaints and Administrative Review

50.1 The procedures for making Procurement-related Complaints are as specified in the **TDS.**

50.2 A request for administrative review shall be made in the form provided under contract forms.

Section II - Tender Data Sheet (TDS)

The following specific data shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict, the provisions herein shall prevail over those in ITT.

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
A. General	
ITT 1.1	The name of the contract is **PROPOSED MMUST CLINIC RENOVATION AND EXTENSION** The reference number of the Contract is **MMUST/EST/007/204-2025** The number and identification of lots (contracts) comprising this Tender are *[insert number and identification of lots (contracts)]* Lot 1- Name **N/A** Lot 2- Name **N/A** Lot… Name **N/A** ETC.
ITT 2.4	The Information made available on competing firms is as follows: **N/A**
ITT 2.4	The firms that provided consulting services for the contract being tendered for are:
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: ***[insert a number].***
B. Contents of Tender Document	
ITT 7.1	(i) The Tenderer will submit any request for clarifications in writing at the Address **Email: procurementofficer@mmust.ac.ke** to reach the Procuring Entity not later than 10.00 a.m Tuesday 4th March 2025 (ii) The Procuring Entity shall publish its response at the website **Yes**
ITT 7.2	(A) A pre-arranged pretender site visit *shall Not* take place at the following date, time and place: The Tenderer is advised to visit and examine the Site and its surroundings and obtain for himself on his own responsibility, all information that may be necessary for preparing the tender and entering into a contract. The costs of visiting the Site shall be the tenderer's own responsibility. The Tenderer and any of his personnel or agents will be granted permission by the Employer to enter upon premises and lands for the purpose of such inspection, but only upon the express condition that the Tenderer, his personnel or agents, will release and indemnify the Employer from and against all liability in respect of, and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which but for the exercise of such permission, would not have arisen. (B) Pre-Tender meeting *shall not* take place at the following date, time and place: N/A
ITT 7.3	The Tenderer will submit any questions in writing during the site meeting.

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 7.5	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is www.mmust.ac.ke
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: **Procurement Office** **Masinde Muliro University of Science & Technology** **P.O. Box 190 – 50100 Kakamega** **Kakamega – Webuye Road** **Telephone No: 0702 597360 / 057 2505223 / 057 2505223** **Email: procurementofficer@mmust.ac.ke**
C. Preparation of Tenders	
ITT 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: N/A
ITT 13.1	Alternative Tenders *shall not be* considered.
ITT 13.2	Alternative times for completion *shall not be* permitted.
ITT 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: N/A
ITT 14.5	The prices quoted by the Tenderer shall be: *fixed*
ITT 15.2 (a)	Foreign currency requirements **not allowed.**
ITT 18.1	The Tender validity period shall be **120** days.
ITT 18.3	(a) The Number of days beyond the expiry of the initial tender validity period will be 30 days. (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By _____% of t*he local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,* *and* *(ii) By_____% the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension.*
ITT 19.1	Tender shall provide **a Tender Security** The type of Tender security shall be **Kshs. 400,000/-** in form of a banker's cheque, a bank guarantee / bankers cheque from a reputable bank approved by the PPRA located in Kenya.
ITT 20.1	In addition to the original of the Tender, the number of copies is: **One (1)**
ITT 20.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: • Name of the person duly authorized to sign the tender on behalf of the tenderer • Title of the person signing the tender • Signature of the person named above • Company Seal/Rubber stamp (where applicable)
D. Submission and Opening of Tenders	
ITT 22.1	(A) For Tender submission purposes only, the Procuring Entity's address is: Completed tender documents are to be enclosed in plain sealed envelopes, marked with the tender number and name and be deposited in the Tender Box at Masinde Muliro University of Science and Technology or be addressed to: -

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	A. ***The Vice Chancellor,*** ***Masinde Muliro University*** ***P.O Box 190 – 50100,*** ***Kakamega*** B. ***Kakamega –Webuye Road*** And dropped in Tender Box situated outside Administration Building Main entrance, Main Campus in Kakamega, so as to reach the University On or before 10.00 a.m Tuesday 4th March 2025 Tenders that do not fit in the tender box will be submitted at the Procurement Office in the Administration Building. Opening of the bid documents will be done immediately thereafter in the presence of applicants or their representatives who choose to attend. (4) Date and time for submission of Tenders: 10.00 a.m Tuesday 4th March 2025. (5) Tenderers **shall not submit** tenders electronically.
ITT 25.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided below: ***Masinde Muliro University of Science & Technology*** ***P.O Box 190 – 50100, Kakamega*** ***Kakamega –Webuye Road*** Venue for opening of the bid documents will be communicated during closing of the tenders at the location of the tender box as communicated above. Immediately after closing the tenders, opening of the tenders will follow.
ITT 25.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures **specified below** *[insert a description of the electronic Tender opening procedures]***: N/A**
E. Evaluation, and Comparison of Tenders	
ITT 30.3	The adjustment shall be based on the _____ *[insert "average" or "highest"]* price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
TT 32.1	The currency that shall be used for Tender evaluation and comparison purposes only to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: **Kenya Shillings** The source of exchange rate shall be: **The Central bank of Kenya** (mean rate) The date for the exchange rate shall be*:* **the deadline date for Submission of the Tenders.** *For comparison of Tenders, the Tender Price, corrected pursuant to ITT 31, shall first be broken down into the respective amounts payable in various currencies by using the selling exchange rates specified by the Tenderer in accordance with ITT 15.1.* *In the second step, the Procuring Entity will convert the amounts in various currencies in which the Tender Price is payable (excluding Provisional Sums but including Daywork where priced competitively) to the single currency identified above at the selling rates established for similar transactions by the authority specified and, on the date, stipulated above.*
ITT 33.2	A margin of preference *[insert either "shall" or "shall not"*] _____apply. *[If a margin of preference applies, the application methodology shall be defined in Section III – Evaluation and Qualification Criteria.]*
ITT 33.4	The invitation to tender is extended to the following group that qualify for Reservations: **The tender is a National Open Tender for all eligible tenderers**
ITT 34.1	At this time, the Procuring Entity *"intends"* to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 34.2	Contractor's may propose sub-contracting: Maximum percentage of subcontracting permitted is: 10% of the total contract amount. Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity(ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 34.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: N/A For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.
ITT 35.2 (e)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 48.1	Other documents required in addition to the Performance Security are _____
ITT 50.1	The procedures for making a Procurement-related Complaint are detailed in the "Notice of Intention to Award the Contract" herein and are also available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to: PPRA

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1.0 GENERAL PROVISIONS

1.1 This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity shall use **the Standard Tender Evaluation Document for Goods and Works** for evaluating Tenders.

1.2 Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

a) For construction turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.

b) Value of single contract - Exchange rate prevailing on the date of the contract signature.

(c) Exchange rates shall be taken from the publicly available source identified in the ITT 14.3. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.

1.3 EVALUATION AND CONTRACT AWARD CRITERIA

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that(i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

2.0 PRELIMINARY EXAMINATION FOR DETERMINATION OF RESPONSIVENESS

Preliminary examination for Determination of Responsiveness

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other mandatory requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements provided for in the preliminary evaluation criteria outlined below. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered non- responsive and will not be considered further.

STAGE 1- DETERMINATION OF RESPONSIVENESS

A) PRELIMINARY EXAMINATION

This stage of evaluation shall involve examination of the pre-qualification conditions as set out in the Tender Advertisement Notice or Letter of Invitation to Tender and any other conditions stated in the bid document.

These conditions shall include the following:

i. Category of Registration with National Construction Authority in the relevant trade and or any other statutory bodies. NCA Class 6 (NCA6)
ii. Single Business Permit with relevant County Government.
iii. Current certified Tax Compliance Certificate issued by Kenya Revenue Authority.
iv. Company Certificate of Incorporation.
v. Provision of bid security and of the correct amount.
vi. Dully filled Form of Tender.
vii. Submission of Two bid documents (clearly marked ‘original’ and ‘copy’)
viii. PPRA Eligibility (Form SD1)
ix. Self-Declaration That The Person/Tenderer Will Not Engage In Any Corrupt Or Fraudulent Practice. (FORM SD2
x. Any other conditions included in the advertisement notice/Invitation letter.

The Employer may seek further clarification/confirmation if necessary to confirm authenticity/compliance of any condition of the tender.

The tenderers who do not satisfy any of the above requirements shall be considered non-responsive and their tenders will not be evaluated further.

B) TECHNICAL EVALUATION

The tender document shall be examined based on the Instruction to Tenderers which states as follows:

In accordance with Instruction to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility and adequacy of resources to effectively carry out the subject contract. The tenderers shall be required to fill the Standards Forms provided for the purposes of providing the required information. The tenderers may also attach the required information if they so desire.

The award of points in this section shall be as shown below;

PARAMETER	**MAXIMUM POINTS**
(i) Form of Tender	2
(ii) Certificate of Independent Tender Determination	2
(iii) Tenderer's Eligibility-Confidential Business Questionnaire	5
(iv) Contractor's Representative and Key Personnel Schedule (FORM PER - 1)	28
(v) Contract completed in the last five (5) years (A max of 3 No. Projects) Shall attach Completion Certificates	12
(vi) Schedules of on-going projects	9
(vii) Schedules of contractors equipment	13
(viii) Audited Financial Report for the last 3 years	10
(ix) Evidence of Financial Resources	10
(xi) Historical Contract Non-Performance, Pending Litigation and Litigation History (Form CON-2)	5
(xii) Sanctity of the tender document as in accordance with clause 5 of instruction to tenderer	4
Total	**100**

The detailed scoring plan shall be as shown in table 1 below: -

TABLE 1

Item	Description	Point Scored	Max. Point	
i	**FORM OF TENDER** Signed and stamped ---------- 2 Signed but not stamped or vice versa----------1 Not signed nor stamped ----------0		**2**	
ii	**CERTIFICATE OF INDEPENDENT TENDER DETERMINATION** Completely filled ----------2 Partially filled ----------1 Not filled ----------0		**2**	
iii	**TENDERER'S ELIGIBILITY-CONFIDENTIAL BUSINESS QUESTIONNAIRE** Completely filled ---------- 5 Partially filled ---------- 2 Not filled ---------- 0		**5**	
iv	**Contractor's Representative and Key Personnel Schedule (FORM PER -1)**			**28**
	Director of the firm o Holder of degree in Civil Engineering, Construction Technology, Architecture or Quantity Surveying--7 o Ditto with Diploma----------5 o Ditto with certificate----------1 o No relevant certificate ----------0		**7**	
	At least 1 No. degree holder of key personnel in Civil Engineering/Quantity Surveying, Construction Technology or Architecture. o With over 10 years relevant experience ------5 o With over 5 years relevant experience ------- 3 o With under 5 years relevant experience ------1		**5**	
	At least 2 No Diploma holder of key personnel in Civil Engineering/Construction Technology, Quantity Surveying or Architecture o With over 10 years relevant experience------5 o With over 5 years relevant experience ------3 o With under 5 years relevant experience -----1		**10**	

Item	Description	Point Scored	Max. Point	
	At least 2 No Certificate holder in Civil Engineering, Construction Technology, Quantity Surveying) With over 10 years relevant experience----------3 With over 5 years relevant experience----------1 With under than 5 years' experience----------0		**6**	
v	***General Construction Experience (FORM EXP - 4.1)*** ***Specific Construction and Contract Management Experience (FORM EXP - 4.2a)*** ***Construction Experience in Key Activities*** (***FORM EXP - 4.2b)*** **Contract completed in the last five (5) years (A max of 3 No. Projects) Shall attach Completion Certificates.** o Project of similar nature, complexity and magnitude ---------- (4x3) o Project of similar nature but of lower value than the one in consideration---------- (2x3) o No completed project of similar nature ----------0		**12**	
vi	**On-going projects (A max of 3 No. Projects) Shall attach Notification of award or Contract Agreements.** o Project of similar nature, complexity and magnitude ---------- (3x3) o Project of similar nature but of lower value than the one in consideration ---------- (2x3) o No ongoing project of similar nature ----------0		**9**	
vii	***Schedules of contractors equipment (FORM EQU: EQUIPMENT) and transport (Shall attach proof or evidence of ownership by the company, if owned or and indicate the ability to lease (attach letter from the lessor), if leased)*** o 0.5CM Concrete Mixer (at least 1No) Owned ----4 Leased ----------1 Not provided----------0 o Lorries/Pickups (at least 1 No) Owned ------4 Leased ----------1 Not provided----------0 o Plate compactor. Owned ----------2 Leased ----------1 Not provided----------0 o Any other relevant equipment to be used in the installation of the works tendered for. (Maximum No. of equipment to be considered – 3No.) (1x3)		**13**	

Item	Description	Point Scored	Max. Point
viii	***Financial Situation and Performance (FORM FIN – 3.1)*** ***Average Annual Construction Turnover (FORM FIN – 3.2)*** ***Financial Resources (FORM FIN – 3.3)*** ***Current Contract Commitments / Works in Progress (FORM FIN – 3.4)*** **Annual audited financial reports (last three (3) years from 2021,2022,2023,2024)** o At least one of the annual turnover greater or equal to 5 times the cost of the project 10 o At least one of the annual turnover greater or equal to 3 times the cost of project 6 o At one of the annual turnover greater or equal to the cost of the project 3 o Annual turn-over below the cost of the project 0		**10**
ix	***Financial Situation and Performance (FORM FIN – 3.1)*** ***Average Annual Construction Turnover (FORM FIN – 3.2)*** ***Financial Resources (FORM FIN – 3.3)*** ***Current Contract Commitments / Works in Progress (FORM FIN – 3.4)*** **Evidence of financial resources (cash in hand, lines of credit, overdraft facility etc give proof of availability)** Cash in hand and lines of credit: Of more than 30% of tender sum 10 Of between 20% and 30% of tender sum 6 Of between 10% and 20% of tender sum 3 Below 10% of tender sum 1		**10**
xi	**Historical Contract Non-Performance, Pending Litigation and Litigation History (FORM CON –2)** o Filled 5 o Not filled 0		**5**
xii	**Sanctity of tender documents** o Having the document intact (not tampered with in any way) ----------4 o Having mutilated or modified the tender document---0		**4**
	TOTAL TECHNICAL SCORE (TS)		**100**

3.0 TENDER EVALUATION (ITT 35)

Price evaluation: in addition to the criteria listed in ITT 35.2 (a) – (d) the following criteria shall apply:

(i) Alternative Completion Times, if permitted under ITT13.2, will be evaluated as follows: ……

(ii) Alternative Technical Solutions for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows:……

(iii) Other Criteria; if permitted under ITT 35.2(j): ……

4.0 MULTIPLE CONTRACTS

4.1 Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and a lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.

OPTION 1

(i) If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.

(ii) If a tenderer wins more than one Lot, the tender will be awarded a contract for all won Lots, provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots. The tenderer will be awarded only the combinations for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

OPTION2

The Procuring Entity will consider all possible combinations of won Lots [contract(s)] and determine the combination with the lowest evaluated price. Tenders will then be awarded to the Tenderer or Tenderers in the combination provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots.

5.0 ALTERNATIVE TENDERS (ITT 13.1)

Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 3.1, will be evaluated as follows:

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2 - Works requirements. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

6.0 MARGIN OF PREFERENCE

6.1 If the TDS so specifies, the Procuring Entity will grant a margin of preference of fifteen percent (15%) to be loaded on evaluated prices of the foreign tenderers, where the percentage of shareholding of Kenyan citizens is less than fifty- one percent (51%).

6.2 Contractors shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference.

6.3 After Tenders have been received and reviewed by the Procuring Entity, responsive Tenders shall be assessed to ascertain their percentage of shareholding of Kenyan citizens. Responsive tenders shall be classified into the following groups:

i) *Group A:* tenders offered by Kenyan Contractors and other Tenderers where Kenyan citizens hold shares of over fifty one percent (51%).

ii) *Group B:* tenders offered by foreign Contractors and other Tenderers where Kenyan citizens hold shares of less than fifty one percent (51%).

64 All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 6.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group B and the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected for award. If not, the lowest evaluated tender from Group B based on the first evaluation price shall be selected.

7. Post qualification and Contract ward (ITT 39), more specifically,

a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.

b) Incase the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings Five Million (Kshs. 5,000,000.00)

ii) Minimum average annual construction turnover of Kenya Shillings Kshs. 20,000,000 [Twenty Million], equivalent calculated as total certified payments received for contracts in progress and/or completed within the last three (3) years.

iii) At least three (3) contract(s) of a similar nature executed within Kenya, or the East African Community or a broad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings Ten Million (Kshs 10,000,000) or equivalent.

iv) Contractor's Representative and Key Personnel, which are specified as having all of the following minimum qualifications

- Director (or one of the directors) of the firm a holder of at least diploma in Civil Engineering, Construction Technology, Architecture, quantity Surveying or any course relevant to building construction
- At least one (1) staff of the key personnel a holder of degree in Civil Engineering, Construction Technology, Architecture or quantity Surveying with at least five (5) years experience,
- At least two (2) staff of the key personnel a holder of diploma in Civil Engineering, Construction Technology, Architecture or quantity Surveying with at least five (5) years experience,
- At least two (2) staff of the key personnel a holder of certificate in Civil Engineering, Construction Technology, Architecture or quantity Surveying with at least five (5) years experience,

v) Contractor`s key equipment listed on the table "Contractor's Equipment" below and more specifically listed as below, the contractor should show evidence of ownership of all the following:

- At least one machinery of dump trucks/ lorries owned
- At least any other three (3) machinery relevant in construction of storey building

iv) Other conditions depending on their seriousness.

a) **History of non-performing contracts**:

Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that

non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last five (5) years. The required information shall be furnished in the appropriate form.

b) Pending Litigation

Financial position and prospective long-term profit ability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

c) Litigation History

There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last Five (5) years All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or on going under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

QUALIFICATION FORM*

1	**2**	**3**	***4***	***5***
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI – 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by Kenya Revenue Authority in accordance with ITT 3.14.	Attachment	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI – 1.1 and 1.2, with attachments	
6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI – 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1st January 2020.	Form CON-2	
8	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON – 2	
10	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1st January *2020*	Form CON – 2	
11	Financial Capabilities	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as at least **Kenya Shillings Ten Million**, **Kshs 10,000,000.00** annually or equivalent for the subject contract(s) net of the Tenderer's other commitments. (ii) The Tenderers shall also demonstrate, to the satisfaction of the Procuring	Form FIN – 3.1, with attachments	

1	2	3	*4*	*5*
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
		Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. (iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the Procuring Entity, for the last three (3) years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.		
12	Average Annual Construction Turnover	Minimum average annual construction turnover of Kenya Shillings *Twenty Million (Kshs 20,000,000)* ,or equivalent calculated as total certified payments received for contracts in progress and/or completed within the last *five (5)* years, divided by three (3) years	Form FIN – 3.2	
13	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last five (*5)* years, starting 1st January 2019	**4.** Form EXP – 4.1 **Experience**	
14	Specific Construction & Contract Management Experience	A minimum number of three (3) similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between 1st January 2019 and tender submission deadline i.e. …. (number) contracts, each of minimum value Kenya shillings Ten Million (Ksh. 10,000,000) or equivalent. [*In case the Works are to be tender as individual contracts under multiple contract procedure, the minimum number of contracts required for purposes of evaluating qualification shall be selected from the options mentioned in ITT 35.4]* The similarity of the contracts shall be based on the following: [*Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other characteristics including part of the requirements that may be met by specialized subcontractors, if permitted in accordance with ITT 34.3]*	Form EXP 4.2(a)	

SECTION IV - TENDERING FORMS

QUALIFICATION FORMS

1. FOREIGN TENDERERS 40%RULE

Pursuant to ITT 3.9, a foreign tenderer must complete this form to demonstrate that the tender fulfils this condition.

ITEM	Description of Work Item	Describe location of Source	COST in K. shillings	Comments, if any
A	Local Labor			
1				
2				
3				
4				
5				
B	Subcontracts from Local sources			
1				
2				
3				
4				
5				
C	Local materials			
1				
2				
3				
4				
5				
D	Use of Local Plant and Equipment			
1				
2				
3				
4				
5				
E	Add any other items			
1				
2				
3				
4				
5				
6				
	TOTAL COST LOCAL CONTENT		**XXXXX**	
	PERCENTAGE OF CONTRACT PRICE			

Sign and Stamp_____ Date_____

2. FORM EQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

3. FORM PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Re presentative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

1.	**Title of position:** Contractor's Representative	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
2.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
3.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
4.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
5.	**Title of position:** *[insert title]*	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

4. FORM PER - 2:

Resume and Declaration - Contractor's Representative and Key Personnel.

Name of Tenderer

Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading and writing skills]*	
Details		
	Address of Procuring Entity:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Procuring Entity:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

I, the undersigned *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*
Time commitment:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Tender evaluation;

(b) result in my disqualification from participating in the Tender;

(c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel: [*insert name*]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

5.1 FORM ELI -1.1 Tenderer Information Form

Date:_____ ITT No. and title:_____

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 3.6 ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5 ☐In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing: • Legal and financial autonomy • Operation under commercial law 1. Establishing that the Tenderer is not under the supervision of the Procuring Entity 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

52 FORM ELI -1.2

Tenderer's JV Information Form
(to be completed for each member of Tenderer's JV)

Date:_____

ITT No. and title:_____

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.5. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

53 FORM CON –2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1 ☐ Contract(s) withdrawn since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	**Non- performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Reason(s) for non-performance: *[indicate main reason(s)]*	*[insert amount]*
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3. ☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
		Contract Identification: _____ Name of Procuring Entity: _____ Address of Procuring Entity: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			
☐ No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. ☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
[insert year]	*[insert percentage]*	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Matter in dispute: *[indicate main issues in dispute]* Party who initiated the dispute: *[indicate "Procuring Entity" or "Contractor"]* Reason(s) for Litigation and award decision *[indicate main reason(s)]*	*[insert amount]*

Include details relating to potential bid-rigging practices such as previous occasions where tenders were withdrawn, joint bids with competitors, subcontracting work to unsuccessful tenderers, etc.

5.4 FORM FIN – 3.1:

Financial Situation and Performance

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

5.4.1. Financial Data

Type of Financial information in_____ (currency)	**Historic information for previous _____*years*, _____ (amount in currency, currency, exchange rate*, USD equivalent)**				
	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

5.4.2 Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (Kenya Shilling equivalent)
1		
2		
3		

5.4.3 Financial documents

The Tenderer and its parties shall provide copies of financial statements for _____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

(a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[1] for the _____ years required above; and complying with the requirements

[1] If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

5.5 FORM FIN – 3.2:

Average Annual Construction Turnover

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

	Annual turnover data (construction only)		
Year	**Amount Currency**	**Exchange rate**	**Kenya Shilling equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Construction Turnover *			

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

5.6 FORM FIN – 3.3:

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria

Financial Resources		
No.	**Source of financing**	**Amount (Kenya Shilling equivalent)**
1		
2		
3		

5.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

Tenderers and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments					
No.	**Name of Contract**	**Procuring Entity's Contact Address, Tel,**	**Value of Outstanding Work [Current Kenya Shilling /month Equivalent]**	**Estimated Completion Date**	**Average Monthly Invoicing Over Last Six Months [Kenya Shilling /month)]**
1					
2					
3					
4					
5					

5.8 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

Page _____of _____pages

Starting Year	Ending Year	Contract Identification	Role of Tenderer
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	

5.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____
Date: _____
JV Member's Name_____
ITT No. and title: _____

Similar Contract No.	**Information**			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				

5.9 FORM EXP - 4.2 (a) (cont.)

Specific Construction and Contract Management Experience (cont.)

Similar Contract No.		**Information**
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:		
1.	Amount	
2.	Physical size of required works items	
3.	Complexity	
4.	Methods/Technology	
5.	Construction rate for key activities	
6.	Other Characteristics	

5.10 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____
Date: _____
Tenderer's JV Member Name: _____
Sub-contractor's Name[2] (as per ITT 34): _____
ITT No. and title: _____

All Sub-contractors for key activities must complete the information in this form as per ITT 34 and Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One: _
_____

	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)	Percentage participation (ii)		Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				

	Information
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:	

2. Activity No. Two
3. ……

[2] If applicable

OTHER FORMS

6. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

i) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.

ii) All italicized text is to help Tenderer in preparing this form.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER attached to this Form of Tender.

iv) The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.

- *Tenderer's Eligibility- Confidential Business Questionnaire*
- *Certificate of Independent Tender Determination*
- *Self-Declaration of the Tenderer*

Date of this Tender submission: *[insert date (as day, month and year) of Tender submission]*

Request for Tender No.: *[insert identification]* **Name and description of Tender** *[Insert as per ITT)* **Alternative No.:** *[insert identification No if this is a Tender for an alternative]*

To: *[insert complete name of Procuring Entity]*

Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to construct and complete the Works and remedy any defects therein for the sum[3] of Kenya Shillings [*[Amount in figures]* _____Kenya Shillings *[amount in words]*_____

   The above amount includes foreign currency[4] amount (s) of [*state figure or a percentage and currency*] [figures]_____[words] _____
   _____

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

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

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

5. We, the undersigned, further declare that:

   i) No reservations: We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT 28;

[3] *This sum should be carried forward from the Summary of the Bills of Quantities.*
[4] *The percentage quoted above should not include provisional sums, and not more than two foreign currencies are allowed.*

ii) Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;

iii) Tender - Securing Declaration: We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's Country in accordance with ITT 19.8;

iv) Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works];*

v) Tender Price: The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*

vi Option 1, incase of one lot: Total price is: *[insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies*]; or

Option2, in case of multiple lots:

(a) Total price of each lot [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and

(b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

vii) Discounts: The discounts offered and the methodology for their application are:

viii) The discounts offered are: [*Specify in detail each discount offered.*]

ix) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

x) Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

xi) Performance Security: If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;

xii) One Tender Per Tender: Weare not submitting any other Tender(s) as an individual Tender, and we are not participating in any other Tender(s) as a Joint Venture member or as a sub-contractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 13.3;

xiii) Suspension and Debarment: We, along with any of our subcontractors, suppliers, Engineer, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.

xiv) State-owned enterprise or institution: [*select the appropriate option and delete the other*] [*We are not a state- owned enterprise or institution*]/[*We are a state-owned enterprise or institution but meet the requirements of ITT3.8*];

xv) Commissions, gratuities, fees: We have paid, or will pay the following commissions, gratuities, or fees with respect to the tender process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

Name of Recipient	**Address**	**Reason**	**Amount**

(If none has been paid or is to be paid, indicate "none.")

xvi) Binding Contract: We understand that this Tender, together with your written acceptance there of included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

xvii) Not Bound to Accept: We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;

xviii) Fraud and Corruption: We here by certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption; and

xix) Collusive practices: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the "Certificate of Independent Tender Determination" attached below.

xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from_____(*specify website*) during the procurement process and the execution of any resulting contract.

xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:

a) Tenderer's Eligibility: Confidential Business Questionnaire - to establish we are no tin any conflict to interest.

(b) Certificate of Independent Tender Determination - to declare that we completed the tender without colluding with other tenderers.

(a) Self-Declaration of the Tenderer - to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.

(d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal.

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in **"Appendix 1 - Fraud and Corruption**" attached to the Form of Tender.

Name of the Tenderer: *[*insert complete name of person signing the Tender*]

Name of the person duly authorized to sign the Tender on behalf of the Tenderer: **[*insert complete name of person duly authorized to sign the Tender*]

Title of the person signing the Tender: [*insert complete title of the person signing the Tender*]

Signature of the person named above: [*insert signature of person whose name and capacity are shown above*]

Date signed [*insert date of signing*] day of [*insert month*], [*insert year*]

Date _____signed_____day of_____

Notes

** In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer.*

***Person signing the Tender shall have the power of attorney given by the Tenderer to be attached with the Tender.*

(a) **TENDERER'S ELIGIBILITY-CONFIDENTIAL BUSINESS**

QUESTIONNAIRE Instruction to Tenderer

Tender is in structed to complete the particulars required in this Form, *one form for each entity if Tender is a JV.* Tenderer is further reminded that it is an offence to give false information on this Form.

(a) Tenderer's details

	ITEM	DESCRIPTION
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange	

General and Specific Details

(b) Sole Proprietor, provide the following details.

Name in full_____Age_____
Nationality_____Country of Origin_____
Citizenship_____

(c) Partnership, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

(d) Registered Company, provide the following details.

I) Private or public Company _____

ii) State the nominal and issued capital of the Company_____

Nominal Kenya Shillings (Equivalent).....
Issued Kenya Shillings (Equivalent).....

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

(e) DISCLOSURE OF INTEREST - Interest of the Firm in the Procuring Entity.

i) Are there any person/persons in…… (*Name of Procuring Entity)* who has/have an interest or relationship in this firm? Yes/No……

If yes, provide details as follows.

	Names of Person	Designation in the Procuring Entity	Interest or Relationship with Tenderer
1			
2			
3			

(iii) Conflict of interest disclosure

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name Title or

Designation

_____ _____

(Signature) *(Date)*

b) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the_____ *[Name of Procuring Entity]* for:_____ *[Name and number of tender]* in response to the request for tenders made by:_____ *[Name of Tenderer]* do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of_____ *[Name of Tenderer]*that:

1. I have read and I understand the contents of this Certificate;
2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;
4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
   a) Has been requested to submit a Tender in response to this request for tenders;
   b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;
5. The Tenderer discloses that [check one of the following, as applicable]:
   a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
   b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;
6. In particular, without limiting the generality of paragraphs (5)(a) or(5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   a) prices;
   b) methods, factors or formulas used to calculate prices;
   c) the intention or decision to submit, or not to submit, a tender; or
   d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;
7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph(5)(b) above;
8. The terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name

_____

Title

_____

Date

_____

[Name, title and signature of authorized agent of Tenderer and Date]

(c) SELF- DECLARATION FORMS

FORM SD1

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

I, ……., of Post Office 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/Direct or 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 here in above is true to the best of my knowledge, information and belief.

……. …….
…… (Title)
(Signature)
(Date)

Bidder Official Stamp

FORM SD2

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 therefore said 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 here in above is true to the best of my knowledge information and belief.

…… …… ……..... ……

(Title) (Signature) (Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I ……. (person) on behalf of ***(Name of the Business/ Company/Firm***) **.....**
…….. declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

I do here by commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory.....

Sign…….....

Position.....

Office address.....

Telephone.....

E-mail…….....

Name of the Firm/Company…….....

Date…….....

(Company Seal/ Rubber Stamp where applicable)

Witness

Name…….....

Sign…….....

Date…….....

(d) APPENDIX 1 - FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

1.1 The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act *(no. 33 of 2015)* and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

2. Requirements

2.1 The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.

2.2 Kenya's public procurement and asset disposal act *(no. 33 of 2015)* under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behaviour:

1) A person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or as set disposal proceeding;
2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;
3) Without limiting the generality of the subsection (1) and (2), the person shall be: -
   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or
   b) if a contract has already been entered into with the person, the contract shall be voidable;
4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;
5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement: -
   a) Shall not take part in the procurement proceedings;
   b) shall not, after a procurement contract has been entered in to, take part in any decision relating to the procurement or contract; and
   c) shall not be a subcontract or for the tender to whom was awarded contract, or a member of the group of tenderers to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.
6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflict of interest to the procuring entity;
7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated, and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

3. In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:
   a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:
      i) "Corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
      ii) "Fraudulent practice" is any act or omission, including is representation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation.
      iii) "Collusive practice" is an arrangement between two or more parties designed to

achieve an improper purpose, including to influence improperly the actions of another party; "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

iv) "Obstructive practice" is:

- Deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
- acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.

b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:
"Fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.

c) Rejects a proposal for award[1] of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

d) Pursuant to the Kenya's above stated Acts and Regulations, may recommend to appropriate authority(ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring(i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect[2] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and

f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a "Self-Declaration Form" as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

[1] *For the avoidance of doubt, a party's in eligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.*

[2] *Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies there of as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

FORM OF TENDER SECURITY-[Option 1–Demand Bank Guarantee]

Beneficiary:_____

Request for Tenders No:_____

Date:_____

TENDER GUARANTEE No.:_____

Guarantor: _____

1. We have been informed that_____(here in after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here in after called" the Tender") for the execution of_____ under Request for Tenders No._____("the ITT").
2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.
3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(__) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or

b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.
5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

_____

[signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

1. Whereas …… [*Name of the tenderer]* (hereinafter called "the tenderer") has submitted its tender dated …… [*Date of submission of tender]* for the …… *[Name and/or description of the tender]* (hereinafter called "the Tender") for the execution of_under Request for Tenders No._____("the ITT").

2. KNOW ALL PEOPLE by these presents that WE …… of …… [**Name of Insurance Company**] having our registered office at …… (hereinafter called "the Guarantor"), are bound unto …….. [*Name of Procuring Entity*] (hereinafter called "the Procuring Entity") in the sum of …… (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.
Sealed with the Common Seal of the said Guarantor this ___day of _____ 20 __.

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Applicant:

   a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or

   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

   then the guarantee undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii)twenty-eight days after the end of the Tender Validity Period.

5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

_____	_____
[Date]	*[Signature of the Guarantor]*
_____	_____
[Witness]	*[Seal]*

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORM OF TENDER - SECURING DECLARATION

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

Date: ..... *[insert date (as day, month and year) of Tender Submission]*

Tender No.: ..... *[insert number of tendering process]*

To: ..... *[insert complete name of Purchaser]* I/We, the

undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.

2. I/We accept that I/we will automatically be suspended from being eligible for tendering 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 tender during the period of tender validity specified by us in the Tendering Data Sheet; 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 tenders.

3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
   a) Our receipt of a copy of your notification of the name of the successful Tenderer; or
   b) thirty days after the expiration of our Tender.

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

Signed:……..…….. Capacity/title (director

or partner or sole proprietor, etc.) …….…….....……

Name:…….. Duly

authorized to sign the bid for and on behalf of: *[insert complete name of Tenderer]*

Dated on ……. day of ……., ……. *[Insert date of signing]* Seal or stamp

Appendix to Tender

Schedule of Currency requirements

Summary of currencies of the Tender for_____*[insert name of Section of the Works]*

Name of currency	*Amounts payable*
Local currency: _____	
Foreign currency #1: _____	
Foreign currency #2: _____	
Foreign currency #3: _____	
Provisional sums expressed in local currency _____	[*To be entered by the Procuring Entity*]

PART II - THE CONDITIONS OF CONTRACT AND CONTRACT

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)

Procuring Entity: Masinde Muliro University of Science and Technology

Contract: Proposed MMUST Clinic Renovation and Extension

General Conditions of Contract

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1. GENERAL PROVISIONS

1.1 Definitions

In this Contract, except where context otherwise requires, the following terms shall be interpreted as indicated below. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

"Accepted Contract Amount" means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.

"Base Date" means a date 30 day prior to the submission of tenders.

"Bill of Quantities" means the priced and completed Bill of Quantities forming part of the

tender. **"Completion Date"** means the date of completion of the Works as certified by the

Engineer.

"Contract Price" means the price defined in the contract and thereafter as adjusted in accordance with the provisions of the Contract.

"Contract" means the agreement entered into between the Procuring Entity 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.

"Contractor's Documents" means the calculations, computer programs and other software, progress reports, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.

"Contractor's Equipment" means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Procuring Entity's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

"Contractor's Personnel" means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.

"Contractor's Representative" means the person named by the Contractor in the Contractor appointed from time to time by the Contractor who acts on behalf of the Contractor.

"Contractor" means the person(s) named as contractor in the Form of Tender accepted by the Procuring Entity.

"Cost" means expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

"Day" means a calendar day and **"year"** means 365 days.

"Dayworks" means Work inputs subject to payment on a time basis for labour and the associated materials and plant.

"Defect" means any part of the Works not completed in accordance with the Contract.

"Defects Liability Certificate" means the certificate issued by Architect upon correction of defects by the Contractor.

"Defects Liability Period" means the period named in the Special Conditions of Contract and calculated from the Completion Date, within which the contractor is liable for any defects that may develop in the handed over works.

"Defects Notification Period" means the period for notifying defects in the Works or a Section(as the case maybe) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over the days stated in the Special Conditions of Contract.

"Drawings" means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract.

"Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].

"Final Statement" means the statement defined in Sub-Clause 14.11 [Application for Final Payment

Certificate]. **"Force Majeure"** is defined in Clause19 [Force Majeure].

"Foreign Currency" means a currency of another country (not Kenya) in which part (or all) of the Contract Price is payable, but not the Local Currency.

"Goods" means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.

"Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.

"Laws" means all national legislation, statutes, ordinances, and regulations and by-laws of any legally constituted public authority.

"Letter of Acceptance" means the letter of formal acceptance of a tender, signed by Procuring Entity, including any annexed memoranda comprising agreements between and signed by both Parties.

"Local Currency" means the currency of Kenya.

"Materials" means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.

"Notice of Dissatisfaction" means the notice given by either Party to the other under Sub-Clause 20.3 indicating its dissatisfaction and intention to commence arbitration.

"Special Conditions of Contract" means the pages completed by the Procuring Entity entitled Special Conditions of Contract which constitute Part A of the Special Conditions.

"Party" means the Procuring Entity or the Contractor, as the context requires.

"Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment]. **"Performance Certificate"** means the certificate issued under Sub-Clause 11.9 [Performance Certificate]. **"Performance Security"** means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security]. **"Permanent Works"** means the permanent works to be executed by the Contractor under the Contract.

"Plant" means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Procuring Entity and relating to the construction or operation of the Works.

"Procuring Entity's Equipment" means the apparatus, machinery and vehicles (if any) made available by the Procuring Entity for the use of the Contract or in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Procuring Entity.

"Procuring Entity's Personnel" means the Engineer, the Engineer, the assistants and all other staff, labour and other employees of the Architect and of the Procuring Entity; and any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as Procuring Entity's Personnel.

"Procuring Entity" means the Entity named in the Special Conditions of Contract.

"Engineer" is the person named in the Appendix to Conditions of Contract (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Engineer) 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.

"Engineer" means the person appointed by the Procuring Entity to act as the Architect for the purposes of the Contract and named in the Special Conditions of Contract, or other person appointed from time to time by the Procuring Entity and notified to the Contractor

"Provisional Sum" means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].

"Retention Money" means the accumulated retention moneys which the Procuring Entity retains under Sub-Clause
14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].

"Schedules" means the document(s) entitled schedules, completed by the Contractor and submitted with the Form of Tender, as included in the Contract.

"Section" means a part of the Works specified in the Special Conditions of Contract as a Section (if any)

"Site Investigation Reports" are those reports that may be included in the tendering documents which a ref actual and interpretative about the surface and sub-surface condition sat the Site.

"Site" means the places where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.

"Specification" means the document entitled specification, as included in the Contract, and any

additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

"Start Date" or "Commencement 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).

"Statement" means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

"Subcontractor" means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works.

"Taking-Over Certificate" means a certificate issued under Clause 10 [Procuring Entity's Taking Over].

"Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.

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

"Tender" means the Form of Tender and all other documents which the Contractor submitted with the Form of Tender, as included in the Contract.

"Tests after Completion" means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Procuring Entity.

"Testson Completion" means the tests which are specified in the Contractor agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Procuring Entity.

"Time for Completion" means the time for completing the Works or a Section (as the case may be) as stated in the Special Conditions of Contract (with any extension calculated from the Commencement Date.

"Unforeseeable" means not reasonably foreseeable by an experienced contractor by the Base Date.

"Variation" means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].

"Works" means the items the Procuring Entity requires the Contractor to undertake as defined in the Appendix to Conditions of Contract. **"Works" may** also mean the Permanent Works and the Temporary Works, or either of them as appropriate.

1.2 Interpretation

In the Contract, except where the context requires otherwise:

a) Words indicating one gender include all genders;
b) words indicating the singular also include the plural and words indicating the plural also include the singular;
c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing;
d) "written" or "in writing" means hand-written, type-written, printed, or electronically made, and resulting in a permanent record; and

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

1.3 Communications

1.3.1 Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

a) In writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Special Conditions of Contract; and

b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Special Conditions of Contract. However:

   i) if the recipient gives notice of another address, communications shall thereafter be delivered; accordingly, and

   ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

1.3.2 Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Architect or the other Party, as the case may be.

1.4 Law and Language

1.4.1 The Contract shall be governed by the laws of **Kenya.**

1.4.2 The ruling language of the Contract shall be **English.**

1.5 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

a) The Contract Agreement,
b) The Letter of Acceptance,
c) The Special Conditions – Part A,
d) the Special Conditions – Part B
e) the General Conditions of Contract
f) the Form of Tender,
g) the Specifications and Bills of Quantities
h) the Drawings, and
i) the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Architect shall issue any necessary clarification or instruction.

1.6 Contract Agreement

The Parties shall enter into a Contract Agreement within 14 days after the Contractor receives the Contract Agreement, unless the Special Conditions establish otherwise. The Contract Agreement shall be based upon the form annexed to the Special Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Procuring Entity.

1.7 Assignment

The Contractor shall not assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, the contractor:

a) May as sign the whole or any part with the prior consent of the Procuring Entity, and
b) may, as security in favour of a bank or financial institution, assign its right to moneys due, or to become due, under the Contract.

1.8 Care and Supply of Documents

1.8.1 The Specifications and Drawings shall be in the custody and care of the Procuring Entity. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawings and Bills of Quantities shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.

1.8.2 Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Procuring Entity. Unless otherwise stated in the Contract, the Contractor shall supply to the Architect two copies of each of the Contractor's Documents.

1.8.3 The Contractor shall keep on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Procuring Entity's Personnel shall have the right of access to all these documents at all reasonable times.

1.8.4 If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.

1.9 Timely provision of Drawings or Instructions

1.9.1 The Contractor shall give notice to the Architect whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.

1.9.2 If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Architect to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any other associated costs accrued, which shall be included in the Contract Price.

1.9.3 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

1.9.4 However, if and to the extent that the Architect failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, or costs accrued.

1.10 Procuring Entity's Use of Contractor's Documents

1.10.1 As agreed between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

1.10.2 The Contractor shall be deemed (by signing the Contract) to give to the Procuring Entity a non-terminable transferable non-exclusive royalty-free license to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This license shall:

a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,

b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and

c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

1.10.3 The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Procuring Entity for purposes other than those permitted under Sub-Clause 1.10.2.

1.11 Contractor's Use of Procuring Entity's Documents

As agreed between the Parties, the Procuring Entity shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Procuring Entity. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Procuring Entity's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

1.12 Confidential Details

1.12.1 The Contractor's and the Procuring Entity's Personnel shall ensure confidentiality at all times. The confidentiality shall survive termination or completion of the contract. They shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation.

1.12.2 The Contractor's and the Procuring Entity's Personnel shall also treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

1.13 Compliance with Laws

The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Special Conditions of Contract:

a) The Procuring Entity shall have obtained (or shall obtain) the planning, zoning, building permit or similar permission for the Permanent Works, and any other permissions described in the Specifications as having been (or to be) obtained by the Procuring Entity; and the Procuring Entity shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and

b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licenses and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Procuring Entity harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence.

1.14 Joint and Several Liability

If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:

a) These persons shall be deemed to be jointly and severally liable to the Procuring Entity for the performance of the Contract;
b) these persons shall notify the Procuring Entity of their leader who shall have authority to bind the Contractor and each of these persons; and
c) the Contractor shall not alter its composition or legal status without the prior consent of the Procuring Entity.

1.15 Inspections and Audit by the Procuring Entity

Pursuant to paragraph 2.2(e). of Appendix B to the General Conditions, the Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Public Procurement Regulatory Authority, Procuring Entity and/or persons appointed or designated by the Government of Kenya to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Procuring Entity if requested by the Procuring Entity. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 15.6 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Procuring Entity's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of in eligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

2 THE PROCURING ENTITY

2.1 Right of Access to the Site

2.1.1 The Procuring Entity shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the **Special Conditions of Contract.** The right and possession may not be exclusive to the Contractor. If, under the Contract, the Procuring Entity is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Procuring Entity shall do so in the time and manner stated in the Specification. However, the Procuring Entity may withhold any such right or possession until the Performance Security has been received.

2.1.2 If no such time is stated in the Special Conditions of Contract, the Procuring Entity shall give the Contractor right of access to, and possession of, the Site within such times as required to enable the Contractor to proceed without disruption in accordance with the programme submitted under Sub-Clause 8.3 [Programme].

2.1.3 If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Procuring Entity to give any such right or possession within such time, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

2.1.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

2.1.5 However, if and to the extent that the Procuring Entity's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

2.2 Permits, Licenses or Approvals

2.2.1 The Procuring Entity shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:

a) Copies of the Laws of Kenya which are relevant to the Contract but are not readily available, and

b) any permits, licenses or approvals required by the Laws of Kenya:

i) which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws],
ii) for the delivery of Goods, including clearance through customs, and
iii) for the export of Contractor's Equipment when it is removed from the Site.

2.3 Procuring Entity's Personnel

The Procuring Entity shall be responsible for ensuring that the Procuring Entity's Personnel and the Procuring Entity's other contractor son the Site:

a) co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and

b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].

2.4 Procuring Entity's Financial Arrangements

The Procuring Entity shall make and maintain all necessary financial arrangements which will enable the Procuring Entity to pay the Contract Price punctually (as estimated at that time) in accordance with Clause14 [Contract Price and Payment].

3. THE ENGINEER

3.1 Architect Duties and Authority

3.1.1 The Procuring Entity shall appoint the Architect who shall carry out the duties as signed to him in the Contract. The Architect staff shall include suitably qualified Assistants and other professionals who are competent to carry out these duties. The Architect Name and Address shall be provided in the **Special Conditions of Contract.**

3.1.2 The Architect shall have no authority to amend the Contract.

3.1.3 The Architect May exercise the authority attributable to the Architect as specified in or necessarily to be implied from the Contract. If the Architect is required to obtain the approval of the Procuring Entity before exercising a specified authority, the requirements shall be as stated in the S**pecial Conditions of Contract**. The Procuring Entity shall promptly inform the Contractor of any change to the authority attributed to the Engineer.

3.1.4 However, whenever the Architect exercises a specified authority for which the Procuring Entity's approval is required, then (for the purposes of the Contract) the contractor shall require the Architect to provide evidence of such approval before complying with the instruction.

3.1.5 Except as otherwise stated in these Conditions:

a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Architect shall be deemed to act for the Procuring Entity.;

b) the Architect has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract;

c) any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Architect (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances; and

d) any act by the Architect in response to a Contractor's request shall be notified in writing to the Contractor within 14 days of receipt.

3.1.6 The following provisions shall apply:

The Architect shall obtain the specific approval of the Procuring Entity before taking action under the-following Sub-Clauses of these Conditions:

a) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost.

b) Sub-Clause 13.1: instructing a Variation, except;

i) In an emergency situation as determined by the Engineer, or

ii) If such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the **Special Conditions of Contract.**

c) Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2.

d) Sub-Clause13.4: Specifying the amount payable in each of the applicable three currencies.

3.1.7 Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forth with comply, despite the absence of approval of the Procuring Entity, with any such instruction of the Engineer. The Architect shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Procuring Entity.

3.2 Delegation by the Engineer

3.2.1 The Architect may from time to time assign duties and delegate authority to assistants and may also revoke such assignment or delegation. These assistants may include a resident Engineer, and/or independent inspectors appointed to inspect and/ or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the Architect shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

3.2.2 Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:

a) Any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Architect to reject the work, Plant or Materials;

b) If the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.

3.3 Instructions of the Engineer

3.3.1 The Architect may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under Clause 3.2.1.

3.3.2 The Contractor shall comply with the instructions given by the Architect or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given

in writing. If the Architect or a delegated assistant:

a) Gives an oral instruction,

b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and

c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation,

Then the confirmation shall constitute the written instruction of the Architect or delegated assistant (as the case may be).

3.4 Replacement of the Engineer

If the Procuring Entity intends to replace the Engineer, the Procuring Entity shall, in not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the intended person to replace the Engineer.

3.5 Determinations

3.5.1 Whenever these Conditions provide that the Architect shall proceed in accordance with this Sub-Clause3.5 to agree or determine any matter, the Architect shall consult with each Party in an endeavour to reach agreement. If agreement is not achieved, the Architect shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.

3.5.1 The Architect shall give notice to both Parties of each agree mentor determination, with supporting particulars, within 30 days from the receipt of the corresponding claim or request except when otherwise specified. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [Claims, Disputes and Arbitration].

4 THE CONTRACTOR

4.1 Contractor's General Obligations

4.1.1 The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Architect instructions, ands hall remedy any defects in the Works.

4.1.2 The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

4.1.3 All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country.

4.1.4 The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works.

4.1.5 The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

4.1.6 If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Special Conditions:

a) The Contractor shall submit to the Architect the Contractor's Documents for this part in accordance with the procedures specified in the Contract;

b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Architect to add to the Drawings for co-ordination of each Party's designs;

c) the Contractor shall be responsible for this part and it shall, when the Works are completed, befit for such purposes for which the part is intended as are specified in the Contract; and

d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Architect the "as-built" documents and, if applicable, operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Procuring Entity to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.

4.2 Performance Security

4.2.1 The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the **Special Conditions of Contract** and denominated in the currency (ies) of the Contract or in a freely convertible currency acceptable to the Procuring Entity. If an amount is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

4.2.2 The Contractor shall deliver the Performance Security to the Procuring Entity within 30 days after receiving the Notification of Award and shall send a copy to the Engineer. The Performance Security shall be issued by a reputable bank selected by the Contractor and shall be in the form annexed to the Special Conditions, as stipulated by the Procuring Entity in the Special Conditions of Contract, or in another form approved by the Procuring Entity.

4.2.3 The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects. If the terms of the Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security until the Works have been completed and any defects have been remedied.

4.2.4 The Procuring Entity shall not make a claim under the Performance Security, except for amounts to which the Procuring Entity is entitled under the Contract.

4.2.5 The Procuring Entity shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Procuring Entity was not entitled to make the claim.

4.2.6 The Procuring Entity shall return the Performance Security to the Contractor within 14 days after receiving a copy of the Taking-Over Certificate.

4.2.7 Without limitation to the provisions of the rest of this Sub-Clause, whenever the Architect determines an addition or a reduction to the Contract Price as a result of a change in cost and/ or legislation, or as a result of a Variation, amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Architect request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.

4.3 Contractor's Representative

4.3.1 The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract. The Contractor's Representative's Name and Address shall be provided in the **Special Conditions of Contract.**

4.3.2 Unless the Contractor's Representative **is named in the Contract**, the Contractor shall, prior to the Commencement Date, submit to the Architect for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is withheld or subsequently revoked in terms of Sub-Clause 6.9 [Contractor's Personnel], or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of another suitable person for such appointment.

4.3.3 The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint are placement.

4.3.4 The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Architect prior consent, and the Architect shall be notified accordingly.

4.3.5 The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].

4.3.6 The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Architect has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

4.3.7 The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause1.4 [Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

4.4 Sub-contractors

4.4.1 The Contractor shall not subcontract the whole of the Works. The contractor may however subcontract the works as provided in Clause 34.2.

4.4.2 The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor. Unless otherwise stated in the Special Conditions:

a) The Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract;
b) The prior consent of the Procuring Entity shall be obtained to other proposed Subcontractors;
c) the Contractor shall give the Procuring Entity not less than 14 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site; and
d) each subcontract shall include provisions which would entitle the Procuring Entity to require the subcontract to be assigned to the Procuring Entity under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity].

4.4.3 The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.

4.4.4 Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from Kenya to be appointed as Subcontractors.

4.5 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Procuring Entity, then the Contractor shall do so. Unless

otherwise stated in the assignment, the Contractor shall have no liability to the Procuring Entity for the work carried out by the Subcontractor after the assignment takes effect.

4.6 Co-operation

4.6.1 The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

a) The Procuring Entity's Personnel,
b) Any other contractors employed by the Procuring Entity, and
c) The personnel of any legally constituted public authorities, who may be employed in the execution on or near the Site of any work not included in the Contract.

4.6.2 Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to suffer delays and/or to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.

4.6.3 If, under the Contract, the Procuring Entity is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Architect in the time and manner stated in the Specification.

4.7 Setting Out of the Works

4.7.1 The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contractor notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.

4.7.2 The Procuring Entity shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.

4.7.3 If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an error in these items of reference, and an experienced contractor could not reasonably have discovered such error and avoided this delay and/ or Cost, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such costs accrued, which shall be included in the Contract Price.

4.7.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this.

4.8 Safety Procedures

The Contractor shall:

a) Comply with all applicable safety regulations,
b) Takec are for the safety of all persons entitled to be on the Site,
c) Use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Procuring Entity's Taking Over], and
e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

4.9 Quality Assurance

4.9.1 The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Architect shall be entitled to audit any aspect of the system.

4.9.2 Details of all procedures and compliance documents shall be submitted to the Architect for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor itself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

4.10 Site Data

4.10.1 The Procuring Entity shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Procuring Entity's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Procuring Entity shall similarly make available to the Contractor all such data which come into the Procuring Entity's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.

4.10.2 To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

a) The form and nature of the Site, including sub-surface conditions,
b) the hydrological and climatic conditions,
c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
d) the Laws, procedures and labour practices of Kenya, and
e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

4.11 Sufficiency of the Accepted Contract Amount

4.11.1 The Contractor shall be deemed to:

a) Have satisfied itself as to the correctness and sufficiency of the Accepted Contract Amount, and
b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10 [Site Data].

4.11.2 Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.

4.12 Unforeseeable Physical Conditions

4.12.1 In this Sub-Clause, “physical conditions” means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.

4.12.2 If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Architect as soon as practicable.

4.12.3 This notice shall describe the physical conditions, so that they can be inspected by the Architect and shall set out the reasons why the Contractor considers them to be Unforeseeable. The

Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Architect may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

4.12.4 If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to notice under Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such Cost, which shall be included in the Contract Price.

4.12.5 Upon receiving such notice and inspecting and/or investigating these physical conditions, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

4.12.6 However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Architect may also review whether other physical conditions in similar parts of the Works (if any) were more favourable than could reasonably have been foreseen when the Contractor submitted the Tender. If and to the extent that these more favourable conditions were encountered, the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.

4.12.7 The Architect shall take account of any evidence of the physical conditions foreseen by the Contractor when submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor's interpretation of any such evidence.

4.13 Rights of Way and Facilities

Unless otherwise specified in the Contract the Procuring Entity shall provide effective access to and possession of the Site including special and/or temporary rights-of-way which are necessary for the Works. The Contractor shall obtain, at his risk and cost, any additional rights of way or facilities out side the Site which he may require for the purposes of the Works.

4.14 Avoidance of Interference

4.14.1 The Contractor shall not interfere unnecessarily or improperly with:

a) The convenience of the public, or

b) The access to and use and occupation of all roads and foot paths, irrespective of whether they are public or in the possession of the Procuring Entity or of others.

4.14.2 The Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

4.15 Access Route

4.15.1 The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site at Base Date. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.

4.15.2 Except as otherwise stated in these Conditions:

a) The Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes;

b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions;

c) the Procuring Entity shall not be responsible for any claims which may arise from the

use or otherwise of any access route;

d) the Procuring Entity does not guarantee the suitability or availability of particular access routes; and

e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.

4.16 Transport of Goods

Unless otherwise stated in the Special Conditions:

a) the Contractor shall give the Architect not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;

b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and

c) the Contractor shall indemnify and hold the Procuring Entity harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods and shall negotiate and pay all claims arising from their transport.

4.17 Contractor's Equipment

The Contractor shall be responsible for all Contractor's Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

4.18 Protection of the Environment

4.18.1 The contractor shall comply with the applicable environmental laws, regulations and policies.

4.18.2 The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

4.18.3 The Contractor shall ensure that emissions, surfaced is charges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

4.19 Electricity, Water and Gas

4.19.1 The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require for his construction activities and to the extent defined in the Specifications, for the tests.

4.19.2 The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details and prices are given in the Specifications. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.

4.19.3 The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20 Procuring Entity's Equipment and Free-Issue Materials

4.20.1 The Procuring Entity shall make the Procuring Entity's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:

a) The Procuring Entity shall be responsible for the Procuring Entity's Equipment, except that

b) the Contractor shall be responsible for each item of Procuring Entity's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.

4.20.1 The appropriate quantities and the amounts due (at such stated prices) for the use of Procuring Entity's Equipment shall be agreed or determined by the Architect in accordance with Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause3.5 [Determinations]. The Contractor shall pay these amounts to the Procuring Entity.

4.20.2 The Procuring Entity shall supply, free of charge, the "free-issue materials" (if any) in accordance with the details stated in the Specification. The Procuring Entity shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them and shall promptly give notice to the Architect of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Procuring Entity shall immediately rectify the notified shortage, defector default.

4.20.3 After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor. The Contractor's obligations of inspection, care, custody and control shall not relieve the Procuring Entity of liability for any shortage, defect or default not apparent from a visual inspection.

4.21 Progress Reports

4.21.1 Unless otherwise stated in the Special Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Architect in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.

4.21.2 Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works. Each report shall include:

a) charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),

b) photographs showing the status of manufacture and of progress on the Site;

c) for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:

   i) commencement of manufacture,

   ii) Contractor's inspections,

   iii) tests, and

   iv) shipment and arrival at the Site;

d) the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];

e) copies of quality assurance documents, test results and certificates of Materials;

f) list of notices given under Sub-Clause 2.5 [Procuring Entity's Claims] and notices given under Sub- Clause 20.1 [Contractor's Claims];

g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and

h) comparison so factual and planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

4.22 Security of the Site

Unless otherwise stated in the Special Conditions:

a) The Contractor shall be responsible for keeping unauthorized persons off the Site, and

b) authorized persons shall be limited to the Contractor's Personnel and the Procuring Entity's Personnel; and to any other personnel notified to the Contractor, by the Procuring Entity or the Engineer, as authorized personnel of the Procuring Entity's other contractors on the Site.

4.23 Contractor's Operations on Site

4.23.1 The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Architect as additional working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.

4.23.2 During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.

4.23.3 Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfil obligations under the Contract.

4.24 Fossils

4.24.1 All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Procuring Entity. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.

4.24.2 The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub- Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost, which shall be included in the Contract Price.
After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

5. NOMINATED SUBCONTRACTORS

5.1 Definition of "nominated Subcontractor"

In this Contract, "nominated Subcontractor" means a Subcontractor:

a) Who is nominated by the Procuring Entity, or
b) Contractor has nominated as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].

5.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Procuring Entity as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Procuring Entity agrees in writing to indemnify the Contractor against and from the consequences of the matter:

a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
b) the nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
c) the nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
    i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract;
    ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure

by the Subcontractor to perform these obligations or to fulfil these liabilities, and

iii) be paid only if and when the Contractor has received from the Procuring Entity payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].

5.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor's invoices approved by the Contractor which the Architect certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].

5.4 Evidence of Payments

5.4.1 Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Architect may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

(a) Submits this reasonable evidence to the Engineer, or

(b) i) Satisfies the Architect in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and

ii) Submits to the Architect reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement, then the Procuring Entity may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Procuring Entity, the amount which the nominated Subcontractor was directly paid by the Procuring Entity.

6. STAFF AND LABOR

6.1 Engagement of Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, feeding, transport, and, when appropriate, housing. The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within Kenya.

6.2 Rates of Wages and Conditions of Labor

6.2.1 The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Procuring Entity's whose trade or industry is similar to that of the Contractor.

6.2.2 The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in Kenya in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of Kenya for the time being in force, and the Contractor shall perform such duties in regard to such deductions there of as may be imposed on him by such Laws.

6.3 Persons in the Service of Procuring Entity

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Procuring Entity's Personnel.

6.4 Lab or Laws

The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, employment of children, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights. The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

6.5 Working Hours

No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the **Special Conditions of Contract**, unless:

a) Otherwise stated in the Contract,
b) The Architect gives consent, or
c) The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, provided that work done outside the normal working hours shall be considered and paid for as overtime.

6.6 Facilities for Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities on site for the Contractor's Personnel. The Contractor shall also provide facilities for the Procuring Entity's Personnel as stated in the Specifications. The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

6.7 Health and Safety

6.7.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Procuring Entity's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

6.7.2 The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

6.7.3 The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Architect may reasonably require.

6.7.4 The Contractor shall conduct an awareness programme on HIV and other sexually transmitted diseases via an approved service provider and shall undertake such other measures taken to reduce the risk of the transfer of these diseases between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.

6.8 Contractor's Superintendence

6.8.1 Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.

6.8.2 Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards

likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

6.9 Contractor's Personnel

6.9.1 The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Contractors Key personnel shall be named in the Special Conditions of Contract. The Architect may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

a) Persists in any misconduct or lack of care,

b) Carries out duties in competently or negligently,

c) fails to conform with any provisions of the Contract,

d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment, or

e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution of the Works.

6.9.2 If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

6.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

6.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

6.12 Foreign Personnel

6.12.1 The Contractor shall not employ foreign personnel unless the contractor demonstrates that there are no Kenyans with the required skills.

6.12.2 The Contractor shall be responsible for the return of any foreign personnel to the place where they were recruited or to their domicile. In the event of the death in Kenya of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.

6.13 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

6.14 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

6.15 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of Kenya, onsite, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal there of by Contractor's Personnel.

6.16 Prohibition of Forced or Compulsory Labour

The Contractor shall not employ forced labour, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.

6.17 Prohibition of Harmful Child Labor

The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of Kenya have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

6.18 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].

6.19 Workers' Organizations

The Contractor shall comply with the relevant labour laws that recognize workers' rights to form and to join workers' organizations of their choosing without interference.

6.20 Non-Discrimination and Equal Opportunity

The Contractor shall base the labour employment on the principle of equal opportunity and fair treatment and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employ mentor retirement, and discipline.

7. PLANT, MATERIALS AND WORKMANSHIP

7.1 Manner of Execution

The Contractor shall carry out the manufacture/assemble of plant, the production and manufacture of Materials, and all other execution of the Works:

a) In the manner (if any) specified in the Contract,

b) in a proper workman like and careful manner, in accordance with recognized good practice, and

c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

The Contractor shall submit the following samples of Materials, and relevant information, to the Architect for consent prior to using the Material sin or for the Works:

a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and

b) additional samples instructed by the Architect as a Variation.

Each sample shall be labelled as to origin and intended use in the Works.

7.3 Inspection

7.3.1 The Procuring Entity's Personnel shall at all reasonable times:

a) Have full access to all parts of the Site and to all places from which natural Materials are being obtained, and

b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

7.3.2 The Contractor shall give the Procuring Entity's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

7.3.3 The Contractor shall give notice to the Architect whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Architect shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Architect does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and there after reinstate and make good, all at the Contractor's cost.

7.4 Testing

7.4.1 This Sub-Clause shall apply to all tests specified in the Contract.

7.4.2 Except as otherwise specified in the Contract, the Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.

7.4.3 The Architect may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.

7.4.4 The Architect shall give the Contractor not less than 24 hours' notice of the Architect intention to attend the tests. If the Architect does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Architect presence.

7.4.5 If the Contractor suffers delay and/ or incurs Cost from complying with these instructions or as a result of a delay for which the Procuring Entity is responsible, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

7.4.6 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

7.4.7 The Contractor shall promptly forward to the Architect duly certified reports of the tests. When the specified tests have been passed, the Architect shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Architect has not attended the tests, he shall

be deemed to have accepted the readings as accurate.

7.5 Rejection

7.5.1 If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Architect may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.

7.5.2 If the Architect requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Procuring Entity to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity.

7.6 Remedial Work

7.6.1 Notwithstanding any previous test or certification, the Architect may instruct the Contractor to:

a) Remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
b) remove and re-execute any other work which is not in accordance with the Contract, and
c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseen able event or otherwise.

7.6.2 The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

7.6.3 If the Contractor fails to comply with the instruction, the Procuring Entity shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity all costs arising from this failure.

7.6.4 If the contractor repeatedly delivers defective work, the Procuring Entity may consider termination in accordance with Clause 15.

7.7 Ownership of Plant and Materials

Except as otherwise provided in the Contract, each item of Plant and Materials shall become the property of the Procuring Entity at whichever is the earlier of the following times, free from liens and other encumbrances:

a) When it is incorporated in the Works;
b) when the Contractor is paid the corresponding value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension].

7.8 Royalties

Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:

a) Natural materials obtained from outside the Site, and
b) the disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal are as within the Site are specified in the Contract.

8. COMMENCEMENT, DELAYS AND SUSPENSION

8.1 Commencement of Works

8.1.1 Except as otherwise specified in the Special Conditions of Contract, the Commencement Date shall be the date at which the following precedent condition shave all been fulfilled and the

Architect notification recording the agreement of both Parties on such fulfilment and instructing to commence the Work is received by the Contractor:

a) Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of Kenya;

b) except if otherwise specified in the Special Conditions of Contract, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works.

c) Receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor.

8.1.2 If the said Architect instruction is not received by the Contractor within 180 days from his receipt of the Letter of Acceptance, the Contractor shall be entitled to terminate the Contract under Sub-Clause1 6.2 [Termination by Contractor].

8.1.3 The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date and shall then proceed with the Works with due expedition and without delay.

8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

a) Achieving the passing of the Testson Completion, and

b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].

8.3 Programme

8.3.1 The Contractor shall submit a detailed time programme to the Architect within1 4 days after receiving the notice under Sub-Clause 8.1 [Commencement of Works]. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:

a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,

b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),

c) the sequence and timing of inspections and tests specified in the Contract, and

d) a supporting report which includes:

i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and

ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

8.3.2 Unless the Engineer, within 14 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Procuring Entity's Personnel shall be entitled to rely upon the programme when planning their activities.

8.3.3 The Contractor shall promptly give notice to the Architect of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works.

8.3.4 If, at any time, the Architect gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contractor to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Architect in accordance with this Sub-Clause.

8.4 Extension of Time for Completion

8.4.1 The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:

a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,

b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,

c) exceptionally adverse climatic conditions,

d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or

e) any delay, impediment or prevention caused by or attributable to the Procuring Entity, the Procuring Entity's Personnel, or the Procuring Entity's other contractors.

8.4.2 If the Contractor considers itself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Architect in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Architect shall review previous determinations and may increase, but shall not decrease, the total extension of time.

8.5 Delays Caused by Authorities

If the following conditions apply, namely:

a) The Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in Kenya,

b) These authorities delay or disrupt the Contractor's work, and

c) the delay or disruption was Unforeseeable, then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].

8.6 Rate of Progress

8.6.1 If, at any time:

a) Actual progress is too slow to complete within the Time for Completion, and/or

b) Progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme], other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Architect may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

8.6.2 Unless the Architect notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Procuring Entity to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity, in addition to delay damages (if any) under Sub-Clause 8.7 below.

8.6.3 Additional costs of revised methods including acceleration measures, instructed by the

Architect to reduce delays resulting from causes listed under Sub-Clause 8.4 [Extension of Time for Completion] shall be paid by the Procuring Entity, without generating, however, any other additional payment benefit to the Contractor.

8.7 Delay Damages

8.7.1 If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay delay damages to the Procuring Entity for this default. These delay damages shall be the sum stated in the **Special Conditions of Contract**, which shall be paid for everyday which shall elapse between the relevant Time for Completion and the date stated in the taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Special Conditions of Contract.

8.7.2 These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

8.8 Suspension of Work

8.8.1 The Architect may at anytime instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

8.8.2 The Architect may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.

8.9 Consequences of Suspension

8.9.1 If the Contractor suffers delay and/or incurs Cost from complying with the Architect instructions under Sub- Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) Payment of any such Cost, which shall be included in the Contract Price.

8.9.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause3.5 [Determinations] to agree or determine these matters.

8.9.3 The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/ or Materials which have not been delivered to Site, if:

a) The work on Plant or delivery of Plant and/ or Materials has been suspended for more than 30 days, and

b) the Contractor has marked the Plant and/or Materials as the Procuring Entity's property in accordance with the Architect instructions.

8.11 Prolonged Suspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Architect permission to proceed. If the Architect does not give permission within 30 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Architect shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receiving from the Architect an instruction to this effect under Clause 13 [Variations and Adjustments].

9. TESTS ON COMPLETION

9.1 Contractor's Obligations

9.1.1 The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].

9.1.2 The Contractor shall give to the Architect not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Architect shall instruct.

9.1.3 In considering the results of the Tests on Completion, the Architect shall make allowances for the effect of any use of the Works by the Procuring Entity on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.

9.2 Delayed Tests

9.2.1 If the Tests on Completion are being unduly delayed by the Procuring Entity, Sub-Clause 7.4 [Testing] (fifth paragraph) and/ or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.

9.2.2 If the Tests on Completion are being unduly delayed by the Contractor, the Architect may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

9.2.3 If the Contractor fails to carryout the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Test sat the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

9.3 Retesting of related works

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Architect or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

9.4 Failure to Pass Tests on Completion

9.4.1 If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3

[Retesting], the Architect shall be entitled to:

a) Order further repetition of Tests on Completion under Sub-Clause 9.3; or

b) if the failure deprives the Procuring Entity of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Procuring Entity shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause1 1.4 [Failure to Remedy Defects].

10. PROCURING ENTITY'S TAKING OVER

10.1 Taking Over of the Works and Sections

10.1.1 Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Procuring Entity when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

10.1.2 The Contractor may apply by notice to the Architect for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contract or may similarly apply for a Taking-Over Certificate for each Section.

10.1.3 The Architect shall, within 30 days after receiving the Contractor's application:

a) Issue the Taking-Over Certificate to the Contract or, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor out standing work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or

b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.

10.1.4 If the Architect fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 30 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.

10.2 Taking Over of Parts of the Works

10.2.1 The Architect may, at the sole discretion of the Procuring Entity, issue a Taking-Over Certificate for any part of the Permanent Works.

10.2.2 The Procuring Entity shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Architect has issued a Taking-Over Certificate for this part. However, if the Procuring Entity does use any part of the Works before the Taking-Over Certificate is issued:

a) The part which is used shall be deemed to have been taken over as from the date on which it is used,

b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Procuring Entity, and

c) if requested by the Contractor, the Architect shall issue a Taking-Over Certificate for this part.

10.2.3 After the Architect has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.

10.2.4 If the Contractor incurs Cost as a result of the Procuring Entity taking over and/or using a part of the Works, other than such use as is specified in the Contractor agreed by the Contractor, the Contractor shall (i) give notice to the Architect and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such accrued costs, which shall be included in the Contract Price. After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this accrued cost.

10.2.5 If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages there after for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages] and shall not affect the maximum amount of these damages.

10.3 Interference with Tests on Completion

10.3.1 If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Procuring Entity is responsible, the Procuring Entity shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.

10.3.2 The Architect shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Architect shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.

10.3.3 If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) payment of any such accrued costs, which shall be included in the Contract Price.

10.3.4 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

10.4 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

11. DEFECTS LIABILITY

11.1 Completion of Outstanding Work and Remedying Defects

11.1.1 In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable there after, the Contractor shall:

a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and

b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Procuring Entity on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

11.1.2 If a defect appears or damage occurs, the Contractor shall be notified accordingly by the

Engineer.

11.2 Cost of Remedying Defects

11.2.1 All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

a) Any design for which the Contractor is responsible,

b) Plant, Materials or workmanship not being in accordance with the Contract, or

c) Failure by the Contractor to comply with any other obligation.

11.2.2 If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Procuring Entity, and Sub-Clause 13.3 [Variation Procedure] shall apply.

11.3 Extension of Defects Notification Period

11.3.1 The Procuring Entity shall be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

11.3.2 If delivery and/ or erection of Plant and/ or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/ or Materials would otherwise have expired.

11.4 Failure to Remedy Defects

11.4.1 If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by the Engineer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

11.4.2 If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2[Costo f Remedying Defects], the Procuring Entity may (at his option):

(a) Carry out the work itself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity the costs reasonably incurred by the Procuring Entity in remedying the defect or damage;

(b) Require the Architect to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or

(c) if the defect or damage deprives the Procuring Entity of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contractor otherwise, the Procuring Entity shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

11.5 Removal of Defective Work

If the defector damage cannot be remedied expeditiously on the Site and the Procuring Entity gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the

amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

11.6 Further Tests

11.6.1 If the work of remedying of any defector damage may affect the performance of the Works, the Architect may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 14 days after the defect or damage is remedied.

11.6.2 These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

11.7 Right of Access

Until the Completion Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Procuring Entity's reasonable security restrictions.

11.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defect on parts of the works that have already accepted, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Architect in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

11.9 Completion Certificate

11.9.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Architect has issued the Completion Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

11.9.2 The Architect shall issue the Completion Certificate within 30days after the latest of the expiry dates of the Defects Liability Period, or as soon there after as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Completion Certificate shall be issued to the Procuring Entity.

11.9.3 Only the Completion Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Completion Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

11.11 Clearance of Site

11.11.1 Upon receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.

11.11.2 If all these items have not been removed within 30 days after receipt by the Contractor of the Completion Certificate, the Procuring Entity may sell or otherwise dispose of any remaining items. The Procuring Entity shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

11.11.3 Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Procuring Entity's costs, the Contractor shall pay the outstanding balance to the

Procuring Entity.

12. MEASUREMENT AN DEVALUATION

12.1 Works to be Measured

12.1.1 The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.

12.1.2 Whenever the Architect requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

a) promptly either attend or send another qualified representative to assist the Architect in making the measurement, and
b) supply any particulars requested by the Engineer.

12.1.3 If the Contractor fails to attend or send a representative, the measurement made by the Architect shall be accepted as accurate.

12.1.4 Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

12.1.5 If the Contractor examines and disagrees the records, and/ or does not sign them as agreed, then the Contractor shall give notice to the Architect of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Architect shall review the records and either confirm or vary them and certify the payment of the undisputed part. If the Contractor does not so give notice to the Architect within 14 days after being requested to examine the records, they shall be accepted as accurate.

12.2 Method of Measurement

Except as otherwise stated in the Contract:

a) Measurement shall be made of the net actual quantity of each item of the Permanent Works, and
b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

12.3 Evaluation

12.3.1 Except as otherwise stated in the Contract, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of work done by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

12.3.2 For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contractor, if there is no such item, specified for similar work.

12.3.3 Any item of work included in the Bill of Quantities for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.

12.3.4 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:

a) The work is instructed under Clause13 [Variations and Adjustments],
b) no rate or price is specified in the Contract for this item, and

c) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

12.3.5 Each new rate or price shall be derived from any relevant rates or prices in the Contract. If no rates or prices are relevant for the new item of work, it shall be derived from the reasonable Cost of executing such work, prevailing market rates, together with profit, taking account of any other relevant matters.

12.3.6 Until such time as an appropriate rate or price is agreed or determined, the Architect shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.3.7 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price– tender price)/ tender price X 100*.

12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

a) The Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;

b) The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and

c) this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Architect accordingly, with supporting particulars. Upon receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

13. VARIATIONS AND ADJUSTMENTS

13.1 Right to Vary

13.1.1 Variations may be initiated by the Architect at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. No Variation instructed by the Architect under this Clause shall in any way vitiate or in validate the Contract.

13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Architect stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Architect shall cancel, confirm or vary the instruction.

13.1.3 Each Variation may include:

a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),

b) changes to the quality and other characteristics of any item of work,

c) changes to the levels, positions and/ or dimensions of any part of the Works,

d) omission of any work unless it is to be carried out by others,

e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or

f) changes to the sequence or timing of the execution of the Works.

13.1.4 The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Architect instructs after obtaining approval of the Procuring Entity.

13.2. Variation Order Procedure

13.2.1 Prior to any Variation Order under Sub-Clause 13.1.4 the Architect shall notify the Contractor of the nature and form of such variation. As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

a) A description of work, if any, to be performed and a programme for its execution, and
b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 8.3 or to any of the Contractor's obligations under the Contract, and
c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Architect shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out. If the Architect decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement.

If the Architect and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 13.2.2 shall apply.

13.2.2 Disagreement on Adjustment of the Contract Price

If the Contractor and the Architecture unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Bills of Quantities or Schedule of Daywork Prices. If the rates contained in the Bills of Quantities or Dayworks Prices are not directly applicable to the specific work in question, suitable rates shall be established by the Architect reflecting the level of pricing in the Dayworks Prices. Where rates are not contained in the said Prices, the amount shall be such as is in all the circumstances reasonable, reflecting a market price. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in consequence of the variation. The Contractor shall also be entitled to be paid:

a) The cost of any partial execution of the Works rendered useless by any such variation,
b) The cost of making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,
c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and
d) the net effect of the Contractor's finance costs, including interest, caused by the variation.

The Architect shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

13.2.3 Contractor to Proceed

On receipt of a Variation Order, the Contractor shall forth with proceed to carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract. The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause31.3.

13.3 Value Engineering

13.3.1 The Contractor may, at any time, submit to the Architect written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Procuring Entity of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Procuring Entity of the completed Works, or
(iv) otherwise, be of benefit to the Procuring Entity.

13.3.2 The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

13.2.3 If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

a) The Contractor shall design this part,

b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and

c) if this change results in a reduction in the contract value of this part, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall behalf (50%) of the difference between the following amounts:

i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause
13.8 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and

ii) the reduction (if any) in the value to the Procuring Entity of the varied works, taking account of any improvement in quality, anticipated life or operational efficiencies.

13.3.4 However, if the amount established in item 13.2.3 (c) (i) is less than amount established in item 13.2.3 (c (ii), there shall not be a fee. However, if the if the amount established in item 13.2.3 (c) (i) is more than amount established in item 13.2.3 (c (ii), it shall result in a price variation to the Procuring Entity.

13.4 Variation Procedure for Value Engineering proposal

13.4.1 If the Architect requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing as soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

a) A description of the proposed work to be performed and a programme for its execution,

b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and

c) the Contractor's proposal for evaluation of the Variation.

13.4.2 The Architect shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Project Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.

13.4.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Architect to the Contractor, who shall acknowledge receipt.

13.4.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Architect instructs or approves otherwise in accordance with this Clause.

13.5 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

13.6 Provisional Sums

13.6.1 Each Provisional Sum shall only be used, in whole or in part, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Architect shall have instructed. For each Provisional Sum, the

Architect May instruct:

a) Work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or

b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:

   i) The actual amounts paid (or due to be paid) by the Contractor, and

   ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in **the Special Conditions of Contract** shall be applied.

13.6.2 The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.7 Dayworks

13.7.1 For work of a minor or incidental nature, the Architect may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

13.7.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

13.7.3 Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Architect accurate statements induplicate which shall include the following details of the resources used in executing the previous day's work:
a) The names, occupations and time of Contractor's Personnel,
b) the identification, type and time of Contractor's Equipment and Temporary Works, and
c) the quantities and types of Plant and Materials used.

13.7.4 One copy of each statement will, if correct, or when agreed, be signed by the Architect and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

13.8 Adjustments for Changes in Legislation

13.8.1 The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of Kenya (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.

13.8.2 If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost, which shall be included in the Contract Price.

13.8.3 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

13.8.4 Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

13.9 Adjustments for Changes in Cost

13.9.1 In this Sub-Clause, "table of adjustment data" means the completed table of adjustment data for local and foreign currencies included in the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.

13.9.2 If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labour, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause. To the extent that full compensation for any rise or fall in Costs is not covered by the provisions of this or other Clauses, the Accepted Contract Amount shall be deemed to have included amounts to cover the contingency of other rises and falls in costs.

13.9.3 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

Price Adjustment Formula

Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

P = A + B Im/Io

where:

P is the adjustment factor for the portion of the Contract Price payable.

A and **B** are coefficients **specified in the SCC,** representing then on adjustable and adjustable portions, respectively, of the Contract Price payable and

I m is the index prevailing at the end of the month being invoiced and **Io**c is the index prevailing 30 days before Bid opening for inputs payable.

NOTE: The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non-adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.

13.9.4 The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, it shall be determined by the Engineer. Forth is purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table) for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

13.9.5 In cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the Central Bank of Kenya, of this relevant currency on the above date for which the index is required to be applicable.

13.9.6 Until such time as each current cost index is available, the Architect shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

13.9.7 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices there after shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favourable to the Procuring Entity.

13.9.8 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or in applicable, as a result of Variations.

14. CONTRACT PRICE AND PAYMENT

14.1 The Contract Price

14.1.1 Unless otherwise stated in the Special Conditions:

a) The value of the payment certificate shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;

b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];

c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:

i) of the Works which the Contractor is required to execute, or

ii) for the purposes of Clause12 [Measurement and Evaluation]; and

d) the Contractor shall submit to the Engineer, within 30 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Architect may take account of the break down when preparing Payment Certificates but shall not be bound by it.

14.1.2 Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts there for, imported by the Contractor for the sole purpose of executing the Contract shall not be exempt from the payment of import duties and taxes upon importation.

14.2 Advance Payment

14.2.1 The Procuring Entity shall make an advance payment, as an interest-free loan for mobilization and cashflow support, when the Contractor submits a guarantee in accordance with this Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the **Special Conditions of Contract.**

14.2.2 Unless and until the Procuring Entity receives this guarantee, or if the total advance payment is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

14.2.3 The Architect shall deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate for the advance payment or its first instalment after receiving a Statement (under Sub-Clause 14.3 [Application for Interim Payment Certificates]) and after the Procuring Entity receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the advance payment. This guarantee shall be issued by a reputable bank or financial institutions elected by the Contractor and shall be in the form annexed to the Special Conditions or in another form approved by the Procuring Entity.

14.2.4 The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid, but its amount shall be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment

has been repaid.

14.2.5 Unless stated otherwise in **the Special Conditions of Contract**, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Architect in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

a) Deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and

b) deductions shall be made at the amortization rate stated in the **Special Conditions of Contract** of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.

14.2.6 If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Procuring Entity], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Procuring Entity], except for Sub-Clause 14.2.7 [Procuring Entity's Entitlement to Termination for Convenience], payable by the Contractor to the Procuring Entity.

14.3 Application for Interim Payment Certificates

14.3.1 The Contractor shall submit a Statement (in number of copies indicated in the **Special Conditions of Contract**) to the Architect after the end of each month, in form approved by the Engineer, showing in detail the amounts to which the Contractor considers itself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause4.21 [Progress Reports].

14.3.2 The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

a) the estimated contract value of the Works executed, and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);

b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];

c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in **the Special Conditions of Contract** to the total of the above amounts, until the amount so retained by the Procuring Entity reaches the limit of Retention Money (if any) stated **in the Special Conditions of Contract**;

d) any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];

e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];

f) any other additions or deductions which may have become due under the Contractor otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and

g) the deduction of amounts certified in all previous Payment Certificates.

14.4 Schedule of Payments

14.4.1 If the Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

a) The instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];

b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and

c) If these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.

14.4.2 If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

14.5 Plant and Materials intended for the Works

14.5.1 If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

14.5.2 If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules, this Sub-Clause shall not apply.

14.5.3 The Architect shall determine and certify each addition if the following conditions are satisfied:

a) The Contractor has:
   i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and
   (ii) submitted statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

   and either:

b) the relevant Plant and Materials:
   i) are those listed in the Schedules for payment when shipped,
   ii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and
   iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Architect together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Procuring Entity in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or

c) the relevant Plant and Materials:
   i) are those listed in the Schedules for payment when delivered to the Site, and
   ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration and appear to be in accordance with the Contract.

14.5.4 The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Architect determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

14.5.5 The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

14.6.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Architect shall, within 30 days after receiving a

Statement and supporting documents, deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate which shall state the amount which the Architect fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Architect on the Statement if any.

14.6.2 However, prior to issuing the Taking-Over Certificate for the Works, the Architect shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated **in the Special Conditions of Contract**. In this event, the Architect shall give notice to the Contractor accordingly.

14.6.3 An Interim Payment Certificate shall not be withheld for any other reason, although:

a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or

b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

4.6.4 The Architect may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Architect acceptance, approval, consent or satisfaction.

14.7 Payment

14.7.1 The Procuring Entity shall pay to the Contractor:

a) The advance payment shall be paid within 60 days after signing of the contract by both parties or within 60 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub- Clause 14.2 [Advance Payment], whichever is later;

b) The amount certified in each Interim Payment Certificate within 60 days after the Architect Issues Interim Payment Certificate; and

c) the amount certified in the Final Payment Certificate within 60 days after the Procuring Entity Issues Interim Payment Certificate; or after determination of any disputed amount shown in the Final Statement in accordance with Sub-Clause 16.2 [Termination by Contractor].

14.7.2 Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (forth is currency) specified in the Contract.

14.8 Delayed Payment

14.8.1 If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges (simple interest) monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b) of the date on which any Interim Payment Certificate is issued.

14.8.2 These financing charges shall be calculated at the annual rate of three percentage points above the mean rate of the Central Bank in Kenya of the currency of payment, or if not available, the inter bank offered rate, and shall be paid in such currency.

14.8.3 The Contractor shall be entitled to this payment without formal notice and certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

14.9.1 When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

14.9.2 Promptly after the latest of the expiry dates of the Defects Liability Periods, the outstanding balance of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated

final Contract Price.

14.9.3 However, if any work remains to be executed under Clause 11 [Defects Liability], the Architects hall be entitled to withhold certification of the estimated cost of this work until it has been executed.

14.9.4 When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause13.8 [Adjustments for Changes in Cost].

14.9.5 Unless otherwise stated in the Special Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a Retention Money Security guarantee, in the form annexed to the Special Conditions or in another form approved by the Procuring Entity and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money.

14.9.6 The Procuring Entity shall return the Retention Money Security guarantee to the Contractor within 14 days after receiving a copy of the Completion Certificate.

14.10 Statement at Completion

14.10.1 Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Architect three copies of a Statement at completion with supporting documents, in accordance with Sub- Clause 14.3 [Application for Interim Payment Certificates], showing:

a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
b) any further sums which the Contractor considers to be due, and
c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

14.10.2 The Architect shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

14.11 Application for Final Payment Certificate

14.11.1 Within 60 days after receiving the Completion Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

a) The value of all work done in accordance with the Contract, and
b) Any further sums which the Contractor considers to be due to him under the Contractor otherwise.

14.11.2 If the Architect disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Architect may reasonably require within 30 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Architect the final statement as agreed. This agreed statement is referred to in these Conditions as the “Final Statement”.

14.11.3 However, if, following discussions between the Architect and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Architect shall deliver to the Procuring Entity (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Procuring Entity (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the out standing balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

14.13.1 Within 30days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall deliver to the Procuring Entity and to the Contractor, the Final Payment Certificate which shall state:

a) The amount which he fairly determines is finally due, and
b) After giving credit to the Procuring Entity for all amounts previously paid by the Procuring Entity and for all sums to which the Procuring Entity is entitled, the balance (if any) due from the Procuring Entity to the Contractor or from the Contractor to the Procuring Entity, as the case may be.

14.13.2 If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 30 days, the Architect shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Procuring Entity's Liability

14.14.1 The Procuring Entity shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

a) in the Final Statement and also,
b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

14.14.2 However, this Sub-Clause shall not limit the Procuring Entity's liability under his indemnification obligations, or the Procuring Entity's liability in any case of fraud, deliberate default or reckless misconduct by the Procuring Entity.

14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

a) If the Accepted Contract Amount was expressed in Local Currency only:
   i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
   ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
   iii) other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub- paragraph (a) (i) above;
b) payment of the damages specified in the Special Conditions of Contract, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
c) other payments to the Procuring Entity by the Contractor shall be made in the currency in which the sum was expended by the Procuring Entity, or in such currency as may be agreed by both Parties;
d) if any amount payable by the Contractor to the Procuring Entity in a particular currency exceeds the sum payable by the Procuring Entity to the Contractor in that currency, the Procuring Entity may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and
e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the Central Bank of Kenya.

15. TERMINATION BY PROCURING ENTITY

15.1 Notice to correct any defects or failures

If the Contractor fails to carry out any obligation under the Contract, the Architect may by notice require the Contractor to make good the failure and to remedy it within 30 days.

15.2 Termination by Procuring Entity

15.2.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor breaches the contract based on following circumstances which shall include but not limited to:

a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],

b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,

c) without reasonable excuse fails:

i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or

ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 30 days after receiving it,

d) subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,

e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or

f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an induce mentor reward:

i) for doing or for bearing to do any action in relation to the Contract, or

ii) for showing or for bearing to show favour or disfavour to any person in relation to the Contract, or

iii) if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such induce mentor reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination, or

g) If the contract or repeatedly fails to remedy delivers defective work,

h) based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Appendix B to these General Conditions, in competing for or in executing the Contract.

15.2.2 In any of these events or circumstances, the Procuring Entity may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub- paragraph (e) or (f) or (g) or (h), the Procuring Entity may by notice terminate the Contract immediately.

15.2.3 The Procuring Entity's election to terminate the Contract shall not prejudice any other rights of the Procuring Entity, under the Contractor otherwise.

15.2.4 The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

15.2.5 After termination, the Procuring Entity may complete the Works and/ or arrange for any other entities to do so. The Procuring Entity and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

15.2.6 The Procuring Entity shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Procuring Entity, these items may be sold by the Procuring Entity in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

15.3 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.

15.4 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Procuring Entity may:

a) Proceed in accordance with Sub-Clause 2.5 [Procuring Entity's Claims],
b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Procuring Entity, have been established, and/ or

c) recover from the Contractor any losses and damages incurred by the Procuring Entity and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Procuring Entity shall pay any balance to the Contractor.

15.5 Procuring Entity's Entitlement to Termination for Convenience

The Procuring Entity shall be entitled to terminate the Contract, at any time at the Procuring Entity's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 30 days after the later of the dates on which the Contractor receives this notice or the Procuring Entity returns the Performance Security. The Procuring Entity shall not terminate the Contract under this Sub-Clause in order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor]. After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

15.6 Fraud and Corruption

The Contractor shall ensure compliance with the Kenya Government's Anti-Corruption Laws and its prevailing sanctions.

15.7 Corrupt gifts and payments of commission

15.7.1 The Contractor shall not;

a) Offer or give or agree to give to any person in the service of the Procuring Entity any gift or consideration of any kind as an inducement or reward for doing or for bearing to door for having done or for borne to do any act in relation to the obtaining or execution of this or any other Contract for the Procuring Entity or for showing or for bearing to show favour or disfavour to any person in relation to this or any other contract for the Procuring Entity.
b) Enter into this or any other contract with the Procuring Entity 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 there of have been disclosed in writing to the Procuring Entity.

15.7.2 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 and Asset Disposal Act (2015) and the Anti-Corruption and Economic Crimes Act (2003) of the Laws of Kenya.

16. SUSPENSION AND TERMINATION BY CONTRACTOR

16.1 Contractor's Entitlement to Suspend Work

16.1.1 If the Architect fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or Sub-Clause 14.7 [Payment],or not receiving instructions that would enable the contractor to proceed with the works in accordance with the program, the Contractor may, after giving not less than 30 days' notice to the Procuring Entity, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.

16.1.2 The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Termination by Contractor].

16.1.3 If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

16.1.4 If the Contractor suffers delay and/or incurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
b) payment of any such Cost-plus profit, which shall be included in the Contract Price.

16.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

16.3 Termination by Contractor

16.3.1 The Contractor shall be entitled to terminate the Contract if:

a) the Architect fails, within 60 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,
b) the Contractor does not receive the amount due under an Interim Payment Certificate within 90 days after the expiry of the time stated in Sub-Clause1 4.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Procuring Entity's Claims]),
c) the Procuring Entity substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract,
d) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or
e) the Procuring Entity becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.

f) the Contractor does not receive the Architect instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

16.3.2 In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Procuring Entity, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

16.3.3 The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contractor otherwise.

16.4 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clause 15.5 [Procuring Entity's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

a) cease all further work, except for such work as may have been instructed by the Architect for the protection of life or property or for the safety of the Works,
b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and
c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.

16.5 Payment on Termination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Procuring Entity shall promptly:

a) Return the Performance Security to the Contractor,
b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and
c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. RISK AND RESPONSIBILITY

17.1 Indemnities

17.1.1 The Contractor shall indemnify and hold harmless the Procuring Entity, the Procuring Entity's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

a) Bodily injury, sickness, disease or death, of any person what so ever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, wilful actor breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and
b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, wilful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.1.2 The Procuring Entity shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their respective agents, and (2)

the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property], unless and to the extent that any such damage or loss is attributable to any negligence, wilful actor breach of the Contract by the contractor, the contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.2 Contractor's Care of the Works

17.2.1 The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Procuring Entity. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Procuring Entity.

17.2.2 After responsibility has accordingly passed to the Procuring Entity, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

17.2.3 If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

17.2.4 The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Procuring Entity's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Procuring Entity's Risks] below, in so far as they directly affect the execution of the Works in Kenya, are:

a) War hostilities (whether war be declared or not),
b) rebellion, riot, commotion or disorder, terrorism, sabotage by persons other than the Contractor's Personnel,
c) explosive materials, ionizing radiation or contamination by radioactivity, except as may be attributable to the Contractor's use of such explosives, radiation or radioactivity,
d) pressure waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds,
e) use or occupation by the Procuring Entity of any part of the Permanent Works, except as may be specified in the Contract,
f) design of any part of the Works by the Procuring Entity's Personnel or by others for whom the Procuring Entity is responsible, and
g) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

17.4 Consequences of Procuring Entity's Risks

17.4.1 If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Architect and shall rectify this loss or damage to the extent required by the Engineer.

17.4.2 If the Contractor suffers delay and/ or incurs Cost from rectifying this loss or damage, the

Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

(a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

(b) Payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (e)and
(g) of Sub-Clause 17.3 [Procuring Entity's Risks], Accrued Costs shall be payable.

17.4.3 After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

17.5 Intellectual and Industrial Property Rights

17.5.1 In this Sub-Clause, "infringement" shall refer to an infringement (or alleged infringement) of any patent, registered design, copyright, trademark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" shall refer to a claim (or proceedings pursuing a claim) alleging an infringement.

17.5.2 Whenever a Party does not give notice to the other Party of any claim within 30 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

17.5.3 The Procuring Entity shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

a) An unavoidable result of the Contractor's compliance with the Contract, or
b) A result of any Works being used by the Procuring Entity:
    i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
    ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

17.5.4 The Contractor shall indemnify and hold the Procuring Entity harmless again stand from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

17.5.5 If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

17.5.6 For operation and maintenance of any plant or equipment installed, the contractor shall grant a non-exclusive and non-transferable license to the Procuring Entity under the patent, utility models ,or other intellectual rights owned by the contractor or a third party from whom the contract or has received the rights to grant sub-licenses and shall also grant to the Procuring Entity a non-exclusive and non-transferable rights (without the rights to sub-license) to use the know-how and other technical information disclosed to the contract or under the contract. Nothing contained here-in shall be construed as transferring ownership of any patent, utility model, trademark, design, copy right, know-how or other intellectual rights from the contractor or any other third party to the Procuring Entity.

17.6 Limitation of Liability

17.6.1 Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contractor for any in director consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-

Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Procuring Entity's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

17.6.2 The total liability of the Contractor to the Procuring Entity, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Procuring Entity's Equipment and Free- Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in **the Special Conditions of Contract**, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.

17.6.3 This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

17.7 Use of Procuring Entity's Accommodation/Facilities

17.7.1 The Contractor shall take full responsibility for the care of the Procuring Entity provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

17.7.2 If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Procuring Entity is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

18. INSURANCE

18.1 General Requirements for Insurances

18.1.1 In this Clause, "insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

18.1.2 Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Procuring Entity. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.3 Wherever the Procuring Entity is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.4 If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Procuring Entity shall act for Procuring Entity's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

18.1.5 Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

18.1.6 The relevant insuring Party shall, within the respective periods stated in **the Special Conditions of Contract** (calculated from the Commencement Date), submit to the other

Party:

a) Evidence that the insurances described in this Clause have been affected, and
b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].

18.1.7 When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

18.1.8 Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

18.1.9 Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or at tempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

18.1.10 If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contractor fails to provide satisfactory evidence and copies of policies in accordance with this Sub- Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

18.1.11 Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Procuring Entity, under the other terms of the Contractor otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Procuring Entity.

18.1.12 Procuring Entity in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

18.1.13 Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Procuring Entity's Claims] or Sub- Clause 20.1 [Contractor's Claims], as applicable.

18.1.14 The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

18.2 Insurance for Works and Contractor's Equipment

18.2.1 The insuring Party shall insure the Works, Plant, Material sand Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

18.2.2 The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

18.2.3 The insuring Party shall insure the Contractor's Equipment for not less than the full

replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

18.2.4 Unless otherwise stated in the Special Conditions, insurances under this Sub-Clause:

a) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,

c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],

d) shall also cover, to the extent specifically required in the tendering documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Procuring Entity of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h)of Sub-Clause 17.3 [Procuring Entity's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated **in the Special Conditions** of Contract (if an amount is not so stated,t his sub-paragraph (d) shall not apply), and

e) may however exclude loss of, damage to, and reinstatement of:

i) a part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),

ii) apart of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,

iii) apart of the Works which has been taken over by the Procuring Entity, except to the extent that the Contractor is liable for the loss or damage, and

iv) Goods while they are not in Kenya, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

18.2.5 If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Procuring Entity, with supporting particulars. The Procuring Entity shall then (i) be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

18.3 Insurance against Injury to Persons and Damage to Property

18.3.1 The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

18.3.2 This insurance shall be for a limit per occurrence of not less than the amount stated in **the Special Conditions of Contract**, with no limit on the number of occurrences. If an amount is not stated in the **Special Conditions of Contract**, this Sub-Clause shall not apply.

18.3.3 Unless otherwise stated in the Special Conditions, the insurances specified in this Sub-Clause:

a) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties,

c) shall be extended to cover liability for all loss and damage to the Procuring Entity's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and

d) may however exclude liability to the extent that it arises from:

i) the Procuring Entity's right to have the Permanent Works executed on, over, under, in or

ii) through any land, and to occupy this land for the Permanent Works,

iii) damage which is an unavoidable result of the Contractor's obligations to execute the

iv) Works and remedy any defects, and

v) a cause listed in Sub-Clause 17.3 [Procuring Entity's Risks], except to the extent that cover is available at commercially reasonable terms.

18.4 Insurance for Contractor's Personnel

18.4.1 The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

18.4.2 The insurance shall cover the Procuring Entity and the Architect against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Procuring Entity or of the Procuring Entity's Personnel.

18.4.3 The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19. FORCE MAJEURE

19.1 Definition of Force Majeure

19.1.1 In this Clause, “Force Majeure” means an exceptional event or circumstance:

a) Which is beyond a Party's control,

b) Which such Party could not reasonably have provided against before entering into the Contract,

c) which, having arisen, such Party could not reasonably have avoided or overcome, and

d) which is not substantially attributable to the other Party.

19.1.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,

b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,

c) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel,

d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as maybe attributable to the Contractor’s use of such munitions, explosives, radiation or radio-activity, and

e) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure

19.2.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware,

or should have become aware, of the relevant event or circumstance constituting Force Majeure.

19.2.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

19.2.3 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

19.3 Duty to Minimize Delay

Each Party shall at all times use all reasonable endeavours to minimize any delay in the performance of the Contract as a result of Force Majeure. A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

19.4 Consequences of Force Majeure

19.4.1 If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/ or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) to (iv), occurs in Kenya, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub- Clause18.2 [Insurance for Works and Contractor's Equipment].

19.4.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

19.5 Force Majeure Affecting Subcontractor

If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

19.6 Optional Termination, Payment and Release

19.6.1 If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

19.6.2 Upon such termination, the Architect shall determine the value of the work done and issue a Payment Certificate which shall include:

a) The amounts payable for any work carried out for which a price is stated in the Contract;

b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity’s disposal;

c) other Cost or liabilities which in the circumstances were reasonably and necessarily

incurred by the Contractor in the expectation of completing the Works;

d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and

e) the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

19.7 Release from Performance

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:

a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and

b) The sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

20. SETTLEMENT OF CLAIMS AND DISPUTES

20.1 Contractor's Claims

20.1.1 If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.

20.1.2 If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

20.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

20.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Procuring Entity's liability, the Architect may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/ or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Architect to inspect all these records and shall (if instructed) submit copies to the Engineer.

20.1.5 Within 42days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Architect fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/ or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

a) This fully detailed claim shall be considered as interim.

b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/ or amount claimed, and such further particulars as the Architect may reasonably require; and

c) The Contractor shall send a final claim within 30 days after the end of the effects resulting

from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

20.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Architect and approved by the Contractor, the Architect shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars but shall nevertheless give his response on the principles of the claim within the above defined time period.

20.1.7 Within the above defined period of 42 days, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

20.1.8 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

20.1.9 If the Architect does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Architect and any of the Parties may refer the dispute for amicable settlement in accordance with Clause 20.3.

20.1.10 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/ or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 20.3.

20.2 Procuring Entity's Claims

20.2.1 If the Procuring Entity considers itself to be entitled to any payment under any Clause of these Conditionsor otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Procuring Entity or the Architect shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Procuring Entity's Equipment and Free-Issue Materials], or for other services requested by the Contractor.

20.2.2 The notice shall be given as soon as practicable and no longer than 30 days after the Procuring Entity became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

20.2.3 The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount and/or extension to which the Procuring Entity considers itself to be entitled in connection with the Contract. The Architect shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Procuring Entity is entitled to be paid by the Contractor, and/ or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].

20.2.4 This amount may be included as a deduction in the Contract Price and Payment Certificates. The Procuring Entity shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

20.3 Amicable Settlement

Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 20.1 above should move to commence arbitration after 60 days from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

20.4 Matters that may be referred to arbitration

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:

a) Whether or not the issue of an instruction by the Architect is empowered by these Conditions.
b) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
c) Any dispute arising in respect risks arising from matters referred to in Clause 17.3 and Clause 19.
e) 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 Procuring Entity and the Contractor agree otherwise in writing.

20.5 Arbitration

20.5.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.3 shall be finally settled by arbitration.

20.5.2 No arbitration proceedings shall be commenced on any claim or dispute where notice of a claim or dispute 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.

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

20.5.4 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 a ward any sums which ought to have been the subject of or included in any certificate.

20.5.5 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 require mentor notice had been given.

20.5.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Architect from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

20.5.7 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

20.5.7 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Architect shall not be altered by reason of any arbitration being conducted during the progress of the Works.

20.5.8 The terms of the remuneration of each or all the members of Arbitration shall be mutually

agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

20.6 Arbitration with National Contractors

20.6.1 If the Contract is with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws of Kenya. In case of any claim or dispute, such claim or 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, on the request of the applying party, 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

20.6.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

20.7 Arbitration with Foreign Contractors

20.7.1 Arbitration with foreign contractors shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.

20.7.2 The place of arbitration shall be a location specified in the **SCC;** and the arbitration shall be conducted in the language for communications defined in Sub-Clause1.4 [Law and Language].

20.8 Alternative Arbitration Proceedings

Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

20.9 Failure to Comply with Arbitrator's Decision

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 In the even that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

20.10 Contract operations to continue

Notwithstanding any reference to arbitration herein,

1.1.1 the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

1.1.2 the Procuring Entity shall pay the Contractor any monies due the Contractor.

Section V - Special Conditions of Contract

The following Special Conditions shall supplement the GCC. Whenever there is a conflict, the provisions here in shall prevail over those in the GCC.

Conditions	**Sub-Clause**	**Data**
Part A - Contract Data		
Procuring Entity's name and address	Heading	*Masinde Muliro University of Science and Technology*
Name and Reference No. of the Contract	Heading and 1.1	*MMUST/EST/007/2024-2025*
Engineers Name and address	Heading and 3.1.1	*N/A*
Contractor's Representative's name	4.3.1	*[insert the name of the Contractor's Representative agreed by the Procuring Entity prior to Contract signature]*
Key Personnel names	16.9.1	*[insert the name of each Key Personnel agreed by the Procuring Entity prior to Contract signature]*
Time for Completion	1.1.	32 weeks *If Sections are to be used, refer to Table: Summary of Sections below*
Defects Notification Period	1.1	_____days
Sections	1.1	*If Sections are to be used, refer to Table: Summary of Sections below*
Electronic transmission systems	1.3	
Time for the Parties entering into a Contract Agreement	1.6	Within 30days
Commencement Date	8.1.1	
Time for access to the Site	2.1.1	No later than the Commencement Date, and not later than _____days after Commencement Date
Architect Duties and Authority	3.1.6 (b) (ii)	Variations resulting in an increase of the Accepted Contract Amount in excess of____% shall require approval of the Procuring Entity.
Performance Security	4.2.1	The performance security will be in the form of a performance bond in the amount(s) of **Kshs 1,500,000 (shillings one million, five hundred thousand**).
Normal working hours	6.5	Specify
Delay damages for the Works	8.7 & 14.15(b)	_____ % of the Contract Price per day. *If Sections are to be used, refer to Table: Summary of Sections below*
Maximum amount of delay damages	8.7.1	_____% of the final Contract Price.
Provisional Sums	13.6. (b)(ii)	*[If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]* _____%
Adjustments for Changes in Cost	13.9	Period "n" applicable to the adjustment multiplier "Pn": _____ *[Insert the period if different from one (1) month; if period "n" is one (1) month, insert "not applicable"]*

Conditions	Sub-Clause	Data
Total advance payment	14.2.1	__0__% Percentage of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable *[Insert number and timing of instalments if applicable]*
Repayment amortization rate of advance payment	14.2.5 (b)	_____%
Percentage of Retention	14.3.2 (c)	10 %
Limit of Retention Money	14.3.2 (c)	5 % of the Accepted Contract Amount
Plant and Materials	14.5.3(b)(i)	If Sub-Clause 14.5 applies: Plant and Materials for payment Free on Board _____ *[list]*.
	14.5.3(c)(i)	Plant and Materials for payment when delivered to the Site _____ *[list]*.
Minimum Amount of Interim Payment Certificates	14.6.2	_____ % of the Accepted Contract Amount.
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	Specify _____% rate per month of delayed payment.
Maximum total liability of the Contractor to the Procuring Entity	17.6.2	*[Select one of the two options below as appropriate]* The product of_____ *[insert a multiplier less or greater than one]* times the Accepted Contract Amount, *or* _____ *[insert amount of the maximum total liability]*
Periods for submission of insurance: a. evidence of insurance. b. relevant policies	18.1.6	*[Insert period for submission of evidence of insurance and policy. Period may be from 14 days to 30days.]* _____days _____days
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	*[Insert maximum amount of deductibles]*
Minimum amount of third-party insurance	18.3.2	*[Insert amount of third-party insurance]*
The place of arbitration	20.7.2	*Insert city and Country*

SECTION VI - CONTRACT FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM NO. 2 - REQUEST FOR REVIEW

FORM No. 3 - LETTER OF AWARD

FORM No. 4 - CONTRACT AGREEMENT

FORM No. 5 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 6 - PERFORMANCE SECURITY [Option 2– Performance Bond]

FORM No. 7 - ADVANCE PAYMENT SECURITY

FORM No. 8 - RETENTION MONEY SECURITY

FORM No 1: NOTIFICATION OF INTENTION TO AWARD OF CONTRACT

This Notification of Award shall be sent to each Tenderer that submitted a Tender and was not successful. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative

   i) Name: *[insert Authorized Representative's name]*

   ii) Address: *[insert Authorized Representative's Address]*

   iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*

   iv) Email Address: *[insert Authorized Representative's email address]*

   [IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: [*email*] on [*date*] (local time)

   This Notification is sent by (*Name and designation*)

   _____

3. Notification of Award

   i) Procuring Entity: *[insert the name of the Procuring Entity]*

   ii) Project: *[insert name of project]*

   iii) Contract title: *[insert the name of the contract]*

   iv) ITT No: *[insert ITT reference number from Procurement Plan]*

   This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender by submitting a Procurement-related Complaint in relation to the decision to award the contracts.

   a) The successful tenderers

   i) Name of successful Tender

   ii) Address of the successful Tender

   _____

   iii) Contract price of the successful Tender Kenya Shillings (in words)

   b) The reasons for your tender being unsuccessful are as follows:

   c) Other Tenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

a) DEADLINE: The deadline to request a debriefing expires at midnight on [*insert date*] (*local time*).

b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.

c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
   i) Attention: [*insert full name of person, if applicable*]
   ii) Title/position: [*insert title/position*]
   iii) Agency: [*insert name of Procuring Entity*]
   iv) Email address: [*insert email address*]

d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint

a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:
   i) Attention: [*insert full name of person, if applicable*]
   ii) Title/position: [*insert title/ position*]
   iii) Agency: [*insert name of Procuring Entity*]
   iv) Email address: [*insert email address*]

c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or

received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website www.ppra.go.ke.

You should read these documents before preparing and submitting your complaint.

e) There are four essential requirements:
   i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process and is the recipient of a Notification of Intention to Award.
   ii) The complaint can only challenge the decision to award the contract.
   iii) You must submit the complaint within the period stated above.
   iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature _____

Name _____

Title/Position _____

Telephone _____

FORM NO. 2- REQUEST FOR REVIEW

FORM FOR REVIEW (r.203(1))

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….. for ..... (Tender description).

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….P. O. Box 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.

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

1.

2.

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

FORM NO 3: LETTER OF AWARD

letterhead paper of the Procuring Entity]

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is here by accepted by…… *(name of Procuring Entity).*

You are requested to furnish the Performance Security within in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Procuring Entity: .....

Attachment: *Contract Agreement:* .....

FORM NO 4: CONTRACT AGREEMENT

THIS AGREEMENT made the day of……. 20……., between……. ……...of……. (hereinafter "the Procuring Entity"), of the one part, and_____of_____ (hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Works known as

_____

should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects there in,

The Procuring Entity and the Contractor agree as follows:

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

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

    a) The Notification of Award
    b) the Form of Tender
    c) the addenda Nos_____(if any)
    d) the Special Conditions of Contract
    e) the General Conditions of Contract;
    f) the Specifications
    g) the Drawings*;* and
    h) the completed Schedules and any other documents forming part of the contract.

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor here by covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Entity here by covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects there in, 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 where of the parties here to have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

Signed and sealed by_____(for the Procuring Entity)

Signed and sealed by_____(for the Contractor).

FORM NO. 5 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: *[insert name and Address of Procuring Entity]*

Date: _____*[Insert date of issue]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____ _____(hereinafter called "the Contractor") has entered into Contract No._____dated_____with (*name of Procuring Entity*)_____(the Procuring Entity as the Beneficiary), for the execution of _____(hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. At the request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_(*in words*),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand it self or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

4. This guarantee shall expire, no later than the……...Day of……,2...…, and any demand for payment under it must be received by us at the office indicated above on or before that date.

5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee." .....

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

[1]*The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2]*Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM No. 6- PERFORMANCE SECURITY

[Option 2– Performance Bond]

*[**Note:** Procuring Entities a readvised to use Performance Security – Unconditional demand Bank Guarantee in stead of Performance Bond due to difficulties involved in calling Bond holder to action]*
[Guarantor letterhead or SWIFT identifier

code] **Beneficiary:** *[insert name and*

Address of Procuring Entity*]*

Date: _____*[Insert date of*

issue] **PERFORMANCE BOND No.:**_____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond_____ as Principal (hereinafter called "the Contractor") and_____] as Surety (hereinafter called "the Surety"),are held and firmly bound unto_____] as Obligee (hereinafter called "the Procuring Entity") in the amount of_____for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the_____day of_____,20_____, for_____in accordance with the documents, plans, specifications, and amendments there to, which to the extent here in provided for, are by reference made part here of and are here in after referred to as the Contract.
3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:

    a) Complete the Contract in accordance with its terms and conditions; or

    b) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or

    c) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly at tested by the signature of his legal representative, this day _____of_____20_____.

SIGNED ON_____on behalf of_____

By_____in the capacity of_____

In the presence of_____

SIGNED ON_____on behalf of_____

By_____in the capacity of_____

In the presence of_____

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]
[Guarantor letterhead]

Beneficiary: *[Insert name and Address of*
Procuring Entity*]* **Date:** *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that (hereinafter called "the Contractor") has entered into Contract No. *dated* with the Beneficiary, for the execution of (hereinafter called" the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum (*in words*) is to be made against an advance payment guarantee.

3. At the request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of (*in words*)[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
   a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) Has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number at .

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the day of ,2 ,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

---

[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance payment as specified in the Contract.*

[2] *Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request*

must be in writing and must be made prior to the expiration date established in the guarantee.

FORM NO. 8 – RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of* Procuring Entity*]*

Date: _____ *[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____ *[insert reference number of the contract]* dated _____ with the Beneficiary, for the execution of _____ *[insert name of contract and brief description of* Works*]* (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[*insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* (*[insert amount in words* _____ *])*[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or showgrounds for your demand or the sum specified there in.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number at _____ *[insert name and address of Applicant's bank]*.

5. This guarantee shall expire no later than the.....Day of.....2.....[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

_____

[Name of Authorized Official, signature(s) and seals/stamps]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

[1] *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.*

[2] *Insert a date that is twenty-eight days after the expiry of retention period after the actual completion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the Tenderer by meeting one or more of the following conditions:

- *Directly or indirectly holding 25% or more of the shares.*
- *Directly or in directly holding 25% or more of the voting rights.*
- *Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

Tender Reference No.:_____[*insert identification no*] Name of the Assignment:_____*[insert name of the assignment]* to:_____*[insert complete name of Procuring Entity]*

In response to your notification of award dated_____*[insert date of notification of award]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	**Directly or indirectly holding 25% or more of the shares (Yes / No)**	**Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)**	**Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer (Yes / No)**
[include full name (last, middle, first), nationality, country of residence]			

OR

ii) We declare that there is no Beneficial Owner meeting one or more of the following conditions: directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights. Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.

OR

We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Tenderer shall provide explanation on why it is unable to identify any Beneficial Owner]

Directly or indirectly holding 25% or more of the shares. Directly or indirectly holding25% or more of the voting rights.

Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer]"

Name of the Tenderer: .....[insert complete name of the Tenderer]*_____

*Name of the person duly authorized to sign the Tender on behalf of the Tenderer: ** [insert complete name of person duly authorized to sign the Tender]*

Title of the person signing the Tender: ..... [insert complete title of the person signing the Tender]

Signature of the person named above: ..... [insert signature of person whose name and capacity are shown above]

Date signed ..... [insert date of signing] day of..... [Insert month], [insert year]

PART III - WORKS REQUIREMENTS

SECTION VII - SPECIFICATIONS

Notes for preparing Specifications

1. 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 Procuring Entity and ensure responsiveness of tenders. The Specifications should require that all materials, plant, and other supplies to be permanently incorporated in the Works be new, unused, of the most recent or current models, and incorporating all recent improvements in design and materials unless provided otherwise in the Contract. Where the Contractor is responsible for the design of any part of the permanent Works, the extent of his obligations must be stated.

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

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

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

5. The Procuring Entity 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.

6. The Procuring Entity 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.

7. Such alternative solutions shall be accompanied by all information necessary for a complete evaluation by the Procuring Entity, 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 Procuring Entity each on its own merits and independently of whether the tenderer has priced the item as described in the Procuring Entity's design included with the tender documents.

ELECTRICAL WORKS

Note: 1. The rates and prices shall be Inclusive of VAT at 16%.

ELECTRICAL WORKS SPECIFICATIONS

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SPECIFICATIONS FOR ELECTRICAL SERVICES INSTALLATIONS

PART A

ELECTRICAL ENGINEERING SERVICES

GENERAL SPECIFICATION

SECTION 1- ELECTRICAL WORKS GENERAL SPECIFICATIONS

General

This section specified the general requirements for plant, equipment and materials forming part of the Electrical Sub-Contract Works and shall apply except where otherwise specified. The Sub-Contract Works shall comply with the General Specification when read in conjunction with the Particular Specification and any other requirements of the Specification as previously defined.

Regulation and Standards

The Sub-Contract Works shall comply with the current Kenya Government Electrical Regulations, the current edition of the Institution of Electrical Engineers Regulations for the Electrical Equipment of Buildings, hereinafter referred to as the I.E.E. Regulations, and the Bye-Laws of the Electricity Supply Authority. The Sub-Contract Works shall also comply where applicable to Kenya Standards as published by Kenya Bureau of Standards or current edition IEC (International Electro Technical Commission) and British Standards Codes of Practice where Kenya Standards have not been published.

Quality of Materials and Manufacturing Standards

Materials and apparatus required for the complete installation as called for in the Particular Specification or Contract Drawings shall be supplied by the Sub-Contractor unless special mention is made otherwise.
Materials or apparatus supplied by others for installation or connection by the Sub-Contractor shall be carefully examined on receipt. Should any defects be noted the Sub-Contractor shall immediately notify the Engineer.

Unless otherwise specified all materials, including equipment, fittings, cables, etc., shall be in new condition and manufactured to appropriate standards of the Kenya Bureau of Standards, the British Standards Institution, the I.E.E. Regulations or other equivalent and approved standards.

Defective equipment or that damaged in course of installation or test shall be replaced or repaired to the approval of the Engineer.

Materials and apparatus supplied by the Sub-Contractor shall be as specified and no variations will be permitted without the written consent of the Engineer. Should any replacement be necessary the Sub-Contractor shall bear the cost of any associates Builder's Work and making good finishes.

Installation Requirements - General and Liaison

The starting currents of all electric motors and equipment supplied under the Specification shall be limited so as not to exceed the maximum permissible starting currents described in the Electricity Supply Authority's (KPLC) Bye- Laws.
Attention is drawn to the fact that all the Sub-Contractor's work is subject to the

Engineer's approval.

Installation and Commissioning

The Sub-Contractor shall be deemed to have included in the Sub- Contractor Sum for the services of a specialist or manufacturer's engineer or technician to assist in the installation and commissioning of the Sub-Contract Works or any part thereof if the Sub-Contractor has not his own suitable and competent staff available at the site of the works to carry out such functions.

Labelling

All plant, apparatus, equipment, distribution boards, distribution cases, terminals and cable cores shall be securely and properly labelled to the approval of the Engineer. The labelling shall be such as to show clearly the identification of the item and if applicable its control function and the part of the system controlled.

SECTION 2- H.V. SWITCHGEAR
H.V. SWITCHGEAR

General

The units which together comprise the switchboards are to be provided in accordance with the Contract Drawings and Schedules of equipment.

The switchboards shall be manufactured in accordance with B.S.162 and all equipment and material used in the switchboards is to be in accordance with the appropriate British Standards. The switchboards shall be flush fronted in appearance with the breaker operating mechanism easily accessible but behind the hinged door.
The Sub-Contractor shall allow for the supply of a complete set of Record Drawings relating to the switchboard, made in ink on tracing cloth.

Four sets of instruction manuals are to be provided describing the method of operating the equipment together with instructions for maintenance and adjustment and giving full details of all connections brought out to the Test Link Blocks.

Supply System

1.25 mVA, 415V, 3 phase, 50Hz, earthed system.

Type of Switchgear

The switchgear shall consist of oil circuit breakers or oil switches as indicated on the Contract Drawings. They shall be of the fully interlocked, metal clad, vertical isolation type, incorporating integral earthing facilities manufactured to the current edition of B.S. 5211 and
B.S. 5463. Circuit breakers shall be fitted with manually charged spring closing mechanisms.

Bus-Bars

The bus-bars for each switchboard may be air insulated provided that all primary circuits in the fixed portion of the units are insulated with Epoxy Resin.

Bus-bars and current transformer joints and connections are to be insulated by epoxy resin shrouds which shall be mechanically jointed, or PVC sleeved and filled with encapsulating compound, otherwise the switchboard shall be compound insulated. The bus-bars and connections shall be constructed from high conductivity solid copper. The bus-bars and bus-bar supports shall be arranged to withstand, without damage, the effects of any fault current up to and including the maximum rated breaking capacity of the switchgear.
Bus-bars and connections shall be suitably and adequately colour coded for phase identification.

Extensibility

All units shall be so designed and the bus-bars drilled so that further extension units can be added without difficulty. Space and full provision for fitting future units shall be allowed in accordance with the instructions in the Schedule of Equipment.

Cable Boxes

Where required, cable boxes manufactured from close grained cast iron to B.S. 2562, Part 1 where applicable, shall be provided suitable for the reception of the cable specified.

Special Tropical Finish

The switchgear shall be designed for use in the tropics and the following requirements shall be incorporated:

a) All parts of the switchgear shall be totally enclosed and enclosures shall be vermin proof.

b) Gaskets shall be Neoprene or similar material.

2.1.2 All steelwork shall be treated with a phosphoric base etching primer containing a resign bond and finished with two coats of paint.

2.1.3 The interior of all gear not having oil, compound or other insulation, and all exposed current carrying metalwork (other than contact faces) shall be sprayed with an approved type of bakelite varnish.

The final coat of paint shall be of a colour taken from B.S. 3810 or B.S. 4800to be chosen by the Engineer.

Labels

Each switch shall have a designation label of Traffolyte with 10mm high black lettering on a white background. They shall be screwed to the equipment; adhesive only is not acceptable. A small similar designation label shall also be fixed to the rear of each fixed portion.

Relays

Protection relays shall be of the type and number listed in the schedule of requirements for HV switchgear in the Particular Specification.
All relays shall be flush mounted, and where required, shall be provided with additional contacts for remote indication etc., Bezels shall be finished in black gloss.
The relays shall have their secondary connections brought out to studs on the rear and firmly secured by suitable washers, nuts and locknuts. The relays shall have hand reset features.

Instrumentation

Instruments shall be fitted on the switchboard as shown on the drawings and in the schedules of requirements for HV switchgear in the Particular Specification.
Ammeters shall be MICS 100mm square dial flush mounting pattern with rotary selection switch.
Voltmeters shall be MICS 100mm square dial flush mounting pattern with rotary selector switch.
The construction of the instruments shall be in accordance with B.S. 89 and shall be of industrial grade.

Instrument Panels

Instrument panels shall be mounted at the same height on each unit and have suitably hinged front panels.

Test Link Blocks

Test link blocks shall be connected to all protection and instrumentation current transformer connections.

Small Wiring

All small wiring necessary for connecting the instruments, relays and other devices shall be included and shall have a conductor size of not less than 7/.085mm with a thermoplastic flame retarding type of insulation.
The wiring shall be distinctly colored and marked with ferrules of an approved type at each end.
All wiring within each switchboard, not installed in conduits, shall be neatly laced and cleated to the panel structure of each switchboard and its auxiliary equipment. Where wiring passes through a hole in the metal work, thermoplastic grommets shall be used and in no case shall cables be unprotected where they come into contact with the edge of a piece of metal work.

Current Transformers

Separate current transformers shall be provided for protection and instrumentation. Current transformers shall have a secondary rating of 5 amps. The primary currents are indicated on the drawings. Current transformers shall have overcurrent factors suitable for the prospective short circuit current of the system. Current transformers shall have overcurrent factors suitable for the respective short circuit current of the system. Current transformers required for operating relays shall have a one- second rating as defined in B.S. 3938, be suitable for the characteristics of the relay concerned and have

a minimum output of 15 Va.
Current transformers shall be of the bar primary or wound primary type according to the transformer ratio with jointress ring core of either hot or cold rolled silicon iron.

Voltage Transformers

Voltage transformers shall be of the dry type with hinge isolation and in accordance with B.S. 3941. The rated output and accuracy offered should be stated. Cartridge type fuses shall be provided for protection of both primary and secondary windings.

Drawings for Approval

The following drawings shall be submitted for each switchboard for approval as soon as possible after receipt of instructions from the Engineers to proceed:
Plans and elevations showing position of instruments, relays, current transformers, voltage transformers, fuses, cable boxes and other accessories.
Foundation plan showing fixing bolt centres, cables centres and other relevant dimensions, wiring and connection diagrams and schematic diagrams.
Three copies of each drawing as finally approved shall be supplied to the Engineer. In addition, the Sub-Contractor shall provide any other drawings or information required by the Engineer in order that the Engineer may satisfy himself as to the design of the plant. Manufacture shall not be commenced until all relevant drawings have been approved by the Engineer.

Miscellaneous

A tinned copper bonding bar shall be provided for the full length of the switchboard to which each unit shall be bonded.
A wall chart mounted on metal, with instructions for the treatment of electric shock, shall be supplied and fixed in the switch rooms.
Six in number heavy brass non-interchangeable padlocks, for locking switchgear, spout covers and operating mechanisms, shall be provided each with two keys.
A framed diagram showing clearly the layout of the high voltage distribution system shall be provided and fixed in the switch rooms.

D.C. Tripping Equipment

A nickel cadmium type battery adequately rated to operate the D.C. tripping circuit of the breakers shall be supplied with each switchboard. The battery shall be complete with floor mounting stand and a suitable trickle charger having a 240-volt single phase input.
From the output terminals of the battery unit wiring shall be taken to the trip terminals located at the rear of the switchboard.

SECTION: POWER TRANSFORMERS

General

Power transformers shall be dry type and of voltage ratio and rating called for in the Specification.
There will be 1No. 1.0MVA, 11kV/415V indoor power transformers.

Dry-Type Transformers

Dry-type transformers shall have Class AN cooling, windings vector groupDY.11, insulation Class `C'. The arrangements and connection of windings, tap-changing, loading and terminal boxes shall be as previously detailed in Clause

Temperature rise shall not exceed that listed in Table 13 of B.S.171 with the reduction factor listed in Table 15 applied for the climatic conditions described in the Specification.

a) The transformer shall be complete with the following fittings: -
b) Rating plate,
c) Terminal marking plate,
d) Lifting lugs
e) Earthing terminal for frame.

Transformer Tests and Inspections

The Engineer shall be invited to inspect the transformers at the manufacturer's works during the erection of cores and windings, and to witness final tests when the transformers are fully assembled. It will be the Sub-Contractor's responsibility to inform the Engineer and give reasonable notice of the manufacturer's intention to carry out the above assemblies and tests. The tests shall be as described in clause 1802 of B.S. 171:1959.

The Sub-Contractor shall submit three copies of all relevant test certificates (B.S. 171 Clause 1802(a)) to the Engineer for approval prior to shipment of the transformers. Certificates of type tests (B.S. 171, Clause 1802 (b)) will be acceptable subject to the Engineer's approval except where specified elsewhere in the specification.

Transformer Tests on Site

The Sub-Contractor shall carry out all necessary tests to the satisfaction of the Engineer to ensure that the transformer has not been damaged in transit and is ready for service, such tests shall be made before setting to work and shall include but not limited to: -

- Continuity and polarity tests,
- Insulation resistance tests,
- Oil moisture and acidity tests

SECTION – 4 L.V. SWITCHBOARD AND GEAR

General

The switch gear shall be designed throughout to ensure safety during operation, inspection, cleaning and Maintenance and shall be so arranged as to minimize the risk of fire arising and spreading.

The switchboard shall be manufactured in accordance with B.S. 162 which co-ordinates the requirements for electric power switch gear and associated apparatus.
It is not intended that B.S. 162 should cover the requirements for specific apparatus for which separate British Standards exist. All equipment and material used in the switchboard shall be in accordance with the appropriate British Standard.

Switchboard Cubicle Construction

The switchboard shall be a cubicle type of flat front, back connected, sectional, painted, all steel construction of neat appearance.

It shall be floor mounted and have ring bolts, lifting lugs or other approved means of transporting and lifting.

Each switchboard section shall be completed, fully wired and checked out at the factory and shall require a minimum of installation work at the Site of the Works. Modula construction shall be used wherever practicable and provision shall be made for simplifying servicing, replacement and maintenance throughout without major dismantling.

The switchboard shall be constructed from not less than 10 gauge welded bright mild steel for framework and structural sections and 16 gauge for doors and panels which shall be adequately stiffened by folding or welded stiffeners. The switchboard base shall be of heavy gauge tube or structural section to allow moving on rollers. All doors shall be properly stiffened and fitted with heavily cadmium plated concealed hinges and flush catches.

Removable stiffened steel covers shall be provided elsewhere on the switchboard for full access. All doors and covers shall be fitted with cemented resilient gasket seals to provide a dust proof enclosure. All hardware and fastening shall be heavily cadmium plated. No self- tapping screws shall be used.

All steelwork shall be clean and free of burrs, scale and blemishes, with all raw edges hidden and shall be finished with a rust inhibiting treatment one primer or undercoat and final coat of first quality sprayed baking enamel the colour of which shall be to approval.

The switchboard shall be arranged to provide the maximum of safety to personnel and equipment. All electrical wiring and bus-bars shall be completely enclosed. Closure panels, isolating and insulating barriers and interlocks shall be provided as required for maximum safeguard.
All fuses witches shall be capable of being padlocked in the `OFF' and the `ON' positions.

Adequate supports shall be provided for all bus-bars and wiring and incoming and outgoing cables shall be provided with glands, cable boxes and other necessary terminations in a cable area separate from the bus bars.
All switches shall be operable from floor level, all fuses shall be within 2000mm of the floor and flush mounted indicating meters within 1650mm. The main switchboard in 11/415KV Substation shall be IP-32 Form-3B complete with 1No 1000A Incomer MCCB, 1No 800A Outgoing breaker– to riser copper busbars, 1No 250A Outgoing breaker– to Essential loads panel, 2No 125A Outgoing breakers– to Lift board and mechanical plant room board,1No 400A Outgoing breaker– to power factor correction bank, 2No 63A Outgoing breakers– to switch room electric board and control pillar board and2No. spare spaces
Where spaces on the switchboard are provided for future circuit components to be installed, as shown on the drawings, all ancillary parts shall be provided and installed so that future components may be installed and connected in the least time possible. Full

safety precautions shall be provided with all such spaces.

The mild steel angle or channel forming the bottom rear edge of the switchboard shall be made up in sections and bolted into position such that any one section may be removed to facilitate installation of cables.

Bus-bars

All bus-bars shall be of high conductivity copper and shall be manufactured and tested in accordance with B.S. 158 and B.S. 159. They shall be mounted fully enclosed within the main enclosure of the switchboard in separate chambers in accordance with B.S. 162. The
bus-bars shall be fully separated from the incoming and out-going cable areas.

Except for instruments, potential or current connections, which shall be clamped in position and be of minimum length, no circuit wiring shall be within the bus-bar chamber.

Bus-bars shall be sheathed in approved insulating material, in their respective phase colours, and secondary insulation shall be provided where bus-bars pass through supports to prevent tracing paths.
Supports shall be such that the required clearances between phases, neutral and earth are maintained under rated continuous current and under fault conditions.

Provisions shall be made for expansion and contraction of the bus-bars and connections, with variations in temperature.

Interconnections between bus-bars and switchgear shall be of minimum length, properly insulated and rigidly supported.

All contact areas of the bus-bar and the connections fastened to the bus-bars shall be heavily silver-plated. Joints and connections shall be rigidly made with clamps and high tensile steel bolts and nuts used with spring washers to maintain uniform pressure and flat washers to prevent cupping. Ready access to all joints and connections shall be provided.

Circuit Breakers

Where oil circuit breakers are called for on the drawings, they shall be suitable for the current rating and system conditions indicated and shall be in strict accordance with B.S. 116. They shall have a minimum breaking capacity of 26MVA at 415V and shall carry a Certificate of Rating to B.S. 5311 issued by any approved testing Authority.

Where air circuit breakers are called for on the drawings, they shall be suitable for the current rating and system conditions indicated and shall be in strict accordance with B.S. 5311. They shall have a minimum breaking capacity of 31 MVA at 415V and shall carry a Certificate of Rating to B.S. 5311 issued by an approved testing Authority.
The main switchboard in 11/415KV Substation shall be IP-32 Form-3B complete with 1No 1000A Incomer MCCB, 1No 800A Outgoing breaker– to riser copper busbars, 1No 250A Outgoing breaker– to Essential loads panel, 2No 125A Outgoing breakers– to Lift board and mechanical plant room board,1No 400A Outgoing breaker– to power factor correction bank, 2No 63A

Outgoing breakers– to switch room electric board and control pillar board and2No. spare spaces

Each circuit breaker shall be fitted with telescopic rails to allow the breaker to be withdrawn clear of the cubicle and a racking mechanism. Safety shutters shall be provided to protect against accidental contact with the stationary isolating contacts when the breaker is withdrawn.

Interlocks shall be provided to ensure that: -

a. The cubicle door is closed and the slide rails locked before the circuit breaker can be racked in.
b. The trip button must be depressed before the racking mechanism can be operated in either direction.
c. The circuit breaker cannot be pushed into the racket in position without the use of the racking mechanism.
d. The cubicle cannot be opened when the circuit breaker is in the racked in or fully racked out position.
e. The circuit breaker can be operated only when it is in the fully racked in or fully racked out position.

The circuit breakers shall have a stored energy, single shot, trip free, closing mechanism.

Inverse definite minimum time lag over current relay protection shall be provided on each circuit breaker.

Tripping under fault conditions shall be effected by a 30V D.C. trip coil energized by a 30V nickel cadmium battery and charger set. The battery and its trickle charger shall be mounted in a naturally ventilated, floor mounted, steel cubicle and located as shown on the drawings. This battery shall be suitable for tripping two low voltage circuit breakers. A manual trip push button which shall be independent of the operator's speed of operation shall also be provided.

The trip coil latching lever and the roller mechanism shall be made from anticorrosive metal. The contacts shall be silver plated, shrouded and renewable. Barriers shall be provided between phases and recessed into the base.

A mechanically operated semaphore shall be used to indicate the condition the circuit breaker using the words `ON' AND `OFF'.

Each circuit breaker shall be provided with the facility of locking the breaker in the ’OFF’ position.

Oil Switches

Oil switches shall be identical to the oil circuit breakers, B.S. 5311 except that tripping devices are not required. Means of locking the switches in the `OFF' position shall be provided.

Air- Break Switches

Air- break switches shall be suitable for the system conditions, indicated and shall be in strict accordance with B.S. 5419. Class II switches. Means of locking the switches in the `OFF' position shall be provided.

Fuse Switches

All fused switches shall be supplied and installed complete with Class Q1 H.R.C. Cartridge Fuse Links complying with B.S. 88, as shown on the drawings and shall be contained in metal clad, dust proof, gasket sealed individual enclosures with non-detachable steel operating handles which shall be capable of being locked in either the `ON' or the `OFF' position.

The fuse switch units shall comply with B.S. 5419 and shall be with drawable.

The fuse switch units shall have fault rating at least equal to the fault rating of the switchboard in which they are to be installed.

The fuse switch units shall be of fast make break design suitable for on load operation and shall be arranged operation of the switch when the cover is open and to prevent opening of the cover when the switch is in the `ON' position. The H.R.C. fuse links shall be carried on the moving contact mechanism and shall be isolated from the line and load contacts when in the `OFF' position. In the `ON' position a barrier shall be interposed between the fuse links
The switch contacts shall be separately and fully shrouded and shall be renewable.

Moving or fixed indicators shall use the words `ON' and `OFF to indicate the fused switch condition. Indicators shall be mechanically locked with the moving contact assembly and shall operate in such a manner that all phases shall be broken before the `OFF' position is indicated.

Earth Bars

A high conductivity copper earth bar of not less than 50mm x 6mm section, adequately rated for the anticipated earth fault current, shall be installed the full length of the switchboard in the outgoing cable area within the switchboard enclosure. Connection to the earth bar shall be made with approved cable lugs and high tensile steel nuts and bolts with washers as specified for the phase bus-bars.

The points of contacts on the earth bars shall be silver plated.

Neutral Bars

A high conductivity copper neutral bar adequately rated and supported for normal and fault conditions shall be installed in the outgoing cable area in the switchboard enclosure. This bar shall be mounted on insulators and shall be divided into sections according to the design of the switchboard. The sections shall be connected by copper links double bolted to each section.

Voltmeters shall be MICS 150mm square dial, flush mounting pattern with rotary selector switch enabling phase to phase and phase to neutral volts to be read.

Voltmeters shall be protected by means of cartridge fuses, category of duty A.C.46 and fusing factor, 1.5. The construction of the instruments shall be in accordance with B.S. 89 and shall be of industrial grade.

The current transformers shall be of an approved type to B.S. 3938.

The Sub-Contractor shall agree with the Engineer, the arrangement of the indicating instruments, their scale deflections C.T. ratios and all information that the switchboard manufacturers may require, prior to manufacture of the switchboard.

Phase Failure Relays

Where the requirement is shown on the Drawings phase failure relays shall be installed for the operation of the emergency lighting.

Phase failure relays shall be connected across each phase and neutral of the supplies as indicated on the distribution diagram.

Relays shall be protected by means of cartridge fuses, category of duty A.C. 46and fusing factor 1.5.

In addition, test buttons shall be provided. The test buttons shall be connected in series with each phase failure relay coil so that when any one of the test buttons is operated the emergency lighting shall come on automatically.
Test buttons and relays shall be housed in the instrument section of the switchboard.

Air- Break Switches

All individually mounted air-break switches shall be of 660-volt metal clad type, single pole and neutral, or triple pole and neutral as required, fitted with interlocking handles so that the cases cannot be opened when the handle is in the ‘ON' position. All insulating material employed in the construction must be of non-hygroscopic type and to the approval of the Engineer.

The construction and performance of the air- break switch shall be in accordance with B.S.5419: Parts 1 and 2.

Switch Fuses

All individually mounted switch fuses shall be of the metal clad type, the number of poles with or without neutral, as required, fitted with interlocking handles so that the case cannot be opened when the handle is in the `ON' position. All insulating material employed in the construction must be of non- hygroscopic type and to the Engineer's approval.

The construction and performance of the switch fuses shall be in accordance with the relevant British Standard indicated below.

i) Units rated not in excess of 100 amps and for a system voltage not in excess of 250 volts to earth shall be in accordance with B.S. 5419 unless specifically amended by the Engineer.
ii) Units rated in excess of 100 amps and for a system voltage not in excess of 380 volts to earth shall be in accordance with B.S. 5419.

Fuses shall be of the cartridge type, to B.S. 88 category A.C. 46, Class Q1 and fusing

factor 1.5 graded to suit the loads carried.

Sub-contractor's attention is drawn to the fact that all fusing in single phase circuits shall be on the "Single pole" principle with solid link in the neutral unless otherwise noted.

Cabling

A cabling zone clear of busbars, fused switch and circuit breaker chamber, etc., shall be provided in such a manner to give minimum difficulty in connecting submain cables entering the switchboard for connection to fuses switch units or circuit breakers. The cabling zone shall be fully insulated from any live metal part so that future cabling and alterations can be carried out in complete safety without the necessity of shutting down the complete switchboard.

Distribution Boards

Distribution boards shall be clad, surface or recessed pattern with the number of ways, rating and phase arrangement (single or three phase) indicated on the drawings. Cases shall be zinc coated sheet steel of substantial construction with hinged lids fitted with foam rubber gasket, enameled finish. Where called for in the specification the cases shall be provided with locks. For ratings of 60 amp. and over detachable drilling plates and soldering lugs for incoming cable terminations shall be provided.
Where the requirement for fuses is indicated on the Contract Drawing the Distribution Boards shall be fitted with the high-quality porcelain fuse carrier sand bases, removable insulated shields to provide adequate protection against accidental contact with live metal, and circuit indicating labels fixed inside the cover.
The Distribution Boards shall be complete with HRC fuses to B.S. 88 1952, category 440 volts, A.C.5.
Where the requirement for miniature circuit breakers is indicated on the Contract Drawings, the Distribution Boards shall be fitted with moulded thermoplastic units of the combined thermal overload and magnetic short circuit tripping type to B.S. 3871, Part 1. MCB's of all ratings shall have a minimum short circuit current breaking capacity of 3,000 amps.
Where the prospective fault current exceeds 2500 amps. or where specified, careful consideration shall be given to back-up protection or the installation of miniature circuit breakers of a short circuit capacity in excess of 300 amps.
Although short circuit calculations were carried out when the Contract Drawings were prepared, the Sub-Contractor is advised to make his own calculations and assure himself that the prospective fault currents at each protection level does not exceed the short circuit capability of the switch or distribution gear he intends to install as it is his responsibility to sign the appropriate declaration in accordance with the I.E.E. Regulations.

Labelling of Switchgear and Distribution Boards

All switchgear shall have engraved labels indicating the services fed from them. The inscription shall be in white 10mm. high letters on black `Traffolite' sheet or equal and shall be fixed on or adjacent to the apparatus by screws or rivets.

Each Distribution Board shall bear a number or inscription as called for on the Contract Drawings which shall correspond to that shown on the Record Drawings. The circuits fed from each Distribution Board shall be marked on a card or identification plate fixed

to the inside of the Board or were provided for. This information must include the outlets (with cross reference to the reference numbers on Contract Drawings) fed from each fuse way or MCB and the size of the fuse or circuit breaker rating.

Drawings for Approval

The following drawings shall be submitted for L.V. each switchboard for approval as soon as possible after receipt of instructions from the Engineer to proceed: -

i) Plans and elevations showing position of instruments relays, current transformers, voltage transformers, fuses, cable boxes and other accessories.
ii) Foundation plan showing fixing bolt centres, cables centres and other relevant Dimensions.
iii) Wiring and connection diagrams.
iv) Schematic diagrams.

The copies of each drawing as finally approved shall be supplied to the Engineer. In addition, the Sub-Contractor shall provide any other drawings on information required by the Engineer in order that the Engineer may satisfy himself as to the design of the plant. Manufacture shall not be commenced until all relevant drawings have been approved by the Engineer.

4.17. LV Distribution Panel

Switch Board

- Switch board standardized sheet steel (2mm) execution including inscription plate and mounted on a metal support of 100mm
- Paint: Anti-rust primer: interior of panel RAL 7030 exterior of panel white powder coated
- Mounting: The equipment is to be mounted on the light metal frame,with terminals in the section
- Protection: 415V 3 phase with earthing
- Standards: In Accordance with SEV standards
- Voltage: Rated voltage 500V 50HZ, Service voltage 415V 50HZ, Control voltage 220V 50HZ
- Bus bars: Laminated HDHC Copper rectangular bus bar rated 800A
- TYP NS 3D Protection IP 54 rear must be accessible – Front Door, Back Door, Top closed and Baes Open
- Power Rating 1000Amps

Incoming

- Moulded case circuit breaker (make ABB or approved equivalent), nominal rating 1000A 660V 50HZ breaking capacity 50KA at 440V with over current and short circuit protection inclusive with solid state trip
- Current transformer 1000/1A
- Voltage transformer 415/110V BTV 10 with selector switch for all phases
- Electronic /KWH meter similar to ABB CE series or equal and approved

Lifts Distribution Board Outgoing MCCB

- Moulded case circuit breaker Four pole, breaking capacity rated 125A, make as ABB or LERGRAND or equal and approved with BMS compatible communicating module

Main Riser Outgoing MCCB

- Moulded case circuit breaking four pole, breaking capacity rated 800A, make as ABB, LERGRAND, or equal and approved with BMS compatible communicating module.

Mechanical Board Outgoing MCCB

- Moulded case circuit breaker Four pole, breaking capacity rated 125A, make as ABB or LERGRAND or equal and approved with BMS compatible with communicating module

Power Factor Correction Outgoing MCCB

- Moulded case circuit breaker Four pole, breaking capacity 50KA rated 400A, 660V, make as ABB or LERGRAND or equal and approved with adjustable thermal tripper and BMS compatible with communicating module

Essential Loads Panel Outgoing MCCB

- Moulded case circuit breaker Four pole, breaking capacity 50KA rated 400A, 660V, make as ABB or LERGRAND or equal and approved with adjustable thermal tripper and BMS compatible with communicating module
- 3 phase multi-function power meter with current voltage, KW, KWH, KVARH, PFAND with BMS Compatible
- 4 x 150mm dia. Heavy gauge PVC duct complete with draw wire from switch room to electrical closet in ground floor
- Trenching, sifting and backfilling the 750mm deep trench after laying the above ducts including compaction
- 900 x 900 concrete manhole complete with manhole covers marked (Hatari) Danger indelibly engraved at the top

Generator Feed Outgoing MCCB

- Moulded case circuit breaker triple pole, breaking capacity 50KA nominal rated 1000A, 415V 50HZ , make as ABB TYPE C401 N or LERGRAND DPX or equal and approved with adjustable thermal tripper and BMS compatible with communicating module

Control Pillar Outgoing MCCB

- Moulded case circuit breaker single pole, breaking capacity 50KA nominal rated 63A, 660V 50HZ , make as LERGRAND DPX or Merlin Gerin Type C101H or equally approved with adjustable thermal tripper and BMS compatible with communicating module

Power Room Electrics Outgoing MCB

- Moulded case circuit breaker single pole, breaking capacity 50KA nominal rated 63A, 660V 50HZ , make as LERGRAND DPX or Merlin Gerin Type C101H or equally approved with adjustable thermal tripper and BMS compatible with communicating module

Spare Outlet Outgoing

- Spare cubicle for future connection
- Change over switch comprising of 2NO. 1000A 4p motorized MCCB, Electromechanical interlocked complete with microprocessor, electronic trip, manual or bypass with BMS compatible with communicating module.

Power factor correction panel in switch room

- Constructed from rolled steel angle channel section welded to form robust structure with data-cable 16-gauge plates to SEV standards mounted on B198 Sheet 1 metal support. Front – Doors, back – Doors, Top – Closed and Base – Open.
- Paint: Anti-rust primer: interior of panel RAL 7030 exterior of panel white powder coated
- Mounting: The equipment is to be mounted on the light metal frame, with terminals in the section to the floor
- Protection: 415V 3 phase with earthing

- Standards: In Accordance with SEV standards
- Voltage: Rated voltage 500V 50HZ, Service voltage 415V 50HZ, Control voltage 220V 50HZ
- Busbars: Laminated HDHC Copper rectangular busbar rated 400A
- Metering: Current transformer self-cooled rating 400/5A
- Power factor meter direct reading range – 0.5 capacitive of built-in series resistors TYPE SIEMENS M01055 – D3590
- Power factor rectangular 6 steps of 100, 50, 25, 10, 5,5 controllers similar to Siemens electronic KVAR controller type 4RY81 01 3DA01 supply voltage 415V 50HZ.

SECTION 5 POWER CABLES

Paper Insulated Cables

These shall be 1100-volt, 3300-volt, 6600 volts, or 11000-volt grade, according to operating voltage and manufactured and tested in accordance with B.S. 6480 for cables with copper conductors.

E.H.V. cables shall be suitable for operation on an earth system, and shall be of the belted type.

Multi core cables shall be paper insulated, lead sheathed, single wire armoured and served with hesian or PVC or left bright as indicated on the diagram of distribution. Single core cables shall be lead sheathed and served. All paper insulated cables shall be of the fully impregnated non-draining type.

Sizes of cables shall be in accordance with the details given on the Contract Drawings.

Jointing

Where possible the core of the paper insulated cable shall be taken direct to the terminal of the apparatus. The conductor shall be sweated into a cast pattern cable socket that has been drilled to receive the conductor without excessive clearance. A cable spreader box shall be fitted to and below the apparatus and filled with compound after the cables have been installed.

Alternatively, a system of compression jointing, approved by the Engineer may be employed. All cables tails shall be taped with double lapped Empire tape and after grade insulating varnish. VRL/PVC tails shall not be fitted without the approval of the Engineer in writing. If such approval is given the tails shall be of the same cross section as the PILC cable cores. The entire responsibility for the work involved in measuring, proper cutting, jointing and sealing paper insulated cables shall be borne by the Sub-Contractor who shall employ fully qualified, certified and experienced jointers for this work. This applies particularly to the jointers working on E.H.V. jointing.

Whenever a paper insulated cable is cut prior to joining the joint shall be commenced forthwith and completed without interruption. All necessary precautions shall be taken against the ingress of moisture and impurities during the preparation of the joint. Should the cable be cut and circumstances prevent a joint being made the ends shall be suitably sealed by means of plumbers lead caps pending the completion of the jointing work. The seals of the cables must not be removed until all preparations for jointing are complete and adequate

protection from the weather arranged by the Sub-Contractor.

Before rejoining cable ends shall be tested from moisture content in an approved manner. If any moisture is discovered the wet cable or cables shall be cut out.

Care shall be taken when making off cable ends to phase out the cores to agree with the transformer terminals. No cross overs will be permitted in the leads. Phase colours shall be clearly indicated at all points of connections and shall comply with B.S. 158, Table I.

It shall be ensured that all times straight through joints are from an A end to a Z end. Under no circumstances will core cross overs resulting from joints of the same end of the cable be permitted.

PVC Insulated and Sheathed Single Wire Armoured or Unarmoured Cables with Stranded Copper Conductors

PVC insulated, single wire armoured and PVC sheathed multi core cable shall be660/1000-volt grade, manufactured in accordance with B.S. 6346.

The cables shall be sized to comply with the current edition of the I.E.E. Regulations except where specific sizes of cables are shown on the Contract Drawings or detailed in other sections of the Specification.

PVC Insulated and Sheathed Aluminium Strip Armoured or unarmoured Cables with Solid Aluminium Conductors

PVC insulated, aluminium strip armoured and PVC sheathed multicore cables shall be 660/1000-volt grade, manufactured in accordance with B.S. 6346.

The cables shall be sized to comply with the current edition of the I.E.E. Regulations, except where specific sizes of cables are shown on the Contract Drawings or detailed in other sections of the Specification.
The cable cores shall be identified in accordance with B.S. 6346.
An approved system of compression terminations secured to the conductor by indentation made with a special dies and a portable hydraulic compressor as recommended by the cable manufacturer shall be used.
Alternatively, in the appropriate conductor sizes and, where tunnel type terminals are used, connection may be made by means of "Swage" process whereby the shape of the conductor end is rounded to fit the terminal.

To eliminate the possibility of damage to cables due to thermal expansion, allowance for movement shall be made by the introduction of a bend or set in each core adjacent to the terminal.

Aluminium armour may be used as the earth continuity conductor where the Crosssection is adequate for the purpose, but under no other circumstances shall the armour be used as a neutral conductor.

Gland for PVC Insulated Armoured and PVC Sheathed Cables

The cables shall be terminated on a mechanical type cable gland. The glands shall be complete with armouring clamp suitable for bonding the armouring to equipment by means of an earth continuity conductor of adequate cross section and the bend shall be carried out at the time of making the joint. PVC shrouds shall be fitted over terminal cable gland and clamp.

Installation

Cable routes were indicated on the Contract Drawings for tender purposes only.
The exact final routing shall be agreed with the Engineer.

All work except Builders Work shall be carried out by the Sub- Contractor, who shall include for the supply and installation of all jointing material, cable supports, steel racking and making all the necessary cable joints. The cable shall be installed and tested in strict accordance with the appropriate clauses of the current edition of the
I.E.E. Regulations, the Factories Act, B.S. 6480 - Paper Insulated cables, and B.S. 6346 - PVC Insulated Cables.
Cables shall at all times be handled with care and every effort made to avoid damage. Unloading, rolling to position and mounting of cable drums shall be carried out efficiently and carefully in the recognized manner and cable shall be pulled from the top of the drum and twisting shall at all times be avoided.
Adequate numbers of drum jacks, rollers and other handling accessories shall be used and make shift arrangements will not be permitted. In all cases care shall not be fragged over loose earth, concrete or any surface but shall be adequately supported on rollers or manhandled into position.
The Sub-Contractor shall take particular care to avoid damage to other services which may run adjacent to or across the route of the cable being installed. The Sub-Contractor shall take particular care to avoid damage to other services which may run adjacent to or across the route of the cable being installed.

Cables shall be installed with a minimum of 300mm clearance form any equipment or pipework including lagging associated with other services. Where this condition is unavoidable or difficult to maintain, the Engineer shall be informed prior to the installation being commenced, otherwise the Sub-Contractor may be called upon to divert or adjust the route of any cable to the Engineer's satisfaction.

Cables passing through structural slabs shall be tightly wrapped with asbestos tape and grouted in. A hard wood surround below shaped to suite the cables passing through shall be fitted below the slab. Where cables are run vertical heavy gauge sheath metal guards shall be supplied and fixed to the wall. The casing shall be fixed from floor level to the underneath side of the appropriate and dividing box or to a height of 1.5m above floor level.

Detailed drawings showing dimensions and method of manufacture of the cable guards shall be submitted for the approval of the Engineer.

All cables shall be firmly and adequately supported from cable hangers for the whole of their length except when they are run through stoneware or pitch fibre pipes or are buried directly in the ground.

Continuity, phasing and insulation tests shall be carried out and the record of all tests shall be sent to the Engineer within 7 days of the cables being installed and jointed.

Cable Supports

Where cables run through service ducts or cable trenches, they shall be fixed by means of purpose made cable hangers which shall be of the Unistrut pattern or equal and approved. Hangers shall be of non- ferrous metal or of steel and shall be treated with one coat of zinc primer and two coats of anti-corrosive paint and shall be suitable for horizontal and vertical

mounting, either cased in, or secured to concrete structure using such brackets and adapters as are available from the manufacturers.

Hangers for the support of the cables shall be spaced according to the current edition of the I.E.E. Regulations, Table B.2M or to the manufacturers recommendations as appropriate. The Sub-Contractor shall take particular care to avoid sagging of stress on any cable by wrong positioning or inadequately spaced hangers. Single and multiway cleats shall be of cast alloy, interlocking pattern, for mounting either on the steel channels or directly to concrete structure in the case of single way cleats.

The sizes of cleats shall be selected such that all cleats can be tightened down without exerting undue pressure or strain on the cables.

In the case of vertical cables, the cleats shall be so designed and of sufficient number to grip the cable firmly to prevent creeping. No cable shall be run without fixing and all cable hangers and racks shall be approved by the Engineer before installation.

Where cable routes are subject to numerous changes in level and direction, additional cable hangers shall be provided to satisfactorily negotiate all such obstructions. Where cables are spaced some distance from a supporting service, the cable racks shall be separately bolted to additional lengths of channel section which in turn shall be fixed to brackets bolted and fixed into the structure.

Cable Identification Discs

Identification discs shall be supplied for cables installed within buildings and attached with galvanised wire to each cable at intervals not greater than 12m and at all conspicuous positions such as within cable trenches, manholes, and at all cable terminations.

Discs shall be machine engraved from non-deteriorating black traffolite or similar material displaying white engraved indicating the design voltage, the description of load, and the number of cross- sectional areas of the cores. The characters shall not be less than 3mm high and shall be clearly legible.

Cable Ducts

The Sub-Contractor shall provide and lay asbestos cement or pitch fibre cable ducts under roadways or concrete walkways under which cables are to be routed.
The Main Contractor will supply and install ducts where required in the footings of buildings, but it will be the Sub-Contractor's responsibility to provide accurate details to the Main Contractor of the required positions of these ducts, and to ascertain that they are laid to the correct falls. After the installation of cables all ducts shall be adequately sealed to restrict the ingress of moisture.

The number of ducts to be provided shall be as follows: -

1 cable	-	2 ducts
2 Cables	-	3 ducts
3 cables	-	4 ducts
4 or 5 cables	-	6 ducts
6, 7 or 8 cables	-	9 ducts

All cable ducts entering or within buildings including spare ways, shall be sealed at each end with Densoplast or other approved sealing substance to the satisfaction of the Engineer.

Terminal Sealing Boxes

All sealing boxes shall be of an approved make and design. The casting shall be of the split type secured together by bolts and nuts and treated inside and out with a suitable preservation compound and shall be complete with brass wiping gland.
The castings shall be made of close grounded cast iron free from all holes and flaws.
The halves of the casting shall be machined and so arranged to form an effective seal.

The box shall be provided with an external armour clamp. The lead sheathing of the cable shall be firmly secured to the interior of the box by clamping and where necessary by lead packing to form an additional support for the cable.
The lead sheathing shall be plumbed to the brass wiping gland and the armouring neatly fixed by means of binding wire and the external clamp. The Sub-Contractor shall ensure that the lead sheath and wire armouring is efficiently bonded to the metal parts of the apparatus served, with 300mm x 10mm copper tape. This bond shall be fitted at the time the joint is made.
An adequate compound filling gland shall be provided on each box and shall be so placed that the compound can be poured when the sealing end box is bolted into position.

Sealing compound shall be a blend of natural bitumen base containing no coal tarderivatives of any kind and having no deleterious action whatever on the materials used in cable manufacture.

The compound shall be in accordance with B.S. 1858.

Trenching

Trenching and backfilling will be carried out by the Main Contractor, but the Sub-Contractor shall be responsible for marking out the cable routes and for the supervision of the backfilling in so far as the prevention of damage to the cables in this process is concerned.
Cables in trenches shall be laid at a minimum depth of 600mm for L.V. cables and 700mm for 11KV cables and shall be on a 75mm pad of shift soil or sand and a further 75mm shall be added before placing cable covers in position. Where laid in trenches the cables shall be completely protected by inter-locking concrete or other approved cable covers indelibly marked "DANGER, HATARI".

Cable marker posts fabricated in precast concrete, shall be installed at each cable entry into the building, each change of direction, each road or pathway crossing and throughout the length of the cable at intervals not exceeding 40m.
The marker posts shall indicate the voltage, depth and distance from the face of post of each cable installed.

Marker posts shall be provided at the position of all underground, through or tee joints and shall, in addition, to those functions detailed above, indicate the type of joint. The position of all marker posts shall be agreed with the Engineer before installation.

Testing

Before backfilling trenches and subsequent to all terminal jointing having been completed, H.V. cables shall be tested in accordance with
B.S. 6480, 1966. L.V. cables shall be subjected to all insulation test at pressure of 1000 volts

between cores and to earth and the results of these tests shall be recorded and communicated to the Engineer.

Cable Length, Types and Sizes

The Sub-Contractor shall be deemed to have allowed in the Sub- Contract Sum for supplying sufficient cable lengths of each type and size to complete the system and for making allowances for any additional lengths for cutting and waste.

Mineral Insulated Copper Sheathed Cables

Mineral insulated copper sheathed cables shall be manufactured in accordance with B.S. 6207 by an approved manufacturer. Where installed in corrosive situations, they shall be PVC sheathed. No cable shall have conductors less than1.5mm² cross section.
All main and sub-main cables shall be sized as shown on the Contract Drawings.
All final sub-circuit and control cables shall be sized in accordance with the current edition of the I.E.E. Regulations unless specifically noted on the Contract Drawings or the Specification.
All mineral insulated copper sheathed cable glands shall be of the same manufacture as the cable and shall be of the compression type. The choice of cable seal type shall be based on the manufacturer recommendation for the particular application.
In areas where a flameproof installation is specified, the glands shall be of flameproof type.

The cable glands and seals for PVC covered mineral insulated copper sheathed cables shall be of the same type as those specified in the preceding paragraph. They shall, however, be fitted with rigid impact resistant hoods and shall be filled with plastic compound as used for sealing the 44^0C cable seals.

Connection of mineral insulated copper sheathed cables of 4mm² cross section and larger to apparatus shall in general be by means of cone grip type cable lugs. At a termination, each core shall be identified by colour tapes or sleeves. Where this is not practicable, the Sub-Contractor shall advise the Engineer in writing and shall obtain his decision regarding the type of connection to be provided.

Where MICS cables are fixed direct to the structure of the building, the fixings shall be by means of copper saddles, brass screws and raw plugs.

Where MICS cables are fixed to cable tray the fixing shall be by means of copper saddles and brass bolts and nuts.

PVC covered copper saddles shall be used with PVC covered MICS cables.

Under no circumstances shall bare MICS cables be fixed to galvanized steel cable tray, galvanised steel brackets or galvanised structural steelwork.

Bare MICS cables shall only be fixed direct to painted structural steelwork and brackets or to painted PVC/Plastic coated steel cable trays as specified later.

All MICS cable fixings shall be installed 75mm either side of a fitting, accessory or right- angle bend and subsequently spaced in accordance with the current edition of the I.E.E. Regulations.

All persons employed to make terminations on MICS cables shall have attended a course of instruction approved by the Engineer. Prior to commencing work, they shall demonstrate to

the Engineer their ability to make a satisfactory seal.
The greatest care shall be taken at all times when terminating MICS cables and insulation tests shall be performed 24 hours after the cable has been sealed.
Where single core MICS cables are used, all necessary precautions shall be taken to prevent hysteresis and eddy currents.

Ferrous plates or structures through which the cables pass shall be slotted and brass glands and sockets shall be used.

SECTION 6- APPROVED WIRING SYSTEMS

APPROVED WIRING SYSTEMS

The system of wiring has been specified in the BoQ and shall be one or more of the following systems: -

System A - Cables enclosed in Concealed Steel Screwed Conduit or Trunking

The wiring shall be carried out in an approved type of single core, plastic insulated cable, enclosed in steel screwed conduit or trunking mechanically and electrically continuous throughout.

Conduit shall be buried in the wall and floors of the building, and either run in roof space or buried in structural slabs.

System B - Cables enclosed in Steel Screwed Conduit or Trunking fixed to the surfaces of Walls and Ceilings.

The wiring shall be carried out in an approved type of single core, plastic insulated cable enclosed in steel screwed conduit or trunking, mechanically and electrically continuous throughout.

Conduit and trunking shall be run on the surface of the walls and ceilings, or infalse ceiling spaces. Conduit shall be secured in position by means of spacer bar saddles, and counter sunk brass screws. Conduit shall be run horizontally on the walls or vertically to switches or outlets.

System C - PVC Insulated Cables with Insulated Earth Continuity Conductor Enclosed in Concealed Non-Metallic Conduit or Trunking

Wiring shall be carried out in an approved type single core, plastic insulated cable with earth continuity conductor enclosed in high impact, heavy gauge, non- metallic conduit or trunking.

Conduit shall be buried in the walls and floors of building, and either run in roofspace or buried in structural slabs.

System D - PVC Insulated Cables with Insulated Earth Continuity Conductors enclosed in Non-Metallic Conduit or Trunking fixed to the Surfaces of Walls and Ceilings

Wiring shall be carried out in an approved type single core plastic insulated cable with earth continuity conductor enclosed in high impact, heavy gauge, non- metallic conduit trunking.

Conduit and trunking shall be run on the surface of the walls and ceilings or in false ceiling spaces. Conduit shall be secured in position by means of spacer bar saddles. Conduit shall be run horizontally on the walls or vertically to switches or outlets.

System E - Mineral Insulated Copper Sheathed Cables

The wiring shall be carried out in single core or multi-core mineral insulated copper sheathed cables run on the surfaces of walls and ceilings, in the roof space or concealed in walls and floors.

System F - PVC Insulated and Sheathed Cables, Clipped to the Surface of the Walls and Roof Members or to the Ceilings

The installation shall be carried out in an approved type twin or three-core PVC insulated and sheathed cable. Cables shall be securely fixed to the surface of the walls and in the roof spaces, and shall be fixed to the underside of ceilings, only when three is no reasonable access from above. They shall be fixed to walls and the sides of roof members or in such other positions as may be approved by means of non-corrodible, saddles or buckle clips with non-corrodible fixings spaced at intervals not exceeding 225mm. Where cables pass through holes they shall be bushed.

Under no circumstances will joints be permitted in the run of a cable. Wires shall be connected together only by looping into the terminals of accessories or by approved mechanical connectors in suitable joint boxes. Under no circumstances will taped joints be permitted.

The cables sheathing shall be carried into the switch, ceiling rose or other accessories.

Cables shall not be installed within 300mm of a metal roof, unless clipped to the lower side of wooden joints or otherwise protected from radiant heat.

6.1.1 System G - PVC Insulated and Sheathed Cables Clipped to Roof Members and Run in Metal or Plastic Conduit Drops Concealed in Walls

The wiring shall be carried out as for System F except that the cables shall be enclosed in steel or plastic conduit where drops are required to switches, distribution boards or accessories.

6.1.2 System H _ PVC Insulated Single Wire Armoured and PVC Sheathed or Paper Insulated Lead Sheathed Single Wire Armoured and Served Cables Laid in Ducts, Trenches and Saddled to walls

Cables shall be suspended on purpose - made frame and hangers, drawn through ducts or laid in trenches. Cables suspended on multiple hangers shall be so arranged that one cable can be removed without disturbing the others. Frames and hangers shall be galvanised or of non-ferrous material and shall not be fixed in contact with other metals with which they are liable to set up electrolytic action. All spacing's of cable hangers and supports shall not exceed those laid down for the relevant size and type of cable in the current edition of the I.E.E. Regulations.

SECTION 7- CONDUITS, TRUNKING AND ASSOCIATED FITTINGS

Steel Conduits - Steel Trunking

Conduits shall be of welded heavy gauge Class B to British Standard Specification B.S.31. In no case will conduits smaller than 19mm diameter be used on the Sub- Contract Works. Conduits installed within buildings shall be of black enameled finish except where specified otherwise. Where installed externally, 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 Engineer.

Metal trunking shall be fabricated from mild steel of not less than 18 swg. similar in pattern to that manufactured by M.S Walsall Conduits Ltd. All sections of trunking shall be rigid fixed together and attached to the framework or fabric of the building at intervals of not less than 1200mm. Joints in trunking shall not overhang fixing points by more than 600mm.

All trunking shall be made electrically continuous by means of 25mm x 3mm copper links across each joint in the system. Connection shall be made by means of electro-tinned bolts (head inside trough) nuts (6mm dia. minimum) flat washers and spring washers, and where the trunking is galvanised, the galvanising shall be removed within 6mm of the jointing strap, and the area painted.

All trunking fittings (i.e. bends, tees, etc) shall leave the main trough completely clear of obstruction and continuously open except through walls and floors, at which points suitable fire resisting barriers shall be provided as may be necessary.

Where trunking passes through ceilings and walls the cover shall be solidly fixed 150mmeither side of ceilings and floors and 25mm 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 or fuse boards, such connections shall be made by trunking fittings manufactured for this purpose and not by multiple conduit couplings.

Where boxes and bends or similar fittings are used, particular attention shall be given to avoid damage to cables on corners.

Where vertical sections of trunking are used which exceed 900mm in length, staggered tie off points shall be provided at 900mm intervals to support the weight of cables.

All trunking systems shall be painted as for conduit.

Where a wiring system incorporates galvanised conduit and trunking, the trunking shall be deemed to be galvanised 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 of45% 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 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 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 such as `Rust Anodi' manufactured by C.P. Development Co. (London) Ltd., for galvanised tubing immediately after the conduit are erected. All bends and sets shall be made cold without altering the section of the conduit, the inner radius of the bend shall not be

less than 2½ times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of draw-in box. Where straight runs of conduit are installed, draw-in boxes shall be provided at distances not exceeding 12 metres. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

Conduit throughout shall be of sufficient section and so arranged with draw-in boxes to allow easy drawing in and out of any one or all of the cables in the conduit.

All metallic and non-metallic conduit shall be swabbed out prior to drawing in cables, and they shall be laid so as to drain off all condensed moisture without injury to end connections.

Conduit and trunking shall be run below and kept at least 150mm clear of hot water and steam pipes, and at least 150mm clear of cold water and other services unless otherwise approved by the Engineer.

Conduit installed and buried in walls shall allow a minimum of 10mm cover. These conduits and those cast `in-situ' in concrete slabs shall be given one coat of rust prevention paint before installation of conduit and before concrete is placed. Sunk circular conduit boxes shall be provided with break joint rings of white moulded material or metal.

Surfaces conduit shall be run in square symmetrical lines and shall be marked on site for approval before installation. Conduit shall be fixed by means of distance saddles spaced at not more than 1200mm, for 19mm and 25mm conduit and 1.5 metres for larger sizes. Conduit shall be fixed each side of conduit boxes at a distance not exceeding 600mm.

Where conduit runs enter specified areas requiring flameproof equipment, barrier boxes shall be inserted immediately before the conduit enters the flameproof area. All conduit installed within this area shall be solid drawn galvanised, as shall be conduit fittings and accessories and Buxton Certified as suitable for Group II hazards. Equipment shall comply with B.S. 229, B.S. 889 and Code of Practice C.P. 1003.

In no case shall conduit from different distribution boards be connected at one junction box, likewise cables from different distribution boards shall not be housed in the same conduit.

All boxes shall conform to B.S. 31, shall be of malleable iron, and black enamelled or galvanised according to the type of conduit specified.

All conduit boxes, except loop-in pattern in concrete floors shall be fixed direct to the structure apart from the support provided by the conduit.

Both lids where required shall be heavy gauge secured by means of brass screws.

Draw-in through boxes shall be provided in all conduit systems for the drawing in or out of any cables after installation is completed.

All adaptable boxes and lids of the same size shall be inter-changeable.

Boxes used on surface work shall 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.

Draw-in boxes in the floors shall be avoided except where they are essential when they shall

be grouped in positions approved by the Engineer and covered by suitable floor traps, with non-ferrous trays and covers.

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

The Sub-Contractor shall take full responsibility for the filling in of all covers, but the filling in materials will be supplied and the filling carried out by the Main Contractor.

Where buried in the ground outside the building the whole of the buried conduit shall be painted with two coats of approved bitumastic composition before covering up.
Paint damage and joints under screed or cast in-situ shall be similarly treated.

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.

Flexible Conduit

Conduit connections to motors and equipment shall be made using a minimum of 300mm waterproof flexible conduit. The solid conduit shall be terminated in a large BESA or adaptable box enclosing sufficient coils of motor cables to enable "Tong Test" readings to be taken in each conductor. Earth continuity shall be maintained by means of a copper conductor seized in accordance with the appropriate table of current edition of the I.E.E. Regulations and insulated with Green and Yellow PVC. This conductor shall be run externally to the flexible conduit connecting apparatus to solid conduit and shall be secured to the connecting adaptors by an approved means.

All connecting adaptors shall be solid bronze or brass pattern with standard thread for conduit connection and a thread for conduit connection and a thread to receive the flexible conduit. The adaptor shall be sweated solid to the flexible conduit and the rub screw fully tightened.

Plastic Compound

All galvanised boxes and boxes in a situation where the air flow is likely to cause excessive condensation shall be filled with a plastic compound which fulfills the following conditions: -
No effect on the physical properties of insulation at any temperature. No effect on metals,

porcelain, synthetic resins, etc.,

Unaffected by atmospheric and temperature extremes. Remains plastic indefinitely. Has a

high insulation value.

Telephone Conduit

The arrangement and size of telephone conduit shall be such as to accommodate the number of circuits as indicated on the Contract Drawings. Conduit shall terminate in standard metal boxes to B.S. 1363 with flush fitting cover plate. Draw wires of piano quality steel wire of not less than 22 swg. shall be left in all telephone conduit Draw-inboxes shall be provided in telephone conduit on the same basis as laid down for power and lighting conduit.

Telephone outlet boxes, draw-in boxes and the telephone distribution boxes shall be marked internally with yellow paint to distinguish them from boxes provided for other services.

Television Conduit

Television conduit shall be 19mm diameter thermo-plastic type installed vertically from each

outlet point terminating 300mm above finished roof surface. A purpose made bend shall be screwed on to the conduit at its roof termination. Outlet points shall be the conduit at its roof termination. Outlet points shall be Belling and Lee Type 1480 complete with plug type L734/PAl, or other similar and approved, fitted to a flush plastic box to
B.S. 1363. Draw-in wires as provided for telephone conduit shall be installed.

Cable Tray

Cable tray shall be fabricated from perforated mild steel tray of 150mm minimum width and 14 swg. with return flanges and coupling pieces for rigidity and strength similar to that manufactured by Messrs H. Greening (Wolverhampton) Ltd., Catalogue No. R.F. 7type.

The cable tray shall be painted grey enamel for indoor use and shall be hot dipped galvanised for outdoor locations.

Cable tray shall be appropriately fixed on robust and substantial brackets fixed into the walls or shall be suspended on rods securely fixed to the structure together with a bracket arrangement as required to facilitate the support of the cable tray. Suspension rods shall be minimum 10mm. dia. mild steel, Brackets or suspension supports shall be provided as necessary, the spacing of which shall not exceed 1800mm.

Where the cable tray changes direction the minimum radius of bends shall not be less than 300mm on the inside of the bend and in no case shall be less than the bending radius of the cable supported.

All brackets, suspension rods and attachments shall be finished as the cable tray supported.

Rising Main Bus-Bars

The rising main bus-bar system shall comprise a sheet metal enclosure containing copper bus-bars rising through the building via the riser duct, and supplying the distribution system at suitable tap-off position.

The bus-bars shall be contained in a trunking of not less than 16 gauge sheet steel with detachable cover plates providing a reasonably dustproof enclosure. The covers shall be in sections the length of which shall be approved by the Engineer prior to manufacture.
Fixing brackets for wall fixing shall be provided at not less than 1800mm intervals

All steel work shall be given a rust preventative undercoat, and finished, in gloss enamel in an approved colour. All screws, bolts, nuts and washers shall be rustproofed.

Bus-bars shall be 4 pole 2 pole with full size neutral rated at the current indicated on the Contract Drawings, and shall consist of hard drawn, high conductivity copper bars.

Current ratings shall comply with B.S. 159 for a temperature rise not exceeding 50oC.

Copper fishplates shall be used for connection between the lengths of bars, and a high degree of conductivity shall be maintained.

The bus-bars shall be anchored rigidly in the vertical run, and approved means of taking up the maximum expansion and contraction likely to occur in the bars under normal conditions shall be incorporated. The recommendations of the manufacturers in this respect shall be closely observed.

Phase colours shall be clearly marked.

Bus-bars shall be supported and anchored by means of suitable high grade non- hygroscopic and non-tracking insulation and designed to withstand the stresses set up under fault conditions.

Where the rising bus bar systems are carried through floors, a barrier of fire resisting material shall be incorporated in the trunking at each floor level to prevent the possible spread of fire between floors.

End covers shall be fitted at the top of the run.

A suitable cable entry with terminal type scaling end box shall be provided at the lower end of the system to accommodate the main cable, the size of which is shown on the Contract Drawings.

Tap-off units shall be of the type and current rating indicated on the Contract drawings. All connections to bus-bars shall be made by means of bolted type clamps designed to ensure maximum conductivity at all times, and drilling of bus- bars will not be permitted.

A 25mm x 3mm copper tape shall be installed externally for the full length of the bus-bar trunking. The tape shall be bonded to each section at intervals not exceeding 1200mm, by means of 20mm brass bolts, washers and lock nuts.

Under floor Ducting

Where under floor ducting is specified, it shall be of two or three compartment type manufactured from 16-gauge zinc coated steel with base plate and badly welded together to make a single unit. The capacity of each section shall be adequate for the number of conductors to be drawn in and the space factor as required for compliance with the current edition of the I.E.E. Regulations shall not be exceeded.

SECTION 8- CABLES IN CONDUIT OR TRUNKING

General

The wiring throughout shall be carried out by looping cables progressively from point to point and no tee or other joint will be permitted. Conductors of the same circuit shall be contained in the same conduit or trunking. At distribution boards, the neutral bar in the same sequence as the live conductors are connected to the fuses or circuit breakers so that they can be readily identified.

PVC Cable in Conduits

Unless otherwise specified cables shall conform to B.S. 6004. They shall be 600/1000-voltgrade, single-core. No cable smaller than 1/1.38mm (1.5^2) shall be used. Cable size shall comply with circuit details as indicated on the Contract Drawings. Slack cable shall be left at all points of connection.

When used with pinch type terminals cable ends shall be prepared as follows:-

i) 1/1.38mm. ($1.5mm^2$) and 1/1.78mm. ($2.5mm^2$) - the conductor doubled backon itself to present a double thickness.
ii) 7/0.85mm ($4.0mm^2$) to 7/1.70mm. ($15mm^2$) - the strands well twisted together to make as solid a conductor as possible.
iii) 7/2.14mm. ($70mm^2$) and above - the strands sweated solid or fitted with purpose made soldering thimbles.

Cables shall be delivered to the site with seals intact and offered to the Engineer for inspection prior to installation.

Care shall be drawn in after the erection of the complete conduit and trunking system, or completed section if approved by the Engineer and all plaster has dried out. Draw wires, tapes or cables shall not be threaded in at the time conduit is being installed.

The live and neutral conductors of a circuit shall be drawn in the same conduit or enclosure.

Cable sizes shall be selected to allow for a 20% increase in load on every final sub- circuit.

Space shall be left in conduit and trunking for drawing in at some future date two additional cables of size not less than the largest cable enclosed in the conduit or trunking being considered.

Not more than six final sub-circuit cables shall run in conduit feeding outlet boxes, without the approval of the Engineer. Not more than eight cables running straight back to the distribution board shall be enclosed in any one conduit. Flexible cords shall be of 300/500-volt grade VR or PVC insulated and shall comply with B.S. 6500. No flexible cord smaller than $0.75mm^2$ shall be used. Flexible cords for pendant fittings shall be circular heat resistant type, white finish.

SECTION 9 TESTING ON SITE

Installation Tests

The Sub-Contractor shall conduct testing 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 I.E.E. Regulations, the Government Electrical

Specification and KPLC Bye-Laws.

Tests shall be carried out to prove that all single pole switches are installed in the 'live' conductor.

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 every earth terminal is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each 'ring' circuits.

Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation.

The Sub-Contractor shall prepare and hand over to the Engineer within 14 days of the witnessed tests three copies of the results of the above tests. The Sub- Contractor shall be required to issue to the Engineer the requisite certificates upon completion as required by the current edition of the I.E.E. Regulations.

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

Testing Equipment

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 Engineer to enable him to carry out such tests as he may require.

Attendance on Other Contractors

The Sub-Contractor shall generally attend on other Contractors employed on the Works and carry out such electrical tests as may be necessary.

Equipment, Plant, Apparatus and Systems

The Sub-Contractor shall test to the Engineer's approval and as specified, all equipment, plant and apparatus forming part of the Works and before connecting to any power supply and setting to work.

Where such equipment, etc., forms part of, or is connected to, a system whether primarily 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 the Works, shall balance, regulate, test and commission the system to the Engineer's approval.

SECTION 10 EARTHING

The extent of earthing equipment to be installed as part of the Sub-Contract Works shall be as follows: -

Earthing System for High Voltage Supply

A main earth bus-bar of 55mm. x 6mm. of high conductivity hard drawn copper shall be mounted on insulators on the wall of the Sub-station at the position indicated on the Contract Drawings. The following connections shall be made to this bus-bar:

1. Insulated stranded cable connection to the transformer neutral
2. Bare conductors to the transformer frame.
3. Bare conductor to H.V. switchgear frame.
4. Bare conductor to L.V. Switchgear frame.
5. Insulated stranded conductor to sub-station earth electrodes.

The size of the earth continuity conductors shall be as follows:

Maximum Prospective Fault Current	Insulated Stranded Conductor	Bare Copper Conductor
14 KA	19/2.52 (95mm^2)	25mm x 9mm
9 KA	19/2.14 (70mm^2)	25mm x 3mm

Where necessary, earthing connections shall be protected against mechanical damage and corrosion.
Where connections are made to the earth bus-bars, contacting surfaces shall be tinned.

The earth electrodes shall comprise 8 earth rods, installed in pairs, each pair connected together and to the earthbus-bar by an insulated stranded conductor. The earth rods shall be 1.5mlong by 15mm. dia, extensible type as "Copper weld" or other equal and approved, each pair of electrodes shall be located not less than 3m. apart, the first pair being not less than 3m. from the building. The head of the earth rods shall be driven to 300mm below the surface of the ground and enclosed in a concrete box with a concrete inspection cover. The metal sheaths of all H.V. and L.V. cables shall be adequately bonded to the appropriate switchgear frame.

Earthing System for L.V. Supply

Where the supply is taken at L.V. from either a Substation on the site or a remote substation, the following earthing equipment shall be installed.

1. In the main switch room (supply intake):

   A copper earth bus-bar, as described in Clause 10.01.
   A bare 25mm x 3 mm copper conductor from each item of isolated switchgear, connected to the earth busbar.
   A complete earth electrodes system, installed as specified in Clause 10.01, connected by an insulated earth continuity conductor to the earth busbar.
2. In the switch rooms of isolated buildings on the site.
   A similar earthing installation to that described in (1) above.
3. In the event of the K.P.& L. Co. providing an earth terminal at the intake position, the earth electrodes and earth continuity conductors, described in (1) and (2) above, shall be omitted.

Protective Multiple Earthing

Where protective multiple earthing (PME) is provided by the supply undertaking, the earthing lead shall be connected to the consumer's earthing terminal and, together with the neutral conductor of the installation, shall be so arranged that connection to the neutral conductor of the incoming supply can be carried out by the supply undertaking.

The earthing of the installation shall comply with the requirements laid down in the current edition of the I.E.E. Regulations. The earthing system for H.V. supply, described in Clause 10.01 shall be amended for the provision of separate earth electrodes for the H.V. and L.V. sides of the installation.

In addition, provision for earthing the neutral conductor shall be made for each distribution main at the end farthest from the transformer where it is connected to the main switchboard of an independent building or area of the site.

Consumer's Earth

The consumer's earth is deemed to be the earthing terminal at: -

1. The main L.V. switchboard
2. The L.V. switchboard at the intake position of an isolated building.

The consumer's earth will be bonded to the earth bus-bar in the sub-station in an approved manner.

Bonding

All conduit, trunking metal enclosers, the metallic sheathing of cables, the cases and enclosers of switchgear, fuse gear and apparatus of electrical nature in each building shall be so bonded as to be directly connected to the respective consumer's earth. Earthing arrangements and resistance of the earth continuity conductor shall comply with the current edition of the I.E.E. Regulations.

In situations such as bathrooms, kitchens, laundries or any situation where there is exposed metal and socket outlets or fixed appliances are installed, all metal work including hot and cold-water pipes, waste pipes, metal draining boards, the casing of electrical appliances, etc., shall be effectively bonded to the earth continuity conductor of the electrical installation so as to ensure that no difference in electrical potential can arise between these items.

Earthing system shall be tested in accordance with the current edition of the I.E.E. Regulations, and if the minimum impedance required by the I.E.E. Regulations is not obtainable, the Engineer shall be informed.

The Sub-Contractor will be responsible for rectifying any fault in the earth continuity conductor at his own expense.

SECTION 11 INSTALLATION OF LIGHTING FITTINGS

Fixings

Information on the proposed method of fixing each type of lighting fitting is included in Part C of the Specification.

Alignment

Care shall be taken that individual lighting fittings are aligned with the ceiling in all planes and that there is proper alignment in groups or rows of lighting fittings.

Where necessary, cast iron extension rings shall be used to provide alignment between recessed point boxes and finished ceiling levels.

Enclosures

In situations where a lighting fitting is fitted to a ceiling of combustible material, the back plate or other accessory shall be so designed that the connecting cables are completely enclosed.

Earthing of Lighting Fittings

At every lighting point an earthing terminal shall be provided and connected to the earth continuity conductor of the final sub-circuit.

Programme for Erection of Lighting Fittings

The Sub-Contractor shall liaise with the Main Contractor in order that lighting fittings can be erected at such a time that:

i) The work of other trades is not inhibited by the presence of the fittings in-situ.
ii) No damage is caused to finished ceilings or walls
iii) Where fittings are located in selected spaces left open in a suspended ceiling, there is adequate clearance for the fittings, access to suspension points, and clearance for any other services in the ceiling void at that point.

No. claims will be considered for costs of extra works or damages which arise out of the Sub-Contractor's failure to comply with this clause.

SECTION 12- LIGHTING AND SINGLE-PHASE POWER ACCESSORIES

General

The lighting switches, socket outlets, fused spur outlets and similar accessories shall be as specified. The type of accessory to be used in each location is related to the type of wiring system in that area,

In all cases where switches are grouped together, and are connected to the same phase they shall be ganged together and mounted in a multi-gang box and plate.

Where switches control points not readily visible from the switching position the plates shall be engraved to indicate the points controlled.

All switches controlling maintained circuits shall have the word 'MAINTAINED' engraved on the switch plate.

Multi-gang switch boxes, containing switches supplied from different phase shall have integral fixed separators segregating the switches on different phases. Each such segregated compartment shall have a separately fixed metal cover clearly marked 'Danger' 415 volts' and the overall switch plate shall cover the whole.

Special Accessories

Accessories for special purpose such as speed controls for small motors, dimmers, flameproof or sparkless switches, etc., shall be as specified. Where special accessories are supplied as part of the Sub-Contract Works, they shall have a finish to match the other accessories installed in the same area.

SECTION 13- PLANT POWER WIRING

General

Wiring to motor outlets and control outlets in Plant Rooms, Boiler Houses, etc., and to remote motor and control outlets forming part of the Mechanical Engineering Services installation, shall be carried out in one of the wiring systems described in the specification.

The approximate locations of motor and control outlets, distribution boards and control panels are shown on the Contract Drawings. Details of the size and type of cables, and rating of fuse ways or circuit breaker are shown on the diagram of connections.

Precise instructions on the Sub-Contractor's responsibilities for the supply, fixing and connecting of equipment such as isolators, starters, control switches, sensing elements, annunciator panels, etc., are given in the Particular Specification. Where such items of equipment are provided by others it will be their responsibility to issue to the Main Contractor schematic diagrams; diagrams of connections and details of any special requirements, such as the provision and specification of screened cables and to ensure that the equipment is suitable for the electrical characteristics of the supply available.

Power Outlets for Lifts

The outlet for each lift shall terminate on an isolator located at the position shown on the Contract Drawings. The rating of the isolator and the size and type of cables are shown on the diagram of connections. Each outlet shall be wired on a separate circuit using butyl rubber cables in conduit or MICS cables, as indicated on the diagram of connections.

The switch fuse controlling a Firemen's Lift shall be located on the main switchboard, and shall be provided with means for padlocking in the `ON' position.

Where the installation includes a mains failure generator, the supply to the Firemen's Lift shall be connected to the `essential services' section of the main switchboard.

The isolating switch controlling each lift shall disconnect all supplies to the lift hoist and control equipment

SECTION 14- NON-METALLIC CONDUIT

General

Non-metallic conduit shall be best quality new super high impact grade heavy gauge Class `A' rigid PVC unplasticized conduit as manufactured by Ega Africa Ltd., suitable for plain connections.

Manipulation

The conduit shall be bent and formed strictly in accordance with the manufacturer's instructions.

i) Small sizes, i.e., 15mm, 19mm and 25mm, shall be bent cold by inserting the correct size bending spring. It is essential for right angle bends that the conduit isbent past 90^{o} to allow for `spring back'.

ii) Larger sizes of conduit shall be preheated before inserting rubber cord to prevent kinking. Conduit badly formed or bent, or damaged in any way, sh All not be used.

Joint of Plain Conduit

Joints shall be made water-tight by the use of `Egaweld' cement applied with a brush orrag. `Egaweld' shall be applied to the complete circumference of the conduit. Conduit shall be thoroughly cleaned at the ends to ensure a good adhesion to the end fittings. `Egaweld' shall not be permitted to enter into the conduit.

Conduit Fittings

All conduit fittings and accessories including couplers, reducers, stopping plugs, lock nuts and male and female bushes shall be manufactured to B.S. 4607 Part 1, 1970.

Solid tees shall not be used. Solid or inspection elbows or bends or inspection tees shall be used only in exceptional circumstances and then only with the Engineer's approval.

Where it eases the installation of cast-in-situ back entry boxes on the looping system, purpose made bends manufactured by Egatube and comprising a tight bend with a push socket at one end and a threaded socket at the other may be used.

Fixing of Conduit

Conduit shall be installed on the loop-in system and shall be either cast-in-situ in the main concrete structure concealed in chases case in concrete wall, or chases cut in solid partition walls, run in ceiling spaces or in hollow partitions or floors; concealed below the floor screed, whichever shall prove to be the most suitable method of installation for use in the building under construction. Unless it is clearly specified or shown on the drawing, the method of installing conduit shall be subject to the approval of the Engineer.

Sunken conduit run in chases in walls or ceilings shall be fixed by spacer bar saddles fixed not more than 900mm apart.

Surface conduit shall also be fixed 125mm. on both sides of all boxes, the box itself being securely fixed. Where such an arrangement of boxes and saddles would prove to be both unsightly and unnecessary, short lengths of conduit not exceeding 900mm. in length between boxes need not be secured further than by connection to the adjacent boxes. In such cases the Engineer reserves the right to insist upon additional fixings being provided, should he for any reason whatsoever consider additional fixings necessary.

Where two or more lines of conduit run parallel to each other, on the surface of walls, etc., the distance between them shall be not less than 20mm. and conduit shall not cross.

Conduit shall be installed in such a manner as to prevent interference with other services and shall be kept at least 150mm. clear of gas or water pipes, and heat in excess of 68^{o}C.

A means of expansion shall be provided in conduit runs in excess of 6m. without any bend or set, by the use of "Egatube" expansion couplings, which shall also be used at building expansion joints.

Conduit cast-in-situ shall be frequently secured to the steel reinforcement work, with heavy binding wire to prevent movement of the conduit and conduit boxes during the pouring and vibrating of the concrete. Outlet boxes shall be filled with paper to prevent ingress of concrete, and all boxes shall be securely fixed to the shuttering with nails, or by means which shall be visible as a marked-on removal or the shuttering only where these marks can be concealed. Conduit shall be installed after the first grid of steel reinforcement work is securely fixed and all open ends of conduit shall be protected by couplings plugged with a suitable non- metallic stopping plug. The number of right-angle bends in conduit cast in-situ shall not exceed two between boxes. Immediately prior to installing the wiring all conduit and fittings shall be dried and cleaned out by drawing through a cloth swab. Rawl plugs shall be used for fixings to brickwork, self-tapping screws for fixing to aluminium section,

rawl- nuts, spring toggles, gravity toggles or rawl- bolts shall be used for fixing to other materials as approved by the Engineer.

Corners shall be turned by easy bends or sets made in accordance with the manufacturer's instructions without altering the section or splitting the conduit.

Circular Inspection Boxes

Boxes will not be permitted in floors unless approved. Boxes cast-in-situ must face downwards from the ceiling/floor section.

Small standard circular non-metallic conduit boxes, conforming dimensional with B.S.31/1940 with standard circular non-metallic (3mm) lids and nylon fixing screws, shall be provided and fixed at all junctions.

The above circular boxes or equivalent looping boxes shall be provided and securely fixed for all ceiling points. When the conduit is run on the surface, all circular boxes for ceiling points shall be fixed with screws.

Where ceiling roses occur and the ceiling box is recessed below the finished level of the ceiling, suitable extension rings to accommodate the ceiling rose must be provided.

Where ceiling boxes, including extension rings, are flush with the ceiling surface, break joint rings shall be provided to hide the joints.

Where a non-metallic outlet box of thermoplastic material is used for the fixing or suspension of a lighting fitting, care shall be taken to ensure that the temperature of the box does not exceed 60^{O}C and the box shall be fitted with Egafrica steel insert clips.

Stopping Plugs

All spare ways in junction boxes, etc., left for possible future extension shall be fitted with stopping plugs.

Continuity

Where fittings and accessories require earthing, an earth continuity conductor shall be run through the conduit. The earth continuity conductor shall be of copper minimum size 1.0mm^2 and shall be continuous between terminals. Where the earth terminal is formed by a brass screw and washer, `Ross Courtney' terminations shall be used.

All metal boxes shall be equipped with an earth terminal.

Each final sub-circuit that is required to be earthed shall be provided with its own individual earth continuity conductor which shall be run from a terminal on the earth barin the distribution board or consumer's control unit protecting the particular final sub-circuit.

PART B

ELECTRICAL ENGINEERING SERVICES PARTICULAR SPECIFICATION

SECTION 15- PARTICULAR CONDITIONS

Location of Site

The site of the proposed Sub-Contract works shall be in KAKAMEGA, Kenya.

Description of Project

The project shall comprise the Extension of a Clinic block.

Commencement of Works

The Sub-Contractor in submitting his tender shall be deemed to have included for commencing any necessary work on site at such time as will comply with the Main Contractor's Program.

Climatic Conditions

The following climatic conditions apply at the site of the works and all plant, equipment, apparatus, materials and installations shall be suitable for these conditions.

Maximum temperature-	31^{o}C
Minimum temperature-	17^{o}C
Average temperature range-	24^{o}C
Relative humidity range-	50% - 85%
Altitude-	1350 M above sea level
Latitude-	0^{o} 10’03S
Longitude-	34^{o} 27’55E

Rainfall- Extremely heavy at certain periods of the year

The Sub-Contractor shall be deemed to have taken account of the above details in his prices and his planning of the execution of the works.

Unless otherwise stated, all ratings of plant, equipment and apparatus shall be interpreted as site ratings and not sea level or other ratings.

Scope of Sub-Contract Works

The Sub-Contract Works shall comprise the supply, delivery, erection, testing, commissioning and setting to work of the Electrical Engineering Services as detailed in this Specification and accompanying Contract Drawings.

The Sub-Contractor shall include for all apparatus and appliances not particularly called for in this Specification or on the Contract Drawings but which are necessary for the completion and satisfactory functioning of the Sub-Contract Works.
No claims for extra payment shall be accepted from the Sub-Contractor due to his failure to adhere to the above requirements.

It is deemed that if, in the opinion of the Sub-Contractor at the time of tendering, there

existed a discrepancy between the Specification and the Contract Drawings, that the Sub-Contractor clarified this difference with the Engineer before tendering.

The works to be installed under this Sub-Contract shall comprise but not restricted to the following: -

1. K.P.L.C Main incoming electricity supplies.
2. Main Low Voltage Switchboard, sub-main switchboards, distribution boards and consumer units.
3. Electrical distribution systems and works associated with mechanical services.
4. Sub Mains cable and associated sub boards.
5. Lighting and Power Installations.
6. Lightning Protection System.
7. Security Lighting System.
8. Fire Alarm and Detection system.
9. Surveillance system

Ordering

The Sub-Contractor shall order materials from the quantities taken from his own approved working drawings and not from the quantities shown on the Contract Drawings or in the Specification

Builder's Work Requirements

The structural and other provisions allowed for are indicated on the Contract Drawings. If the Tenderer requires any other provisions, he shall mark them in a contrasting colour and submit them as part of his tender.

Statement of Compliance

The Tenderer shall provide as an integral part of his bid, a statement of compliance in which he shall clearly declare any items of the Specification to which his offer does not comply and the alternative which is included in the offer.

Storage of Materials

The Sub-Contractor shall be liable for the cost of any storage accommodation provided specially for their use. No materials shall be stored or stocked on suspended slabs without the prior approval of the Architect.

If the Sub-Contractor does not wish to use the storage space provided by the MainContractor, he may, at the Engineer's discretion, be allowed to store these in his premises. In this case, the Sub-Contractor shall be required to provide a security bond specifically covering these materials intended for use on the Sub-Contract Works.

Labour Camps

Labour camps will not be permitted on the site and the Sub-Contractor shall allow for all transport and other charges in moving labour to and from the site.

Site Visit

The tenderer is recommended to visit the site and shall be deemed to have satisfied himself with regard to the conditions under which the Sub-Contract Works shall have to be carried out.

SECTION 16- INCOMING ELECTRICITY SUPPLIES

General

The electricity supply shall be derived from the Kenya Power and Lighting Company network. The incoming low voltage cables from Transformer will be supplied, installed and connected to the main Low Voltage Switchboard by K.P.L.C. The Main Low Voltage Switchboard shall be supplied and installed under this contract.

A Provisional Sum is included in the appropriate price schedule for the service line charges that will become payable to the Kenya Power and Lighting Company.

The Sub-Contractor shall ascertain the size and type of incoming Low Voltage supply cables that will be installed by the Supply Authority and thereby ensure that the correct glands and terminations for the service cables entries into the Main Low Voltage switchboard are provided.

Earthing

Earthing and bonding shall be carried out to comply with the regulations currently in force and copper tape mesh system shall be installed adjacent to the Kenya Power and Lighting Company supply intake.

The copper tape mesh system has been decided on due to the nature of soil resistivity at the proposed site for construction.

A provisional sum has been included in the appropriate price Schedule for any additional cost that may be necessary to achieve an effective and permanent earthing system.

Provision shall be made for protective multiple earthing at the main meter boards with the final connection between the neutral and the consumers earthing terminal being effected by the Kenya Power and Lighting Company Limited's electrode system.

Metering Power Supplies.

The electricity power supply to the building shall be metered via K.P.L.C.'s maximum demand (kVA) and energy (kWh) meters supplied at 415V and connected at the Main Low Voltage Switchboard by K.P.L.C. The entire building is connected to both supplies from K.P.L.C. and standby generator.

Attendance

The Sub-Contractor shall pay all attendance and liaise fully with Kenya Power and Lighting Company in ensuring satisfactory completion of all their work.

SECTION 17- MAIN L.V. SWITCHBOARD

Scope of Work

This section of the Specification covers the supply, installation, testing and commissioning of the Main Low Voltage Switchboard in accordance with the Contract Drawings and Specification.

Contract Drawings

The Schematic Layout of Main Electrical Distribution for the Building is shown on the contract Drawings.

The Sub-Contractor shall be deemed to have studied all the Contract Drawings and to have allowed for any necessary provisions in this section of the works required thereby.

Low Voltage Switchboard General Requirements

The Low Voltage Switchboard and meter boards shall be self- supporting floor mounted cubicles with front access incorporating the equipment as detailed on the Schematic Layout of Main Electrical Distribution System.

They shall also be supplied complete with all internal connections, voltmeter, instrument selection switches, cable glands or boxes and current transformers for the supply Authority's meters. The switchboard shall have a separate compartment to house the Kenya Power and Lighting Company metering equipment.
The switchboard shall be in accordance with the Specification.
The main Low Voltage Switchboard shall be capable of extension and the busbar section shall allow for this provision. The Engineer reserves the right to make such variations to the layout and dimensions of the switchboards as are deemed necessary to suit site conditions.
The arrangement of these switchboards shall be capable of accommodating power supply connection to all part of the buildings.

Fuse Switches

The fuse switches shall be as shown on Schematic Layout of Main Electrical Distribution and shall be as manufactured by Merlin Gerin to BS 5419 or equal and approved. The fuses witched shall be provided complete with Class Q1 H.R.C. cartridge fuse links and three spare fuse links of each size fuse.

M.C.C.B.'s

Moulded case circuit breakers (M.C.C. B’s) of fault breaking capacity of over 50KAshall be installed and shall be of Merlin Gerin manufacture (or equal and approved) unless otherwise stated.

These M.C.C. Bs shall be as shown on Schematic Layout of Main Electrical Distribution system. Where switches or isolators are specified, these shall be moulded case switches and shall be capable of interrupting currents up to 10 times the rated current. They shall be as manufactured by Merlin Gerin or equal and approved.

SECTION 18- ELECTRICAL DISTRIBUTION SYSTEM

Scope of Work

This section of the Specification covers supply, installation, connection, testing and commissioning of the Sub-main cables, consumer units and distribution boards in accordance with the Contract Drawings and Specification.

Sub-main Cables

The sub-main cables and methods of installation shall be as shown on the Schematic and Layout Drawings and/or as specified in this Specification. The cables shall be as manufactured by BICC, East African Cables Ltd. or other equal and approved.

Distribution Boards and Consumer Units

The distribution boards and consumer units shall conform with the requirements of this Specification and shall be as manufactured by M/S Square D. Ltd., ABB, Schneider or other equal and approved.

Schematic of individual distribution boards and consumer units have been prepared and the Sub-Contractor should note that power boards consist of singlephase and three phase sub-circuits ways.

All neutral conductors in a single-phase distribution board shall be connected in the same circuit sequence as its phase conductor, i.e., phase wire No. 1 connected to No. 1 terminal on the neutral bar, etc.

In addition to this requirement for every distribution board each phase and neutral conductor shall have clipped to its sheath in the distribution board a clip-on numbered tag corresponding to its circuit number. The tag shall be of a type manufacture by M/S. Critchley Brothers Ltd or equal and approved type. All circuit numbers shall commence from left to right.

Electrical Services Associated with Mechanical Services Installation

Scope of Work

Work to be carried out under this section includes the supply, installation, wiring to and connection to the mechanical equipment power supply isolator or its control panel. The supply, installation, testing and commissioning of the equipment control panel, wiring between control pane; and equipment shall be by the Mechanical Equipment sub-contractor.

The electrical services shall be associated with the following mechanical equipment: -

a) Domestic water pumps (duty and standby) and the associated control panel.
b) Rainwater pumps (duty and Standby) and the associated control panel.
c) Fuel Interceptor pump (petrol interceptor pumps) (duty and standby) and associated control panel.
d) Sprinkler pumps (duty and standby) and associated control panel.
e) Wet Riser Pumps (duty and standby) and associated control panel.
f) Waste water treatment plant pumps (duty and Standby) and associated control panel.
g) Hose reel pumps (duty and Standby) and associated control panel.
h) Domestic/Rain water transfer pumps (duty and standby and the associated control panel.
i) Air conditioning and Mechanical ventilation services and their associated control panels.

The Electrical Services shall also be associated with the provision of power supply up to the isolator or control panel of the following specialised equipment: -

j) Electric passenger lifts and associated control panel.
k) Electric Bullion Hoist and associated control panel.

l) ELV equipment.
m) Surveillance equipment
n) Fire protection system

Fuse Switches (Loose Equipment)

Fuse switches shall conform with the requirements as detailed.

Isolator (Loose Equipment)

Isolators shall conform with the requirements detailed in this specification but with exception that solid links shall be suitably sized to carry the full rated current of the respective isolators. Unless otherwise stated, isolators shall be designed for load making/load breaking duties.

Cable Tray

Sizes, proposed fixing arrangements and routes of the galvanised cable tray have been detailed on the layout drawings. The cable tray shall conform with the requirements as detailed

Cable Schedule

The sub-contractor shall prepare a suitable cable route and schedule for all major Low Voltage cables within the Facility. The schedule shall be submitted with working drawings after contracts have been exchanged. During the course of installation, each major cable shall be suitably identified along its route by traffolite cable markers, in accordance with the Sub-Contractor's cable schedule.

Rising Main Bus bars

There shall be for sub- boards for each block and additional board for mechanical loads.

Phase colours of the incoming cables to each board shall clearly be marked and the current ratings shall comply with B.S. 159 for a temperature rise of 50^0C.
All connections to the boards shall be made by means of bolted type clamps designed to ensure maximum conductivity at all times, and drilling of bus-bars in the boards shall never be permitted.

Fire Barriers

Where the rising bus bar systems, vertical cable tray installations, vertical trunking installations pass through floors, a barrier of fire resisting materials shall be incorporated around the installations at each floor level to prevent the possible spread of fire between floors.
The fire barrier shall be foil clad, wire mesh reinforced 5mm thick fire barrier curtain, complete with metal fixing strips as RBC Envirograf 1983- 1993 tested to BS 476-part 20/22 or equal and approved.

Power Factor Correction Equipment

Scope of Works

This section of the specification covers the supply, installations, connections, testing and commissioning of the power factor correction equipment and to ensure that at the peak of the demand the power factor shall be maintained at 0.95.

4.11.0 The anticipated maximum demand for the building is 600 KVA. The KVA rating of the capacitors is provisionally taken as 200 KVAr switched in six steps of 50 KVAr 50 KVAr, 25 KVAr, 25 KVAr, 25 KVAr, 25 KVAr each.

The power factor correction equipment shall be in separate free standing steel cabinet and shall be interconnected with the main L.V. Switchboard. The equipment shall be

installed in the switchroom.
The power factor correction equipment shall be dry resin encapsulated, shall have low losses and shall be self-healing. The capacitors shall be delta connected.
The power factor relay shall be cyclic type with built in power factor meter.
The capacitors shall incorporate automatically switching facilities to vary the capacitors in circuit depending on load variations.

SECTION 19 LIGHTING AND POWER INSTALLATION

Scope of Work

This section of the Specification covers supply, installation, connection, testing and commissioning of the lighting and single-phase power installation in accordance with the Contract Drawings and Specification.

Wiring System

Final sub-circuit wiring shall be carried out using single core PVC insulated copper cables enclosed in a system of high impact heavy gauge PVC conduit. The conduits shall be embedded in the fabric of the building or run surface on the roof members.
All single phase 13A socket outlets shall be wired using 30A ring main circuit system or 20A radial circuits as shown on the Contract Drawings.
An insulated earth continuity conductor shall be enclosed in all non- metallic conduits.

Lighting Luminaries

Lighting Luminaries shall be of the type and manufacture as detailed in this Specification.
All luminaries shall be supplied and installed complete with lamps and tubes of the wattage specified.
All fluorescent tubes shall be warm white as manufactured by Thorn Lighting or other equal and approved and shall conform to B.S. 1853.

Lighting Switches and Socket Outlets

In general areas Lighting switches shall be flush mounted, single pole, 15A rating, rocker operated grid switches with ivory moulded plastic cover plates.
Socket outlets and spur units shall be flush mounted 13 Amp. rating with rocker operated switches and ivory plastic moulded cover plates. All lighting switches and socket outlets shall be as manufactured by M/S Crabtree Ltd., MK. Electric Ltd., Nettle Accessories Ltd. or other equal and approved.

Cooker Control Units

Cooker control units shall be flush mounting, with 45 Amp. D.P. switch, 13 Amp switched socket and neon indicators. An appropriate connector block shall be installed at low level.
The cooker control units shall comply fully with B.S 4177and shall have ivory plastic cover plates.

Connector Boxes

Connector boxes for cookers and water heaters shall be flush mounted with moulded cover plates. The connector boxes shall be supplied complete with terminal blocks and cords grips, terminals shall be capable of accommodating up2 No. 10mm² stranded copper conductors.

Ramp Lighting

The work under this section includes the supply and installation of the ramp lighting as shown on the Contract Drawings. The ramp lights shall comprise of18W PL lamp in 300mm dia. polycarbonate post top lanterns as specified on the contract drawings or equal and approved.
The ramp light shall be on top of the ramp parapet wall.

External lighting

The works under this section includes the supply and installation of the external security lighting and floodlighting of the building.
The external security lighting comprises of 18W PL lamps fitted in 300mm diameter white polycarbonate spheres suitable for external wall mounting. The security luminaries shall be controlled via photoelectric cell mounted on roof. The photo electric cell shall detect darkness in the evening and then energises the contactor coil to switch on power supply to the external luminaries via the respective distribution boards located in the riser ducts.
The car park lighting shall be controlled by photoelectric cells. Power supply to the car park lighting shall be derived from the consumer unit at the Gate House.

Adaptor Boxes

All adaptor boxes draw-in boxes, conduit boxes, lighting points boxes, boxes for sockets, telephone outlets, television outlets, camera boxes etc. shall form part of conduit layout installations.

Sub-Main Cables

All main and sub-main cables shall be supplied complete with glands, lugs etc.

SECTION 20- LIGHTNING PROTECTION SYSTEM

Scope of Work

Under this section of the specification, the Sub-Contractor shall supply, deliver, install and test a lightning protection system as shown on the Contract Drawings.

The Sub-Contractor shall include for the supply and installation of the roof tapes network, all bonding to down conductors and other metal works and earthing as indicated on the appropriate drawings.

Description of Installation

The installation is based on the recommendation of Kenya Bureau of Standards and I.E.C 62561 and shall comprise a network of 25mm x 3mm flat copper roof tapes running on the ridges and parapet wall and bonded to a selected 20mm diameter reinforced steel (lengths welded to form a sound and effective electrical continuity down to the concrete foundation bases). At the basement level, the down conductors shall be bonded to a system of effective earthing comprising of earth mats as specified herein.

Bonding of Roof Copper Tapes

The roof copper tapes shall be fixed onto the roof ridges; parapet wall etc by means of special holdfasts.

All roof tanks and other metal works projecting from the roof shall be bonded to the roof copper tapes.

Earthing of Lightning Protection System

Earthing of the lightning protection system shall be effected by bonding 20mmdiameter reinforced steel down conductor to 25mm x 3mm earth matt constructed from the 25mm x 3mm copper tape as detailed in the contract drawings.

The earth matt shall be placed in an earth pit 1200mm x 1200mm x 800mm deep. The earth matt shall then be filled with red soil mixed with charcoal in the ratio of3:1. The earth pit shall then be covered by concrete slab.

The periodical testing of the earthing for lightning protection system shall be conducted at the

earth testing point in the basement column and as clearly shown on the contract drawings.

The expected earthing test result for this specification shall never be above 5 ohms.

Earth Continuity Test for Down Conductors

It will be the responsibility of the Electrical Sub-Contractor to ensure that the 20mm reinforced steel down conductor is properly welded to guarantee earth continuity from roof to foundation level.

The electrical sub-contractor shall witness and be satisfied that concrete pouring to the columns with lightning protection down conductors does not affect the welded points.

SECTION 21- TELEPHONE/COMMUNICATION DISTRIBUTION SYSTEM

Scope of Works

This section of the specification covers the supply and installation of trunkings, conduits and cable trays for the distribution of telephone system, communication system like Television network via satellite dish on roof all in accordance with the Contract Drawings and specification.

The supply and installation of the telephone equipment, communication equipment

- T.V. and C.C.T.V. does not form part of this sub-contract.

Distribution System

At the ground floor level, the sub-contractor shall supply and install a cable tray for the installation of the main incoming line from the main point of entry into the building to the proposed server room.

The sub-contractor shall also provide and install cable tray from telecom closets to riser duct and all the length of riser duct up to highest floor ceiling.

The electrical sub-contractor shall provide conduit interconnections between each cabinet box and office floor trunkings. Details of the office floor trunkings are shown on the Drawings and the trunking shall be 3- compartment with a separate compartment for telephone cables. The electrical sub-contractor shall provide and install an accessory box and data outlet plates (plug-in type as specified) for connection by other.

Outlet plates shall be as manufactured by M/s. Crabtree Ltd, MK Electric Ltd or other equal and approved. Draw wires shall be installed in all conduits to facilitate wiring by others.

A metallic trunking 200mm x 50mm 3 - compartment shall be provided and installed by electrical sub-contractor in the same ICT riser duct from ground floor to highest floor for the accommodation of communication cables, T.V. cables and Fire Alarm and Detection system cables.

Wiring System

The Sub-Contractor shall supply and install lead-in pipe of diameter 100mm for the main incoming last mile cables

The Sub-Contractor shall allow for all conduit installation from the cabinet to the data outlet position. The final wiring from the distribution case to each telephone outlet shall be carried out by others.

The minimum size of conduit shall be 25mm diameter and not more than 3 data outlets shall

be fed by each 25mm diameter conduit.

At each telephone outlet position the sub-contractor shall supply and install an accessory box and outlet plate for connection by others. Each outlet plate shall comprise of jack plug mounted on an ivory plastic moulded cover plate to match the other accessories used.

Outlet plates shall be as manufactured by M/S Crabtree Ltd., M.K. Electric Ltd., Nettle Accessories Ltd., or equal and approved.

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GENERAL MECHANICAL SPECIFICATION

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.

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.

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

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.

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.

Site Supervision

The Sub-contractor shall ensure that there is an English-speaking supervisor on the site at all times during normal working hours.

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

Testing

General

The Sub-contractor's attention is drawn to Part 'C' Clause 1.38 of the "Preliminaries and General Conditions".

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.

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 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.

Pressure Testing

All pipe work installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and the Sub-contractor shall give 48 hours' notice to the Engineer of his intention to carry out such tests.
Any pipe work that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Sub-contractor and the specified tests shall then be applied.
The Sub-contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

shop drawings

Before manufacture or Fabrication is commenced the contractor shall submit Two copies of detailed drawings of all water tanks, fire hose reel pump, water booster pump and any other equipment 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 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.

Colour Coding

Unless stated otherwise in the Particular Specification all pipe work shall be color coded in accordance with the latest edition of B.S 1710 and to the approval of the Engineer or Architect.

Welding

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

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.

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.

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.

GENERAL SPECIFICATIONS FOR PLUMBING AND DRAINAGE INSTALLATION WORK

PARTICULAR PLUMBING AND DRAINAGE SPECIFICATIONS GENERAL

SITE LOCATION
The site of the proposed works is at **Masinde Muliro University of Science and Technology main campus, along Kakamega – Webuye road, approximately 1.5km from Kakamega Town.**

SCOPE OF WORKS
The works to be carried out under this sub-contract comprise supply, installation, testing and commissioning of the following: -
a) Plumbing and drainage Installation works

BROCHURES FOR DEVICES
For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer's brochures detailing technical literature and specifications where applicable
This section specifies the general requirements for plant, equipment and materials forming part of the plumbing and drainage installations.

MATERIALS AND STANDARDS

Pipework and fittings

Pipework materials are to be used as follows:

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.

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.

CPVC piping
PVC (polyvinyl chloride) that has been chlorinated via a free radical chlorination reaction. CPVC is produced by adding chlorine to PVC in a water slurry or fluidized bed chlorination process. The chlorination reaction is initiated by ultraviolet light. The chlorinated PVC is compounded with ingredients necessary for the desired properties for further processing. The chlorine added to PVC gives CPVC higher temperature performance and improved fire and corrosion resistance.

Should conform to ASTM D2846 standard and ASTM F441 Standard for chlorinated poly vinyl chloride pipes.
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.

a) **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.

b) **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 j

c) **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.

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.

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 Little shampton, Sussex, England. The trade name for traps manufactured by this company is 'Grevak'.

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

The support spacing for vertical runs shall not exceed one and a half times the distances given for horizontal runs.

a) 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 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.

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. They shall be as described in the bill of quantities.

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.

INSTALLATION

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.

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 another operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach 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

TESTING AND INSPECTION

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 ten hours 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

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:

1. Apply a coating of suitable filler until the canvas weave disappears and allow to dry.
2. Apply two coats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

All lagging for cold and hot water pipes erected in crawl ways, ducts and above
false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310 respectively to the approval of the Engineer.

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power-driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests.

The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure

STERILISATION OF COLD-WATER SYSTEM

All water distribution system shall be thoroughly sterilised in accordance with the requirements of B.S.Code of Practice 301, Clause 409 and to the approval of the Engineer

PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER BOOSTED HOSE REEL SYSTEM, HOSE REEL, AND FIRE HYDRANT INSTALLATIONS

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.

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.

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
h) 24.1 bar (350psi.).
i) The number of British Standard 'B.S' 1382 or B.S. 5423: 1977.

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
b) The words "Re-charge immediately after use".
c) Instructions for periodic checking.
d) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
e) 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: 1972and 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.

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 23/4 X 8TPI female thread.Head cap: to be plastic moulding acetyl resin
CO2 Cylinder: to be 75gm P.V.C coated.
Internal Finish: to be polythene lining on phosphate coating.
External finish: to be phosphated - One coat primer paint and one coat stove enamel
B.S. 381C.

FIRE BLANKET

The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fireproof 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.

BOOSTED HOSE REEL SYSTEM

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.

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 5M3/hr 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.

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.

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 or 45 meters long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome - plated globe valve to B.S1010 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.

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 pipework and all associated fittings shall be in approved colour for fire fittings.

Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings, welded or seamless fittings conforming to B.S. 1740or 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.

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.

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

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.

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.

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.

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.

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.

Signage-Fire Instruction /Fire Exit 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 firefighting 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.

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.

Hose Reel Label

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

a) Lettering IN RED COLOUR of not less than 50mm in height.
b) 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.

The Dry Riser Installation

Definition

Dry riser installation is a system where a pipe is installed vertically through a building with and inlet breeching provided at a street level through which the fire brigade can pump water.

Installation

The dry riser is installed with Fire Brigade Breeching inlet installed at street level in front of the building at a position where fire brigade can access and pump water into the building. Landing valves are then installed on each floor above the ground level to which the fire brigade can attach firefighting hoses.

Landing Valves

The Hydrant outlets shall comply with the requirements of C.P 5306 Part 1:1976 and B.S 5041 Part 1. The hydrant Riser outlets shall be 2No minimum per floor including the roof and shall be mounted with their centre line between 910mm and 1060mm above finished floor level positioned at the entry lobby on each floor.

Fire Brigade Breeching Inlets

One of the Brigade Breeching inlets shall consist of four (4No.) 64mm internal diameter instantaneous male coupling for connection to the fire brigade pumps and other two shall consist of two (2No.) 64mm internal diameter instantaneous male coupling.

The breeching inlet shall incorporate a 100mm diameter flanged connection to the 100mm dry riser mains. The breeching inlet shall be located 1000mm to the centre line of the box above ground level.

The breeching inlet shall be enclosed in a galvanized mild steel cabinet of suitable dimensions to contain all visible pipe work. A 7.5mm thick wired glass front shall be provided with 50mm high, red lettering, **DRY RISER BREECHING CONNECTOR.** The reminder of the box is to be finished in fire red enamel paint.

Pipework

The pipe work fittings shall be wrought steel pipe fittings welded or seamless fittings conforming to B.S 1740Part 1971 or malleable iron fittings to B.S 193.

All changes in direction will be standard bends or long radius fittings. **No elbows will be permitted.**

Flanges

The flanges shall comply with B.S 4504:1969. All flanges shall comply with a nominal Pressure Rating of 16bars and shall be of either grey cast iron or steel.

Gaskets

The gaskets for use with flanges to B.S 4504: 1969 shall comply with B.S 4865 Part 1: 1972 for pressure up to64 bars.

Air Relief Valves

The dry riser shall terminate 1M above the roof landing valve with an air relief valve. The valve construction shall be of iron Grade E conforming to B.S 1452. Float Guide and Seat
Ring shall be of A.B.S plastic with seal ring of moulded rubber, Maximum working pressure of the valve is to be 16 bar.

Non-Return Valves

The non-return valves up to and including 80mm diameter shall conform to B.S 5153:1974 with flanges to B.S 4504 PN 16. The valves shall be of cast iron construction with gunmetal seat and disc with spring of phosphor bronze.
Non return valves exceeding 80mm diameter and up to 300mm diameter shall be conform to B.S 5153:1974with flanges to B.S 4504 PN 16. The valve shall be is Cast Iron Construction with Gunmetal seat to B.S 1400.

Gate Valves

The gate valves up to and including 80mm shall be non-rising stem and wedge disc to B.S. 1952:1964 (B.S 5154:1974) with screwed threads to B.S.21(KS ISO 7 – 1) taper thread. The valves shall be of high-grade bronze construction.
Gate valves exceeding 80mm and up to 300mm shall be to B.S 5163 with flanges to B.S 4504 PN 16. The valve is to be double flanged cast iron wedge gate valve for water works purposes with cast iron body to B.S 1452 GRADE 14 with rubber covered cast iron gate. The stem is to be of Forged Stainless Steel to B.S970 with cast iron hand wheel.

Sleeves

Where Pipework pass through walls or floors or ceiling a sleeve shall be provided one diameter larger than the diameter of the pipe the space between to be the packed with mineral wool, to the Engineers approval.

Floor and Ceiling Plates

Where pipes pass through floors, walls and ceilings, floor, wall and ceilings plates shall be secured around the pipe. The plated shall be of stainless-steel construction and will serve no other purpose than to present a neat finish to the exposed installations.

Earthing

The dry riser shall be electrically earthed by a direct earth connection. The installation of the earthing to be carried out by the electrical Sub-Contractor

Finish Painting

Upon completion, testing and commissioning of the dry rise installation the pipe work shall be primed and finish painted with 2No. Coats of paint by the Sub-Contractor to the Engineer’s requirements.

Testing and Commissioning

The installation is to be tested to one and half times the working pressure of the installation, all to the approval of the Engineer. The pressure shall be maintained for about 1 hour ensuring that there is no change in pressure is observed

Canvas Hose

The canvas hose shall be 65mm diameter 30m long designed for a bursting pressure of 34 bars. The canvas hose shall have attached instantaneous hose coupling, branch pipes and nozzle to B.S 336: 1965.

Hose Cradle

The hose cradle shall be a high-quality fitting designed for use in public buildings. The cradle **shall be madein aluminium** throughout and shall be supplied with a wall bracket and the finish shall be polished or chromeplated

Fire Hydrant Fire Hydrant Details

Definition

The fire hydrant is a system which is installed along the water mains to used as a means of providing water to the fire brigades through the connection of the hose from a standpipe.

Installation

The fire hydrants are installed along the water mains with the first hydrant at a location

which is not more than60 m from the entry of any building and they should not be more than 120 m apart.

Hydrant body

The body of the hydrant shall be made of grey cast iron complying with the requirements of BS 1452 having a tensile strength not less than that given for grade 14.

Hydrant Valve

The valve shall be faced with suitable resilient material. The threaded part of the valve, which engages with the spindle, shall be of bronze.

Body seating for the valves shall be of copper alloy complying with the requirements of BS 1400 (KS 06 – 744– 1:1991) or high tensile brass complying with the requirements of BS 2872 or BS 2874. Turning the spindle cap in a clockwise direction when viewed from above shall close valves and the direction of opening shall be permanently marked on the gland.

Spindle & Spindle Cap

The spindle note shall be either of the same material as the spindle, or of copper alloy complying with the requirements of BS 1400 (KS 06 – 744 – 1:1991). It shall have a squared top formed to receive either a cast iron spindle cap.

The spindle shall be made of copper alloy complying with the requirements of BS 2874 (KS 06 – 744 – 1:1991), and it shall have a threaded machined of trapezoidal form. The spindle cap shall be of a cast iron secured to the spindle by on M12 hexagon socket set screw conforming to BS 4168.

Hydrant Outlet

The outlet flange of the hydrant shall have above nominal diameter 65mm, and shall be fitted with a screwed outlet – Both flanges shall be 50 mm conforming to BS 4504: Part 1: 1969

The screwed outlet shall be provided with a cap of cast iron or other suitable material. The cap shall cover the outlet thread completely and shall be attached to the hydrant by a chain The distance between the axis of the outlet and the nearest point on the spindle fitting shall be not less than 100mm.

The screwed outlet shall be made of Copper alloy to BS 1400 (KS 06 – 744 – 1:1991), or Copper alloy to BS2872, or Suitable Spheroidal graphite iron to BS 2789 protected against corrosion accordance with CP 2008.

Drain Boss

Each shall be provided with a suitable drain boss on the outlet side. This shall be located at the lowest practical point which will permit the filling of self-operating a drilled drip plug.

Jointing

The hydrants shall have machined joint faces throughout and the fitting of adjoining parts shall be such as to make sound joints, corresponding parts of hydrants of the same design and manufacture shall be interchangeable.

Hydrant coating

The hydrant shall be coated in accordance to BS. 4164.

Surface Box

The clear opening of hydrant surface boxes at ground level shall not be less than 250mm x 380mm.The depth of frame shall normally be:

a. For boxes located on footpaths: 100mm
b. For boxes located in roads: 125mm

Marking

Surface box covers shall be clearly marked by having the words **'FIRE HYDRANT'** in letter not less than 30mm high, or the initials **'FH'** in letters not less than 75mm high cost into the cover.

Surface Box Covers & Frames

The surface box frames and covers shall be graded in accordance with BS 497:1967 and shall meet the loading test requirement also given in BS 497

Standpipes

One end of these shall have internal threads to couple with the 80mm diameter external threads of the screw

down type or above ground fire Hydrant (BS 750 type 2 hydrants) outlet. It shall have 65mm diameter internal threads to couple with the interconnect or hose of the pump set

Hose Pipe

Each cotton synthetic fibre rubberized fire hosepipe to be at least 30 metres long with 65mm diameter female instantaneous type connector complete with nozzle.

Testing

The hydrants shall be deemed to have undergone the necessary hydrostatic and flow test at time of manufacture. Necessary test certificates from the manufacturer shall be needed. The test, to conform to BS 750: 1977:

SECTION VIII - BILLS OF QUANTITIES

A. Notes and Sample Items for Preparing a Bill of Quantities

1. These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the Tender Documents. Priced Bills of Quantities shall be part and parcel of the Contract Documents.

2. The objectives and purpose of the Bills of Quantities are to provide sufficient information on the specifications, descriptions and quantities of Works to be performed to enable tenders to be prepared efficiently and accurately and when a contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed. In order to attain these objectives, Works should be itemized in the Bill of Quantities insufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and clear as possible.

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

a) Preambles
b) Preliminary items
c) Work Items
c) Daywork Schedule; and
d) Provisional items
e) Summary.

4. NOTES TO PREPARING PREAMBLES

4.1 The Preambles should include only those items that constitute the cost of the works but would not be priced separately as they are expected to be included in the unit prices. Care should be taken to ensure that these items are not are petition of the conditions of contract. The Preambles should indicate the inclusiveness of the unit prices and should state the methods of measurement that have been adopted in the preparation of the Bill of Quantities, that are to be used for the measurement of any part of the Works. The units of measurement and abbreviations should be defined and any mandatory national units defined and described. The methods of and procedure for re- measurement should be described in the Preambles.

4.2 Units of Measurement - The following units of measurement and abbreviations shall be used, unless other national units are mandatory in Kenya.

Unit	Abbreviation	Unit	Abbreviation
cubic meter	m^3 *or* cu m	millimetre	mm
hectare	ha	month	mon
hour	h	number	nr or No.
kilogram	kg	square meter	m^2 *or* sq m
lump sum	ls	square millimetre	mm^2 *or* sq mm
meter	m	week	wk
metric ton	t		

4.3 The Bills of Quantities shall be read in conjunction with the Instructions to Tenders, General and Special Conditions of Contract, Technical Specifications, and Drawings.

4.4. The quantities given in the Bills of Quantities are estimated and partly provisional and are given to

provide a common basis for tendering. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Architect and valued at the rates and prices tender in the priced

Bills of Quantities, where applicable, and otherwise at such rates and prices as the Architect may fix within the terms of the Contract.

4.5. The rates and prices tender in the priced Bills of Quantities shall, except in so far as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

4.6. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

4.7. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bills of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

4.8. General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bills of Quantities. References to the relevant sections of the Contract documents shall be made before entering prices against each item in the priced Bills of Quantities.

4.9 Provisional Sums and contingency sums included and so designated in the Bills of Quantities shall be expended in whole or in part at the direction and discretion of the Architect in accordance with Sub-Clause13.5 and Clause 13.6 of the General Conditions of contract.

4.10 In preparing the Bills of Quantities, notes should be removed as they are intended to guide the person preparing the Tender Documents. The Contractor must allow in his rates for any costs associated with and complying with the requirements in the Preambles.

4.11 Should a tenderer/contractor not price any item in any section of the Bills of Quantities including Preliminary items, it will be assumed that he/she has spread its cost in other areas that he/she will have priced. Therefore, the item or items will be executed without any additional costs or without being treated like variations.

5. NOTES ON PREPARING BILLS OF QUANTITIES

5.1 The Preliminary Items should be limited to tangible items that should be priced by the tenderer, are identifiable and can be priced separately and included in the interim valuations precisely. Such items may include such items as site office, notice boards, and other temporary works, otherwise items such as security for the Works which are primarily part of the Contractor's obligations should be included in the Contractor's rates.

5.2 The work items in the Bills of Quantities should be grouped into sections to distinguish between those parts of the Works which by nature, location, access, timing, or any other special characteristics may give rise to different methods of construction, or phasing of the Works, or considerations of cost. Such groups could be ground excavations, structures, external works, services, etc. General items common to all parts of the Works may be grouped as a separate section in the Bill of Quantities.

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

5.4 Where the measured items a redeemed not to be exact because of the likelihood that the scope can change during the execution of the works, such items could be subject to re-measurement, the word **"provisional"** should be used to identify such cases. Where whole sections of the work items fall in this class, for example foundations, they should be labelled "Provisional Quantities" or "Provisional Items" so that the Tenderer/Contractor is advised up front that such items are subject to re-measurement to done before such work is cover-up.

5.5 All items that have not been measured and therefore not subject tot enders pricing should be listed in

the Bills of Quantities as **Provisional Sums** for particular item or class of Work, which may be subject to a nominated subcontract or separate measurements at a later date during the execution of the works. For example, if it is deemed not possible to measure electrical works before going to tender because detail designs are not ready, a provisional sum can be allowed in the Bills of Quantities for "Installation of Electrical Works" to be executed later when actual design details are completed. To the extent not covered above, there should be in the Bills of Quantities a general provision for physical and financial contingencies made as a "Provisional Sum for

Contingencies" and "Provisional Sum for Fluctuations". The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises.

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

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

i) A list of the various classes of labour, and materials for which basic.

ii) Daywork rates and prices for various categories of labour are to be inserted by the tenderer, together with a statement of the conditions under which the Contractor will be paid for Work executed on a Daywork basis.

iii) A percentage to be entered by the tenderer against each basic Day work item.

iv) Subtotal amount for labour, materials and plant representing the Contractor's profit, overheads, supervision and other charges.

5.8 The Summary should contain a tabulation of the separate parts of the Bills of Quantities carried forward, with provisional sums for Daywork, Provisional sums and Contingencies, and provision for Total Costing. The last line should allow for tenderer to indicate any discounts before arriving at a total cost carried forward to the Form of Tender.

BILLS OF QUANTITIES

(a) Preambles

1. The method of measurement of completed work for payment shall be in accordance with the metric standard units measurements and as stated page 60 above of this document.

2. The Buildings are located with in Masinde Muliro University of Science and Technology- Main Campus. Access to the site shall be through The University Main gate on the right along Kakamega Webuye Road,

   Which is an existing public road. Any damage caused to the surfaces of this road shall be made good at the Contractor's expense. The Contractor shall visit the site and acquaint itself with its nature and position, the nature of the ground, substrata and other local conditions, positions of existing power, water and other services, access roads or any other limitations that might affect his cost or progress. No claim for extras shall be considered on account of lack of knowledge in this respect.

3. The Contractor shall obtain the Architect's approval on the siting of all temporary buildings, spoil heaps, temporary access path, and storage of materials. The Contractor shall also obtain the Architect approval and direction regarding the use of any materials found on the Site.

4. The drawings used in the preparation of these Bills of Quantities can be inspected at the offices of the Procuring Entity or Procuring Entity's Representative during normal working hours. Two sets of the Working Drawings shall be provided to the contractor, but additional copies shall be provided at a cost to be determined by the Engineer.

5. The Contractor shall allow for the payment of all bank charges in connection with the procurement of Bank Guarantees and stamp charges in connection with this contract Agreement.

6. The Contractor shall carry out the various sections of the Works in such an order as the Architect May direct. The Procuring Entity reserves the right to occupy the Works by sections on completion provided that such occupation is considered to be both practical and reasonable and will not interfere with the Works. The Contractor shall allow any costs associated with such occupation.
7. The main Contractor will be fully responsible for paying his Sub-Contractor, but the Procuring Entity reserves the right in very exceptional circumstances to make such payments direct in the interests of the project where the completion thereof might be jeopardized by any dispute or vicariousness between the Contractor and the Sub- Contractor involve.
8. The Contractor shall complete and deliver the Works in the period inserted in the Form of Tender as his time for completion of the Works from the date for Possession, to be agreed with the Engineer. The Contract Period is presumed to have been calculated making due allowance for seasonal inclement weather conditions. No claim for extension of time due to the normal inclement weather for this area shall be entertained.

9. The Contractor shall, upon receiving instructions to proceed with the Works, draw up a Programme and Progress Chart setting out the order in which the Works are to be carried out, with the appropriate dates there of. This Chart shall be agreed with the Architect and no deviation from the order set out in it will be permitted without the written consent of the Engineer. The Contractor will be responsible for arranging the above programme with all his sub-Contractors and Specialties. The Contractor shall allow in his rates for carrying out this exercise, and for updating it as required.

10. The Contractor shall submit to the Architect on the first day of each week or such longer period as the Architect from time to time direct, a Progress Report and any information for the proceeding period, showing the progress during the period and the up-to-date cumulative progression all important items of each section or portion of the Works.

11. The Contractor shall arrange for photographs of the Site to be taken by a professional photographer approved by the Engineer. The Photographs shall provide a record of the Site and adjacent are as prior to the commencement of the Works and shall cover such portion of the works in progress and

completion as the Architect shall direct. All prints shall be full plate size, unmounted, and marked on the reverse side with the date of exposure, identification reference and brief description. The copyright of all photographs shall be vested in the Procuring Entity. The negatives and four prints from each negative shall be delivered to the Architect within two weeks of exposure.

12. Figured dimensions are to be followed in preference to dimensions scaled from the Drawings, but whenever possible dimensions are to be taken on the Site or from the buildings. Before any work is commenced by Sub- Contractors or Specialist Firms, dimensions must be checked on the site comparable dimensions shown on the drawings. The Contractor shall be responsible for the accuracy of such dimensions.

13. Prior to commencement of any work the Contractor is to ascertain from the relevant Authorities the exact position, depth and level of all existing electric cables, waterpipes or other services in the area and he shall make whatever provisions may be required by the Authorities concerned for the support and protection of such services. Any damage or disturbance caused to any services shall be reported immediately to the Architect and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense. Where appropriate the Contractor shall open up the ground in advance of the main work by hand digging, if necessary, to locate precisely the position and details of the services which are likely to affect his operations.

14. The Contractor shall include in his prices for the transport of materials, workmen, etc./, to and from the site of the proposed works, at such hours and by such route as are permitted by the Authorities.

15. The Contractor will be required to make good, at his own expense and damage he may cause to the present road surface and pavements within or beyond the boundary of the Site, during the period of the works. All existing paths, storm water channels, etc., that may be destroyed or damaged during the progress of the Works shall be reinstated by the Contractor to the satisfaction of the Engineer.

16. The Contractor is to allow for complying with all instructions and regulations of the Police Authorities.

17. All water shall be fresh, clean and pure, free from earthly, vegetable or organic matter, acid or alkaline substance in solution. The Contractor shall provide at his own risk and cost all water for use in connection with the Works, (including works of subcontractors). If need be, he shall make arrangements with the Local Water Authority for the installation of a separate meter for all water used by him throughout the Contract and pay all cost and fees in connection therewith. He shall also provide temporary storage tanks and tubing, etc., as may be necessary, and clear away at completion.

18. The Contractor shall provide all artificial lighting and power for his own use on the Works, (including Sub – Contractor's) including all temporary connections, wiring, fittings, etc., and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection there with.

19. 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 time to the superintendence of the works. (Including works of sub – contractors). Such Agent or Representative shall receive on behalf of the Contractor directions and instruction from the Engineer, and such directions and instructions shall be deemed to be given to the contractor in accordance with the Conditions of Contract. The Agent shall not be replaced without the specific approval of the Engineer.

20. The Contractor shall ensure that the safety of his work people and all authorized visitors to the site are protected at all times. In particular, there shall be the proper provision of guardrails to scaffolding, protection against falling materials, tools on site, dust, nail and other sharp objects. The site shall be kept tidy and clear of dangerous rubbish. The Architect shall be empowered to suspend work on site should it be considered this condition is not being observed and no claim arising from such suspension will be allowed.

21. The are as available to the Contractor for work yards, offices and other facilities shall be directed by the Architect and any existing features to remain shall be protected from damage throughout the Contract Period and handed back in good condition when they are vacated at the end of the Contract. If additional areas are required, the contractor shall source then at own cost.

22. The Contractor shall give the Architect reasonable notice of the intention to set out or take levels for any part of the Works so that arrangements may be made for checking the work. The accuracy of setting out and levelling shall be within the tolerances specified in the Specifications or on the Drawings. The checking of setting out or levelling by the Architect shall not relieve the Contractor of his duties or responsibilities under the Contract.

23. The Contractor must take steps necessary to safeguard and shall beheld fully responsible for any damage caused to existing and adjacent property, including buildings that are not a subject of demolition. He shall make good at his own cost damage to persons and property caused there on, and he shall indemnify the Procuring Entity against any loss or claim that may arise.

24. The Contractor shall take such steps and exercise such care and diligence as to minimize nuisance arising from dust, noise or any other cause to the occupiers of the existing and adjacent property. He must provide such temporary and special screens and tarpaulins or gummy bags, hoarding, barriers, warning signs etc. as he considers necessary and sufficient for the protection of the existing and adjacent property and or prevention of nuisance etc. as directed by Engineer.

25. The Contractors attention is drawn to the standards levy order which was amended on 15th October 1998.Legal notice No.154 of 1998. The Contractor is required to pay a monthly level of 0.2% of his factory price of construction works with effect from January 1999. Tenderer shall allow for this in the build-up of his rates.

26. The Contractor shall provide temporary sheds, offices mesh rooms, sanitary, accommodation and other temporary buildings for the use of the contractor and sub-contractors, including lighting furniture equipment and attendance.

27. Contractor shall provide/build labour camp sat areas to be agreed with the Engineer. Labor camps shall be complete with sanitary accommodation and fencing gates.

28. The Contractor must provide the necessary toilet facilities to the requirement and satisfaction of the Health Authorities and maintain the same in a thoroughly clean and sanitary condition and pay all conservancy fees during the period of the Works and remove when no longer required.

29. The Contractor shall provide at his own risk and cost all watching and lighting as necessary to safeguard the Works, Plant and materials against damage and theft.

30. The Contractor shall provide all necessary hoists, tackle, plant, equipment, vehicles, tools and appliances of every description for the due and satisfactory completion of the Works and shall remove the same on completion. All such plant, tools and equipment shall comply with all regulations in force throughout the period of the Contract and shall be altered or adopted during the Contract period as may be necessary to comply with any amendments in or additions to such regulations.

31. Provide, erect and maintain all necessary scaffolding, sufficiently strong and efficient for the due performance of the works, including Sub-Contract Works, provide special scaffolding as required by Sub-Contractors, alter and adopt all scaffolding as and when required during the Works, and remove on completion. No scaffolding is measured here in after and the Contractor must allow in his rates for this.

32. The Contractor shall take all necessary precautions such as temporary fencing, hoarding fans, planked footways, guard–rails gantries screen, etc., for the safe custody of the Works, materials and public protection and adjacent properties.

33. Cover up all and protect from damage, including damage from inclement weather, all finished work and unfixed materials, including that of Sub-Contractors, etc., to the satisfaction of the Architect until the completion of the Contract.

34. The Contractor shall, after completion of the works, at his own expense, remove and clear away all surplus excavated demolition materials, plant, rubbish and unused materials and shall leave the whole of the Site and Works in a clean and tidy state to the satisfaction of the Engineer, sheds, camps, etc. Particular care shall be taken to leave clean all floors and windows and tore move all paint and cement all rubbish and dirt as it accumulates. The Contractor is to find his own dump and shall pay all charges in connection there with.

35. Concrete test cubes shall be prepared in a set of three, as described including testing fees, labour and materials, making moulds, transport, handling, etc. Allow in your rates for making at least four cubes on each occasion, from different batches; the concrete being taken from the point of deposit.

36. The Contractor shall furnish at the earliest possible opportunity before work commences, and at his own cost, any samples of materials and workmanship that may be called for by the Architect for the approval or rejection, and any further samples in the case of rejection, until such samples are approved by the Engineer. Such samples, when approved, shall be the minimum standard for the work to which they apply. The procedure for submitting samples of materials for testing or approval and the method of marking for identification shall be as laid down by the Engineer. The Contractor shall allow in his Tender for such samples and tests, including those in connection with his Sub-Contractors work.

37. The Contractors attention is drawn to the Finance Bill of the year 2000/2001 on withholding tax on contractual payment section 35(7)(i)(ii) which became effective on 1st July 2000. A 3% withholding tax will be applicable to all interim payments exceeding Kshs…….....……. for work done in respect of building or civil works. The contractor shall allow for any costs arising resulting there from in the build-up of rates.

38. Blasting will only be allowed with the express permission of the Architect 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 Architect governing the use and storage of explosives.

39. The National Construction Authority is a state corporation established under the national construction authority Act No.14 of 2011. The broad Mandate of the Authority is to oversee the construction industry and coordinate its development. The National Construction Authority Regulations 2014 with an effective date of 6th June 2014, regulation 25, - Allow 0.5% of the tender sum/contract sum for construction levy.

40. The Contractor attention is drawn to Finance Bill of 1993 where VAT was introduced in all contracts for construction services. The tenderer is also drawn to VAT Act Cap 476 clause 19(9). The tenderer must allow for VAT 1.19 as instructed elsewhere.

41. The contractor shall allow and pay for all insurance to cover risks and indemnities required Items 17 and 18 of the Conditions of contract and also specified in the Special Conditions of Contract.

BILL - PRELIMINARY ITEMS

	PARTICULAR PRELIMINARIES (1/5)	AMOUNT
Item	**DESCRIPTION**	**Kshs.**
A	**PRICING ITEMS OF PRELIMINARIES**	
	Prices **SHALL BE INSERTED** against items of "**preliminaries"** in the tenderer's priced Bills of Quantities.	
	Please note that failure to price any item of general or particular preliminaries will be construed to mean that the tenderer wishes to provide for them in his rates and shall nevertheless be expected to perform or provide for them fully.	
B	**TAXES, DUTIES AND LEVIES IN FORCE**	
	The Contractor rates shall be net of all Taxes, Duties and Levies. The contractor shall price for Taxes, Duties and Levies charges at the Main Summary page of these Bills of Quantities.	
C	**SCOPE OF CONTRACT**	
	The scope of this contract shall comprise extension and renovation of an existing clinic facility with associated services and external works.	
D	**DESCRIPTION OF THE WORKS**	
	The works comprise the renovation and extension of the existing University clinic building(s) within the Main campus of Masinde Muliro University of Science and Technology. The works will involve new works as well as rehabilitation of major elements of the buildings including mechanical and plumbing, concrete works, timber and finishes. The works will also include some landscaping and external works.	
	Carried to Collection; Page 233	

Item	DESCRIPTION	Kshs.
	PARTICULAR PRELIMINARIES (2/5)	
A	**MEASUREMENTS**	
	In the event of any discrepancies arising between working drawings and the Bills of Quantities, the working drawings shall take precedence. The Contractor shall report such discrepancies to the Project Manager for the correct measurements to be established on site. Any work measured as Provisional shall be re-measured as executed on site.	
B	**LOCATION OF SITES**	
	The sites for works are located is in the premises of the Masinde Muliro University of Science and Technology, Kakamega Campus.	
C	**EXISTING BUILDINGS AND SERVICES**	
	Special precautions shall be required throughout the contract period to avoid damage to the nearby existing building, cables, drains and other services and the whole site in general. The Contractor shall allow for making good any damages arising from his actions during execution of this contract at his own expense.	
D	**GENERAL**	
	The Contractor is referred to the General Specifications for Building Works 1976 Edition for the complete description of all items of work and must allow for all costs in complying with these clauses.	
	Carried to Collection; Page 233	

Item	DESCRIPTION	Kshs.
	PARTICULAR PRELIMINARIES (3/5)	
A	**SIGN BOARD**	
	Allow for providing, erecting and maintaining throughout the course of the contract and afterwards clearing away, 1 No. sign board in accordance with the Ministry of Roads and Public Works standard detail to be obtained from the **Project Manager**	
B	**CONTRACT COMPLETION PERIOD**	
	The contract completion period in accordance with the conditions of contract must be strictly adhered to.	
	The "**Project Manager"** shall strictly monitor the Contractor's 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 etc., and working overtime all at his cost.	
C	**URGENCY OF THE WORKS**	
	The Contractor is notified that these works are very **URGENT** and should be completed within the period stated in these Particular Preliminaries. The Contractor should allow for any costs he deems he may incur by completing the works within the stipulated period.	
D	**ADVANCE PAYMENTS**	
	No advance payment may be granted.	
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.	
	Carried to Collection; Page 233	

Item	DESCRIPTION	Kshs.
	PARTICULAR PRELIMINARIES (4/5)	
A	**OFFICE FOR THE PROJECT MANAGER**	
	The Contractor shall be required to provide a site office with all the necessary furniture and sanitary facilities to accommodate 15 people during site meetings and for inspections. The contractor shall also be required to provide stores for his own use and for use by the sub-contractors. The Project Manager will issue the detailed specifications for these buildings, but they will in general be of timber and Galvanised Corrugated Iron (GCI) Gauge 32. Sheets construction. The site office will be **located as directed on site**.	
B	**MATERIALS FROM DEMOLITIONS**	
	Any materials arising from demolitions and not re-used shall become and remain the property of the Employer. The Contractor will preserve the same until they are safely handed over to the client for storage as directed by the Project Manager	
C	**PRICING RATES**	
	The Contractor 's rates for any item shall be deemed to include all costs involved in the execution of that particular item which include the cost, transportation and handling of materials, fixing, taxes and levies and for complying with other conditions of contract except where otherwise priced separately	
D	**PREVENTION OF ACCIDENT, DAMAGE OR LOSS**	
	The Contractor is notified that these works are to be carried out on a site where the Client is going on with other normal activities. The Contractor is instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of normal activities being carried out by the Client. The Contractor shall allow in his rates any expense he deems necessary by taking such care within the site.	
E	**HOARDING**	
	Approximate Length of hoarding 180 m. The Contractor shall provide, erect and maintain throughout the course of the Contract and thereafter clear away and make good temporary hoarding 3000 mm high above ground consisting of; 100 x 50 mm timber posts at 1800 mm centres firmly founded and secured, *75* x 50 mm horizontal timber rails at 900 mm centres, painted GCI sheets, proper timber gates with suitable locks. Defined by the Project Manager.	
	Carried to Collection ; Page 233	

Item	DESCRIPTION	Kshs.
	PARTICULAR PRELIMINARIES (5/5)	
A	**ADJOINING PROPERTY**	
	Take all necessary precautions to prevent damage to adjoining property. Any damage occurring must be made good to the satisfaction of the PM and/or owner(s) of the adjoining property at the contractor's expense.	
B	**USE OF SITE**	
	The Contractor shall not use the site for any other purpose other than carrying out the works. He shall not permit or display any advertisement without the consent of the PM.	
C	**WHITE ANTS AND TERMITES**	
	Allow for destroying any white ants and termites nests found in the vicinity of the buildings, destroying Queen Ants, depositing cyanide lumps in holes and tunnels and filling with hard-core and murram well rammed and sealed	
D	**SURVEYING EQUIPMENT**	
	The Contractor should provide and maintain survey equipment (total station and engineer's level together with tripods staff, batteries, etc.,) on site when needed during construction at his own cost.	
	Carried to Collection; Page 233	

Item	DESCRIPTION	Kshs.
	PARTICULAR PRELIMINARY COLLECTION	
	Brought forward from page 228	
	Brought forward from page 229	
	Brought forward from page 230	
	Brought forward from page 231	
	Brought forward from page 232	
	Total carried to Preliminaries collection on page 245	

ITEM	DESCRIPTION	KSHS
	GENERAL PRELIMINARIES (1/10)	
A.	**PRICING OF ITEMS OF PRELIMINARIES AND PREAMBLES**	
	Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specification.	
B.	**ABBREVIATIONS**	
	Throughout these Bills, units of measurement and terms are abbreviated and shall be	
	interpreted as follows:-	
	C.M. Shall mean cubic metre	
	S.M. Shall mean square metre	
	L.M. Shall mean linear metre	
	MM Shall mean Millimetre	
	Kg. Shall mean Kilogramme	
	No. Shall mean Number	
	Prs. Shall mean Pairs	
	B.S. Shall mean the British Standard Specification Published by the British Standards Institution, 2 Park Street, London W.I., England.	
	Ditto Shall mean the whole of the preceding description except as qualified in the description in which it occurs.	
	m.s. Shall mean measured separately.	
	a.b.d Shall mean as before described.	
	Carried to collection, page 244	

ITEM	DESCRIPTION	KSHS
	GENERAL PRELIMINARIES (2/10)	
A.	**EXCEPTION TO THE STANDARD METHOD OF MEASUREMENT**	
	Fix Only:-	
	"Fix Only" shall mean take delivery at nearest railway station (Unless otherwise stated), pay all demurrage charges, load and transport to site where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.	
B.	**EMPLOYER**	
	The "Employer" **'The Vice Chancellor, Masinde Muliro University of Science and Technology',** P. O Box 190 – 50 100, Kakamega.	
C.	**PROJECT MANAGER**	
	The term "Project Manager." Will be appointed by the client	
	Carried to collection, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (3/10)	
A	**FORM OF CONTRACT**	
	The Form of Contract shall be the Government of Kenya standard conditions of contract in accordance with the Public Procurement and Disposal Act. The Conditions of Contract are also included herein.	
B	**BOND**	
	The Contractor shall find and submit on the Form of Tender an **approved bank** and who will be willing to be bound to the Government in an amount equal to ten per cent (10%) of the Contract amount for the due performances of the Contract up to the date of completion as certified by the PROJECT MANAGER and who will when and if called upon, sign a Bond to that effect on the relevant standard form included herein. (Without the addition of any limitations) on the same day as the Contract Agreement is signed.	
C	**PLANT, TOOLS AND VEHICLES**	
	Allow for providing all scaffolding, plant, tools and vehicles required for the works. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.	
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, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (4/10)	
A	**MATERIALS AND WORKMANSHIP.**	
	All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are on site when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.	
B	**SIGN FOR MATERIALS SUPPLIED.**	
	The Contractor will be required to sign a receipt for all articles and materials supplied by the **Project Manager** at the time of taking deliver thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and for replacements of any such loss or damage with articles and/or materials which will be supplied by the **Project Manager** at the current market prices including Customs Duty and V.A.T., all at the Contractor's own cost and expense, to the satisfaction of the **Project Manager**	
C	**STORAGE OF MATERIALS**	
	The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the **Project Manager**.	
D	**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 Ministry of Works.	
	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.	
	Carried to collection, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (5/10)	
A	**GOVERNMENT ACTS REGARDING WORK PEOPLE ETC.**	
	Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the Contractor's attention is drawn to the provisions of the Factory Act 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.	
B	**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.	
C	**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.**	
D	**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, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (6/10)	
A	**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. No claim arising from his failure to comply with this recommendation will be considered.	
B	**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 for the transport of the materials, plant and workmen as may be required for the complete execution of the works. Upon completion of the works, the Contractor shall remove such temporary access and make good and reinstate all works and surfaces disturbed to the satisfaction of the **Project Manager**.	
C	**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.**	
D	**OFFICE ETC. FOR THE PROJECT MANAGER**	
	The Contractor shall be required to provide a site office with all the necessary furniture and sanitary facilities to accommodate 15 people during site meetings and/or inspections. The contractor shall also be required to provide stores for his own use and for use by the sub-contractors. The Architect will issue the detailed specifications for these buildings but they will in general be of timber and G.C.I. Sheets construction.	
	Carried to collection, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (7/10)	
A	**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.	
B	**SANITATION OF THE WORKS**	
	The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the **Project Manager**	
C	**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.	
D	**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 Such sums are net and no addition shall be made to them for profit.	
E	**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 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.	
	Carried to collection, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (8/10)	
A.	**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. 38** of the Conditions of Contract.	
B	**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 provided in these Bills.	
C	**INSURANCE**	
	The Contractor shall insure as required in **Conditions No. 30** of the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the **Project Manager** either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the **Project Manager** shall from time to time ascertain that premiums are duly paid up by the Contractor who shall if called upon to do so, produce the receipted premium renewals for the **Project Manager's** inspection.	
D	**PROVISIONAL WORK**	
	All work described as "Provisional" in these Bills of Quantities is subject to re-measurement 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 be 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, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (9/10)	
A	**ALTERATIONS TO BILLS, PRICING, ETC.**	
	Any unauthorized 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.	
B	**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.	
C	**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.	
D	**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.	
E	**REMOVAL OF RUBBISH ETC.**	
	Removal of rubbish and debris from the Buildings and site as it accumulates and at the completion of the works and remove all plant, scaffolding and unused materials at completion.	
	Carried to collection, page 244	

Item	DESCRIPTION	Kshs.
	GENERAL PRELIMINARIES (10/10)	
A	**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**	
B	**FIRM PRICE CONTRACT**	
	Unless otherwise specifically stated in the Contract Data and/or Particular Preliminaries this is a firm price contract and the Contractor must allow in his tender rates for any increase in the cost of labour and/or materials during the currency of the contract.	
C	**GENERAL SPECIFICATION.**	
	For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works 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.	
D	**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.**	
E	**CONTRACTOR'S SUPERINTENDENCE/SITE AGENT**	
	The Contractor shall constantly keep on the works 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.	
	Carried to collection, page 244	

	GENERAL PRELIMINARIES COLLECTION	
	Brought Forward From page 234	
	Brought Forward From page 235	
	Brought Forward From page 236	
	Brought Forward From page 237	
	Brought Forward From page 238	
	Brought Forward From page 239	
	Brought Forward From page 240	
	Brought Forward From page 241	
	Brought Forward From page 242	
	Brought Forward From page 243	
	Total For General Preliminaries Carried to Page 245	

ITEM NO	ITEM DESCRIPTION	AMOUNT
	PRELIMINARIES COLLECTION	
	Particular Preliminaries Brought forward from Page 233	
	General Preliminaries Brought forward from Page 247	
	Total carried to Summary page 261	

BILLS OF QUANTITY : PROPOSED MMUST CLINIC RENOVATION AND EXTENSION

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	ELEMENT NO.1: Substructure				
	(All Provisional)				
	Excavation and earthworks				
A	**Bush clearance**				
i	Clear bush and vegetation including grabbing of roots	SM	530		
ii	Cut, uproot the stumps and cart away trees of girth not exceeding 500mm	No.	3		
B	Excavate over site average 150mm deep to remove vegetable top soil and cart away to spoil as shall be directed by the Project Manager.	SM	530		
C	Excavate to reduced levels for depth not exceeding 1.5m as directed by the Project Manager.	CM	430		
	Ditto 1. 5 to 3m	CM	5		
D	Excavate foundation trench not exceeding 1.50metres deep starting from stripped level.	CM	228		
E	Ditto Column bases	CM	1		
F	Return fill and ram selected excavated materials around foundations.	CM	68		
G	Wheel, deposit, spread and level within compound excess excavation as directed by the Project manager.	CM	160		
H	Allow for keeping foundation free of water.	ITEM			
I	Allow for keeping clear of fallen materials, maintaining and upholding sides of excavations.	ITEM			
J	Approved imported hardcore filling rolled and consolidated in layers not exceeding 200mm thick to make up levels.	CM	110		
K	Ditto 200mm thick hand packed hardcore.	SM	530		
L	50mm thick stone dust or approved equivalent blinding on hardcore.	SM	530		
M	Insecticide treatment as described; 'TERMIDOR' or other equal and approved on blinded hardcore and bottom of foundations to manufactures specification: Provide 10 years written performance guarantee certificate to approval.	SM	530		
N	Damp proof membrane as described: 1000 gauge polythene sheeting on blinded hardcore including all necessary overlaps.	SM	530		
O	Demolition of an existing building (6mx15m) and cart the waste away from site as directed	ITEM	ITEM		
	Total carried to collection page 248				

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	Element No.1 (cont'd)				
	Concrete Works:				
	Mass concrete class 15/40 to BS 8100 as described;				
A	50mm thick blinding under foundation strip footing	SM	75		
B	Ditto 50mm thick to column bases	SM	5		
	Vibrated reinforced concrete class 20/20 to BS 8110 as described in:-				
C	Foundation strip footing.	CM	20		
D	Column bases	CM	1		
E	Column	CM	1		
F	100mm thick horizontal floor slab	SM	460		
	High tensile square twisted bar reinforcement to BS 4461 including cutting, bending, tying and hoisting to position.				
G	8mm diameter	KG	300		
H	Ditto 10mm diameter	KG	150		
1	Ditto 12mm diameter	KG	100		
J	**Fabric Mesh** BRC Mesh Ref. No. A142 (measured net, allow 300mm end and edge laps)	SM	460		
	Sawn formwork to:				
K	Vertical sides of strip footing	SM	120		
L	Vertical sides for column bases	SM	20		
M	Vertical sides of column	SM	5		
NO	Edge of floor bed 75-150mm	LM	100		
	Sub-structure walling Natural stone wall to BS 5390 bedded and jointed in cement/sand (1:3) mortar including 25mm x 18 gauge hoop iron reinforced in every alternate course				
A	200mm thick	SM	230		
	Three ply hessian based bituminous felt horizontal damp proof course to BS 743 type A weighing 3.8 kg/m2 bedded in cement /sand (1:3) mortar.				
A	200mm wide	LM	215		
	Total carried to collection page 248				

ITEM NO	ITEM DESCRIPTION	AMOUNT
	SUBSTRUCTURES COLLECTION	
	Brought forward from Page 246	
	Brought forward from Page 247	
	Total carried to Summary page 259	

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	ELEMENT NO.2: Walling: Approved quality concrete block bedded and jointed in cement and sand (1:4) mortar reinforced with 25mmx18 gauge hoop iron every alternate course as described in:				
A	150 mm thick walling	SM	550		
B	100mm thick walling	SM	10		
	ELEMENT NO.3: Roof: Pitched roof covering. **(All Provisional)**				
A	28 gauge pre-painted corrugated galvanized iron sheets on75mmx50mm purlins including nailing and approved rubbers.	SM	750		
B	28 gauge x 380mm wide overall pre-painted plain sheet galvanized iron ridge or hip capping, once bent and dressed over roof covering including all necessary end laps.	LM	110		
C	Ditto but 1000mm wide valley gutter lining four times bend both edges trucked under covering.	LM	45		
	Sawn cypress celcured pressure impregnated Cypress or approved equivalent in trusses spanning 11,000mm as described in the drawings;				
D	100x50mm rafters, tie beams and king posts	LM	880		
E	100x50mm struts	LM	670		
G	100x25mm gussets	LM	100		
H	100x50mm wall plates	LM	160		
I	200x38mm ridge board	LM	110		
J	200x25mm fascia board nailed to end of rafters.	LM	160		
	Total carried to collection page 250				

ITEM NO	ITEM DESCRIPTION	AMOUNT
	SUPERSTRUCTURE COLLECTION	
	Brought forward from Page 249	
	Total carried to Summary page 259	

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	FITTINGS				
	Element No.4: Doors				
	45mm thick standard solid cored to BS 459: Part 2, including 100mm brass butt hinges no. HN-DW-403020, 3-Lever Mortice lock ref. 2295PB complete with 150x75mm approved hardwood door frame, aluminium handles, 150mm aluminium tower bolt inside and 150x75 male or female signage ref MSC-75PB or/FSC-75PB as described:				
A	Flush door overall size 1000x2100 mm high faced both sides with 4mm thick mahogany veneer, 6mm hardwood lipping all round.	NO	10		
	Flush door overall size 1200x2100 mm high faced both sides with 4mm thick mahogany veneer, 6mm hardwood lipping all round.	NO	9		
B	Fabricate, deliver, and install purpose made steel casement doors **D1** complete with approved prime coating hinges handles catches and three lever mortise lock England or an approved equivalent as described in the architectural drawings door overall size 1200x2100.	NO	5		
C	Fabricate, deliver, and install purpose made steel casement doors **D3** complete with approved prime coating hinges handles catches and three lever mortise lock England or an approved equivalent as described in the architectural drawings door overall size 1000x2100.	NO	2		
	Glazing				
C	Supply and fix 4mm clear glass on door steel casement with approved first grade quality metal putty.	SM	40		
E	Supply and fix 5mm thick bronze tinted glass on door steel casement with approved first grade quality metal putty.	SM	5		
	Total carried to collection page 253				

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	Element No.5: Windows:				
A	150x15mm quarry tile external window all pointed in cement sand (1:3) mortar.	LM	40		
	Fabricate, deliver, and install purpose made steel casement windows with 25x2mm 'Z' section framing including all coupling mullions, bronze handles, peg stays and other ironmongery. Factory primed with red oxide primer including cutting and pinning fixing lugs to concrete or masonry work jambs and bedding in cement and sand (1:3) mortar, pointing all round frames in mastic, easing oiling.				
B	Windows 1 overall size1800x900mm	NO	10		
C	Window 2 overall size 1200x600	NO	5		
D	Windows 3 overall size1500x900mm	NO	11		
E	Windows 4 overall size900x600mm	NO	8		
F	Windows 5 overall size 900x900mm	NO	1		
G	Windows 6 overall size1500x600mm	NO	2		
L	***Glazing*** Supply and fix 4mm clear glass on window steel casement with approved first grade quality metal putty.	SM	40		
	Total carried to collection page 253				

ITEM NO	ITEM DESCRIPTION	AMOUNT
	FITTINGS COLLECTION	
	Brought forward from Page 251	
	" " " " 252	
	Total carried to Summary Page 259	

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	Element No. 6. Finishes				
	External wall.				
C	12mm thick plaster to door and window reveals not exceeding 100mm girth	LM	40		
D	12mm thick cement/sand (1:3) plaster finished smooth with white lime as described.	SM	200		
	Internal wall:				
E	12mm thick cement/sand (1:3) plaster finished smooth with white lime as described.				
G	Internal walls	SM	450		
F	1500mm high cement/sand (1:3) plaster finished semi rough with wood float to receive tiles at wet areas.	SM	30		
	Ceiling finish				
H	10mm thick chipboard ceiling fixed to and including 75x50mm sawn Cypress brandering at 600mm centres both directions fixed with cloud headed nails and set out in symmetrical panels with V joints.	SM	500		
	Fix 75mm wide Cypress timber cornices.	LM	300		
	Floor finish				
J	40mm thick sand/cement (1:3) compacted screed finish semi-rough to receive tiles	SM	500		
K	Ditto for 150mm high skirting.	LM	300		
	Approved coloured glazed ceramic 'Saj' or approved equivalent jointed and pointed with 1:2 cement sand mortar as described.				
L	330x330x10mm thick on floors	SM	450		
	Ditto for 150mm high skirting.	LM	300		
	Approved white coloured glazed ceramic 'Saj' or approved equivalent jointed and pointed with 1:2 cement sand mortar as described.				
M	250x200x6mm thick tiles on walls at wet areas.	SM	30		
Q	Fabricate, deliver and install purpose made handrail to the ramp and veranda complete with one coat of factory primer as described in architectural drawings.	LM	10		
	Total carried to collection page 256				

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	Element No.7. Painting and decoration:				
	Prepare and apply one undercoat and two coats plastic emulsion paint as 1st grade Crown or approved equivalent to :				
	Plastered wall surfaces internally.	SM	450		
	Ditto chipboard ceiling internally.	SM	530		
H	Plastered door and window reveals not exceeding 100mm girth externally	SM	50		
	Prepare and apply one undercoat and two coats of gloss paint as 1st grade crown or approved equivalent to:				
I	Metal surfaces on windows and doors	SM	40		
J	Metal surfaces on handrails	LM	10		
K	Wooden door surfaces	SM	50		
	External walls	SM	200		
	Total carried to collection page 256				

	FINISHES COLLECTION	AMOUNT
	Brought forward from Page 254	
	" " " " 255	
	Total carried to summary page 259	

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	Element No.9. Road works :(All Provisional)				
A	Clear site of all growth including small trees not exceeding 600mm girth and cart away	SM	10		
B	Excavate 150mm deep topsoil, wheel, deposit, spread within compound as directed	SM	100		
C	Excavate to reduced levels not exceeding 1.5m deep, cart, deposit and spread soil on site where directed	CM	300		
D	Level and compact base of excavations to Engineers details compacted to 98% MDD	SM	200		
E	Grade bottom of the existing access road to falls and crossfalls including rolling and compaction to 98% MDD standard compaction.	SM	200		
F	Approved excavated material as fill compacted to 98% MDD and consolidated to sub-grade level	SM	200		
G	Approved excavated material as fill compacted to 98% MDD and consolidated to 150mm thickness to form sub-base	SM	200		
	provide, place and compact 150mm thick layer of crusher run to form base as directed by the PM	SM	200		
	60mm thick heavy duty concrete paving blocks on and including 50mm sand bed	SM	200		
	125mm x250mm half battered kerb on and including 100mm thick x475mm girth mass concrete (1:3:6) bed haunching to back all necessary formwork, excavations and disposal.	LM	70		
	125mmx100mm channel block ditto	LM	70		
	600x600mm precast concrete paving slabs bedded and jointed in cement/ sand (1:4) mortar around plinths	SM	30		
	Total carried to summary page 258				

ITEM NO		AMOUNT
	ROADWORKS COLLECTION	
	Brought forward from page 257	
	Total carried to summary page 259	

ITEM NO	ITEM DESCRIPTION	AMOUNT
	SUMMARY MAIN WORKS	
	From page 248 Substructure	
	From page 250 Superstructure	
	From page 253 Fittings	
	From page 256 Finishes	
	From page 258 Roadworks	
	Total carried to main summary page 261	

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT
	PRIME COST AND PROVISIONAL SUMS				
A	Allow a Provisional sum of Kenya Shillings Five Hundred Thousand (Kshs. 500,000) only for Project Management costs			SUM	500,000
B	Allow a Provisional sum of Kenya Shillings One Hundred Fifty Thousand (Kshs. 150,000) only for Project Manager's stationery			SUM	150,000
E	Allow a Provisional sum of Kenya Shillings two Hundred Thousand (KShs. 200,000) for landscaping works.			SUM	200,000
D	Allow a Provisional sum of Kenya Shillings Five Hundred Thousand (Kshs. 500,000) only for Contingency			SUM	500,000
	Total carried to main summary page 261				**1,350,000**

ITEM	ITEM DESCRIPTION	AMOUNT
	MAIN GRAND SUMMARY	
	Proposed MMUST clinic renovation and extension	
	From page 245 Preliminaries	
	From page 259 Main works summary	
	From page 260 Provisional sums	1,350,000
	From page 268 Electrical works	
	From page 276 ; Mechanical Works.	
	Total (*inclusive of 16% VAT*) Kshs	

Total carried to form of Tender
(In words) _____

_____

_____

Signed_____

Name _____

Address _____

_____

Date _____

Company stamp _____

Witness

Signed_____

Name _____

Address _____

_____

Date _____

PROPOSED EXTENSION OF WORKS AT MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY CLINIC.

ELECTRICAL INSTALLATION WORKS (BOQ's).

	1.0 CLINIC FLOOR				
No	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Ksh)
	LIGHTING POINTS & FITTINGS				
1	Lighting points wired in 1.5mm^2 single core PVC insulated copper cables drawn in 20mm Ø concealed H/G PVC conduit and all accessories excluding switches for:-				
(a)	One way switching	48	No		
(b)	Two way switching	21	No		
2	10A Ivory type plate switch as M.K. range or approved equivalent:-				
(a)	1 Gang 1 Way	8	No		
(b)	2 Gang 1 Way	6	No		
(c)	4 Gang 2 Way	4	No		
(d)	1 Gang intermediate.	2	No		
3	Lighting fittings complete with tubes, bulbs and all accessories as follows:-				
(a)	1200mmx36W single LED as Philips or approved equivalent.***(Type 2).***	38	No		
(b)	600mmx18W single LED as Philips or approved equivalent.***(Type 6).***	10	No		
(c)	Screwneck spherical ball fitting complete with energy saving bulb as Phillips 20W.***(Type S).***	12	No		
(d)	Wall mounted weatherproof security lighting fitting 50W LED Floodlight as Philips or approved equivalent. ***(Type V)***	8	No		
	Sub Total Carried to the next Page……..				

	Sub Total Brought Forward from the Previuos Page…….				
	POWER POINTS & FITTINGS				
4	13A Ring mains circuit power points comprising switched socket outlet wired in 3x2.5mm^2 single core PVC insulated copper cables drawn in concealed 25mm Ø H/G PVC conduit and/or inside trunking including all accessories.	28	No		
5	13A switched socket outlet as CRABTREE and all accessories for:-				
(a)	Twin switched socket.	28	No		
6	5x10mm^2 S/C pvc insulated copper cables to 3 phase outlet drawn in concealed H/G PVC conduit including all accessories for 3Φ outlet plug:	60	M		
(a)	32A, 3Ø, 5 Pin industrial switched socket outlet c/w top plug including 32A TP isolator for 3ϕ machine.	2	No		
(b)	Cooker socket wired in 6.0mm2 single core PVC insulated copper cables drawn in concealed 25mm Ø H/G PVC conduit and all accessories	1	No		
7	Permanent red lettered warning plates inscribed "DANGER-415V" where there is more than 1 phase.	1	Item		
8	16 way TPN Distribution board DB A complete with 160A integral isolator as CRABTREE or approved equvalent.	1	No		
9	MCB's to be installed in the above Distribution Board A as follows:-				
(a)	5 A SP MCB	6	No		
(b)	10A SP MCB.	4	No		
(c)	20A SP MCB.	4	No		
(d)	30A SP MCB.	4	No		
(d)	32A TP MCB.	3	No		
(e)	Single blanking plates.	4	No		
10	3x25.0mm² PVC/SWA/PVC copper submains cable drawn in concealed H/G PVC conduit from main LV switchboard panel to TPN Distribution Board.	24	m		
	Sub Total Carried to the next Page…….……..				

No	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Ksh)
	Sub Total Brought Forward from the Previous Page…….				
11	**METAL TRUNKING**				
(a)	200mmx50mmx2500mm; 3 compartment polished skirting metal trunking complete with all accessories for power points and LAN cabling.	25	m		
(b)	Corners for skirting metal trunking complete with all accessories.	4	No		
(c)	Knock-outs for power points, Voice and Data points in skirting metal trunking complete with all accessories.	6	No		
12	PME comprising 25mm Ø x 1500mm long steel cored copper clad earth electrode, 6.0mm² single core earth lead, earth clamp and all accessories including an inspection pit with removable concrete cover all to the requirements of KPLC.	1	Lot		
13	Provide earth bonding to all metal works to approval	1	lot		
14	Cable tray 300mmx50mm complete with all brackets, bolts and all accessories at high level for LV cables.	5	m		
15	Emergency EXIT signs with 3Hr maintained lamps.	3	No		
16	Standard cable loop in box in galvanised metal complete with cut-outs, LUCY connector and 100A cartridge fuse.	1	No		
17	200A TPN MCCB c/w shunt trip coil as CRABTREE, MEM or approved equivalent installed at the Power House.	1	No		
18	25.0mm² x 4 core, PVC/SWA/PVC armoured copper feeder cable complete with cable glands and cable lugs from Main Power house to the Loop in Box.	120	m		
19	Trenching to a depth of 450mm, cable laying, cable tiling with concrete 'HATARI' cable tiles and backfilling in soft ground.	120	m		
20	PME comprising 25mm Ø x 1500mm long steel cored copper clad earth electrode, 6.0mm² single core earth lead, earth clamp and all accessories including an inspection pit with removable concrete cover all to the requirements of KPLC.	1	Item		
	Sub Total for Schedule 1 (Clinic Floor) carried to Prices Summary Page; Ksh.				

	2.0 CCTV INSTALLATIONS				
No	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1	Supply, install, test and commission the following :-				
2	1/3'' High resolution IP, colour fixed dome IP network camera, resolution up to 10 mega-pixels with power over ethernet support (IEEE 802.3af), c/w Auto Iris varifocal lens As AXIS, VISTA or approved equivalent.	6	No		
3	1/3'' High resolution IP, colour fixed Bullet IP network camera, resolution up to 10 mega-pixels with power over ethernet support (IEEE 802.3af), c/w Auto Iris varifocal lens As AXIS, VISTA or approved equivalent.	8	No		
4	4 Pair Cat6E UTP Cables for Cameras	5	Rolls		
5	CCTV System Connection Point, comprising of Heavy Duty PVC 150 mm x 150 mm x 75 mm deep square adaptor box, flush mounted and concealed in the Building Fabric, complete with cover.	12	No		
6	24 Port switch with POE capacity As CISCO WS-C2960-24PC-S or approved equivalent	1	No		
7	Wireless Transmitter/Receiver (5MW Radio) or use of Fibre cable for transmission. To be determined on the ground by the Engineer	1	No		
8	12UH purpose made Cabinet to house the Network switch, NVR and UPS complete with glass door, fans and power distribution.	1	No		
9	1KVA UPS, Rack mounted for, Monitor, network switch and the cameras complete with high-Volt surge protector and all accessories as APC manufacture or approved equivalent	1	No		
10	32 Channel Network Video Recorder (NVR) with minimum storage capacity of 128 TB.Hikvision DS-7732NI-K4/16P 32-Channel Network Video Recorder or approved equivalent; inclusive of 24 Port switch with POE capacity As CISCO WS-C2960-24PC-S and all other accessories;	1	No		
11	55" TVL LED Monitor as LG, SAMSUNG, SONY or approved equivalent.	1	No		
12	Surge protector	1	No		
13	Installation, programming, testing and commissioning	1	Item		
15	Any other items necessary to complete the installation of the surveillance system.(Give breakdown and cost as part of the Bills of quantities)	1	Item		
	Sub Total for Schedule 2 (CCTV Installation) carried to Prices Summary Page; Ksh.				

	3.0 LIGHTNING PROTECTION SYSTEM				
No	**DESCRIPTION**	QTY	UNIT	RATE	AMOUNT (Ksh)
	Supply, install, test and commission the following:-				
	Air Termination				
1	600mm long x 15mmØ multiple point pure copper air terminal with spikes as Furse Cat. No. RA 600 mounted on bracket.	4	No		
2	Copper air terminal base as Furse Cat. No. SD 105.	4	Rolls		
3	Copper junction clamps for tape.	4	No		
4	25mm x 3mm turned copper tape as Furse Cat. No. TC 230.	50	No		
5	Copper ridge saddle as Furse Cat. No. CD 115.	20	No		
6	Direct Coupling tape clip as Furse Cat. No.CP 210.	20	No		
7	Copper rod-to-tape coupling.	3	No		
	Down Conductors				
8	25mm x 3mm turned copper tape as Furse Cat. No. TC 230.	30	No		
9	Direct Coupling tape clip as Furse Cat. No. CP 210.	1	No		
10	Oblong test/junction clamp as Furse Cat. No. CN 105.	3	No		
11	38mmØ HG PVC conduits for the down conductors above.	8	m		
	Earth Termination				
12	16mmØ x 1500mm long solid copper earth rod as Furse Cat. No. RC 020, complete with driving stud and spike.	4	Item		
13	Earth rod-to-tape clamp type A.	4	Item		
14	Concrete inspection earth pit/chamber, 300mmx300mm masonry type c/w removable cover Cat. No. PT 005 with 5 hole earth bar as Furse Cat. No. PT 006.	4	Item		
	Bonding				
15	Bonding and clamping to all metal work including water pipes, gas pipes, hand-rails, air-conditioning units, window frames, cladding, metal roof etc. and the main earth for the building.	1	Item		
	Sub-Total for Schedule 3 (Lightning protection) carried to Prices summary Page; Ksh.				

	4.0 GENERAL ITEMS				
No	**DESCRIPTION**	QTY	UNIT	RATE	AMOUNT (Ksh)
1	Carry out comprehensive 24-hour power analysis, after installing main switchboard, but before switching on load with a digital power meter i) Record all the power system parameters (Note: Parameters must be satisfactory before building is switched on).	1	Item		
2	Allow for presentation of all the required samples as per specifications, Bills of Quantities and Drawings.	1	Item		
3	Working/ Shop Drawings Prepare and submit three sets of record (shop) plan and isometric layout drawings to easily readable scale, A1 or A0 paper size formart as follows i) routes-types and sizes and arrangement of all conduits any other details as per specifications Drawings are to be submitted in soft copy (AutoCad/REVIT 2023) and hard copy to the Engineer	1	Item		
4	As Installed Drawings As above but for as built/ installed drawings	1	Item		
5	All other items of general preliminary to cover, but not limited to:- i) Attendance on all other sub-contractors such as for Communication Services, Mechanical Installations, Security Installations, Sound Equipment/ Wiring Installations	1	Item		
6	Allow One Hundred Thousand Kenyan Shillings for Supervision by Project Electrical Engineer, Training and Site Inspections.	1	Item		
7	Allow One Hundred and Fifty Thousand Kenyan Shillings for renovation of Electrical Works of the Existing Clinic.	1	Item		
	Sub-Total for Schedule 4 (General Items) carried to Prices summary Page; Ksh.				

	ELECTRICAL WORKS GRAND PRICES SUMMARY PAGE	
No.	**DESCRIPTION**	**AMOUNT**
1	Total brought forward from schedule 1; Clinic Floor	
2	Total brought forward from schedule 2; CCTV Installation Works	
3	Total brought forward from schedule 3; Lightning Protection System	
4	Total brought forward from schedule 4; General Items	
A	Allow Contingency sum of One Hundred Thousand for Electrical works to be expended at the discretion of the Project Electrical Engineer.	
	Grand Total for Electrical Works Carried to the "SUMMARY PAGE 261" Ksh.	

PROPOSED EXTENSION OF WORKS AT MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY CLINIC.

MECHANICAL WORKS (PLUMBING AND DRAINAGE) BOQ's.

	Description	UNIT	QTY	RATE	Amount
	CLINIC EXTENSION INSTALLATION ITEMS Supply, deliver, install and fix the following sanitary fittings including all materials and jointing to supply, waste/soil and overflow pipes. Trade names are specified only as an indication of quality. Equal and approved appliances may be supplied. Where trade names are mentioned, the Ref. No. is intended only as a guide to the type and quality of fittings				
A	**WASH HAND BASIN (WHB) CONSULTATION ROOMS** EKOS Dallas White Rectangle Countertop Basin - 600 x 460mm BISNB8219 Single tap hole complete with a) Ekos Diamond Basin Mixer With Pop-Up Slotted SPBWF1916GM b) Chrome plated chain waste Ref.NO.CQ5823GA c) 1¼" bottle trap as VIEGA d) Black Aluminum Framed Mirror - 500 x 700mm HJGFNFB259B	No	9		
B	**WASH HAND BASINS FOR WASHROOMS** **Countertop**, size 580x 485mm with single taps hole, complete with the following : Wash hand basin in white vitreous china oval shaped bowl with chain stay hole Ref. No. AL4522 WH Chrome plated chain waste Ref.NO.CQ5823GA Self rimming basin sealed to unit with building sealant as twyford. · 1¼" bottle trap as VIEGA · 1¼" plug and chain stay. · Self-closing and press type pillar tap DN 15 for sanitary facilities with piston-free design, as Jaguar PRS-CHR-031 or approved equivalent	NO	4		
C	**MIRROR** Glass plated mirror size: 600mm X 450mm X 5mm thick, polished plate glass silver backed mirror with bevelled edges, plugged and screwed to wall with 4 No. Chrome plated dome capped screws. As Twyfords SPECTRUM 2000 accessories Ref. No. PB383XX	No	13		
D	**SOAP DISPENSER** Wall mounted soap dispenser with a capacity of about one litre having après action soap release mechanism complete with fixing screws. Allow for initial soap supply. To be as **Mediclinic** or approved or equivalent.	NO	13		
	Sub-total (1/8) forwarded to plumbing summary (Page 276)				

Item No.	Description	UNIT	QNTY	RATE	Amount
A	CLEANERS SINK Sola cleaner sink, floor-standing, high backs teel sink size 508 x 648 x200mm deep in heavy duty stainless complete with stainless steel grating and 20mm chrome plated wall mounted inclined jagua tap, chrome plate chain and rubber stopper and heavy gauge 40mmn chrome plated bottletrap, stainless steel legs and bearers and 32mm grid waste fitting. All as Twyford cleaners sink PS4044SS or approved equivalent.	**NO**	**1**		
B	WATER CLOSET(WC) Floor standing back to wall Closed couple dual flush WC bowl with 'P'- trap in approved white colour complete with horizontal outlet to BS 3402, Material as Ceramic and of Dimensions: (W)365 x (D)520 x (H)400mm approximately. Heavy duty plastic seat cover and ring with stainless steel hinges or approved equivalent. Outlet/vertical bend 90° to convert P-trap into S. All to be as ideal standard' or equal and approved.	NO	7		
C	TOILET ROLL HOLDER Surface mount multi-functional 304 Stainless Steel Toilet Paper Holder with Mobile Phone Shelf. Size 180mm x92mmx 78mm. Holder to be supplied with initial toilet paper as Velvex.	NO	5		
D	ROBE HOOK Stainless steel robe hook as Frelan Jedo Robe Hook in Satin Stainless Steel- dimensions Projection - 64mm Rose - 30mm	No	5		
E	URINAL BOWLS Rectangular Large Urinal Bowl in white ceramic. Top Inlet flushing system Size 310mm x 475mm x 690mm. Bowls to be complete with 32mm flush valves and bottle trap. All to be as Ideal standard Ref G402001	NO	2		
F	URINAL BOWL DIVIDER Rectangular large wall mounted Urinal Division in white ceramic, size 460mm x 67mm x 106mm (L H W) as Ideal standard Ref G410001	NO	1		
G	KITCHEN SINK Single bowl, Double drainer rectangular stainless steel kitchen sink of size 1000 x 500mm as manufactured by UNIGHIR or equal and approved. The bowl size to be 420 x 355 x 150mm deep complete with chrome plated 40mm waste fittings, plugs, chain stays, overflow, 1No. 15mm diameter chrome plated sink mixer as TAPIS, chrome plated bottle trap with 75mm deep or approved equivalent.	NO	1		
	Sub-total (2/8) forwarded to plumbing summary (Page 276)				

Item No.	Description	UNIT	QNTY	RATE	Amount
A	GRAB RAILS FOR DISABLED PERSONS Supply and fix the following for the persons with disability a) 5No.600mm long grab rails b) 1No. hinged support rail and toilet roll holder c) Doc.M back support with cushion	SET	7		
B	**SLUICE SINK** Noncorrosive stainless steel 304 rectangular sink and one slope Hopper. Hopper to be provided with Spurger type water spray rim and 10 Litres capacity flush tank, long neck elbow action pillar taps two (2) in number. Size 1200 mm L x 600 mm W X 900 MM H.	NO	1		
C	SHOWER Concealed shower mixer consisting of 20mm diameter riser pipe to connect the shower for cold /hot water to the swivel/adjustable shower arm and rose. Chrome plated handle/knob mixer to be as cobra or equal and approved	No	5		
D	PAPER TOWEL DISPENSER Supply and fix hand towel paper dispenser as medclinic paper towel dispenser or approved equivalent. Allow for initial supply of paper as fay multifold.	No	13		
E	**Ceiling Curtain Track /rail System for bed/ room division** Heavy-duty Ceiling Curtain tracks made of commercial grade aluminum alloy construction which is non corrosion, wear and weather resistant. Lightweight with load-bearing capacity to support weight of upto30kg. The rail system to be supplied complete with rollers, rings and hooks. The rail to be as CEFRAX or any approved equivalent.	LM	35		
	Sub-total (3/8) forwarded to plumbing summary (Page 276)				

Item No.	DESCRIPTION	UNIT	QTY	RATE	Amount
	INTERNAL PLUMBING Supply, deliver and install tubing and fittings as described and shown on the drawings. Tenderers must allow for jointings, clippings, couplings etc necessary for the proper and satisfactory functioning of the system when pricing. The following in **PN 16 PPRC** conforming to the current European standards for PPR installations and to the Engineers approval, pipe jointing shall be by polyfusion or use of electric coupling Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves , sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers etc. **PPRC. pipes**				
A	25mm diameter P.P.R pipe work	Lm	290		
B	32mm diameter ditto	Lm	80		
	Extra-over pipe fittings **Bends**				
C	25mm diameter bends	No.	115		
D	32mm diameter ditto	No.	30		
E	25mm diameter cross over bends	No.	40		
F	25mm double bends	No.	11		
G	40mm diameter bends	No.	12		
	Tees				
H	25mm diameter equal tee	No.	38		
I	32mm diameter tee	No.	30		
J	40mm diameter equal tee	No.	12		
	Reducers				
K	25x20mm diameter male reducing adaptor	No.	70		
L	50x40mm diameter reducer	No.	3		
M	40mm x32mm reducer	No.	3		
	valves				
N	20mm diameter angle valves	No.	31		
O	50 mm diameter gate valves	No.	1		
P	40mm diameter gate angle	No.	4		
	Sockets				
Q	25mm diameter sockets	No.	120		
R	32mm ditto	No.	46		
S	50mm ditto	No.	4		
	Sub-total (4/8) forwarded to plumbing summary (Page 276)				

Item No.	Description	UNIT	QNTY	RATE	Amount (KShs)
	EXTERNAL WATER RETICULATION **NOTE**: The following quantities for water reticulation are measured from the external surface of buildings wall to the main supply pipe				
A	Excavate trench for 40mm dia. pressure pipe work not exceeding 1000mm deep and 500mm wide on average, part refill and ram, and surplus cart away. Supply, deliver and install tubing and fittings as described and shown on the drawings. Allow for jointings, clippings, couplings etc necessary for the proper and satisfactory functioning of the system when pricing. The following in PN 10 HDPE conforming to the current European standards for HDPE installations and to the Engineers approval, pipe jointing shall be by polyfusion or use of hdpe coupling or connectors. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of tanks, valves , sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers etc.	LM	125		
B	40 mm bore diameter pipe network	Lm	125		
	Extra over pipework for the following:				
C	40mm connectors	No	4		
D	50mm PPR Tee	No	1		
	Valves				
E	50mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 1952, with wheel and head joints to steel tubing. The gate valve to be as PEGLER or approved equivalent	No	1		
F	**Water line** Standard pre-cast concrete (1:2:4) water line marker post marked (WL) set in concrete (1:3:6) base including excavation and disposal and all necessary painting approved blue color.	No	5		
G	Supply and install 25mm GI standpipe complete with lockable garden taps.	No	4		
	LAUNDRY AREA				
H	Rectangle Stainless Steel dhobi or Utility sink size - 620 x 485 x 230mm as EKOS ref EITISN669 supplied complete with 110 waste, basket strainer, bottle trap and Tap	NO	6		
	Sub-total (5/8) forwarded to plumbing summary (Page 276)				

Item No.	Description	UNIT	QNTY	RATE	Amount (KShs)
A	**Structural steel tower and tank 6m high from the ground** These works shall include fabricate delivery to site and install the tank tower, with approved metal primer and two coats of aluminum paint. The tower to be as described: · 100 x 100 x 6mm RHS Main member columns and beams, · 75 x 75 x 6 mm RHS platform members · 50 x 50 x 5mm RHS guard rail · 50 x 50 x 4mm Angle line bracing · 3mm thick MS plate (platform) · 3mm thick MS plate (gusset plate)	No	1		
B	Supply deliver and install high level 5000Litres PVC water storage tank with a cover complete with all necessary backnuts, long screw threads etc for satisfactory functioning of the system. The tank to be as rotto or approved equivalent	No	1		
C	SOLAR WATER HEATER Supply, deliver, install, test and commission the following solar hot water system appliances complete with all the accessories including all connections to the services, jointing to water supply, overflows, supports and all plugging and screwing to walls Solar Panels and Hot Water Storage Cylinder Supply, deliver and install pressurised solar water heating system comprising of 1No. 150 litres capacity hot water cylinder with 3KW electric booster element, 1No. Solar panels with selective (black chrome) 4m² dielectric nett absorbing area and all other necessary accessories	NO	1		
D	Allow for flushing and pressure testing of the internal plumbing system as required to the satisfaction of the Engineer.	ITEM	ITEM		
	Sub-total (6/8) forwarded to plumbing summary (Page 276)				

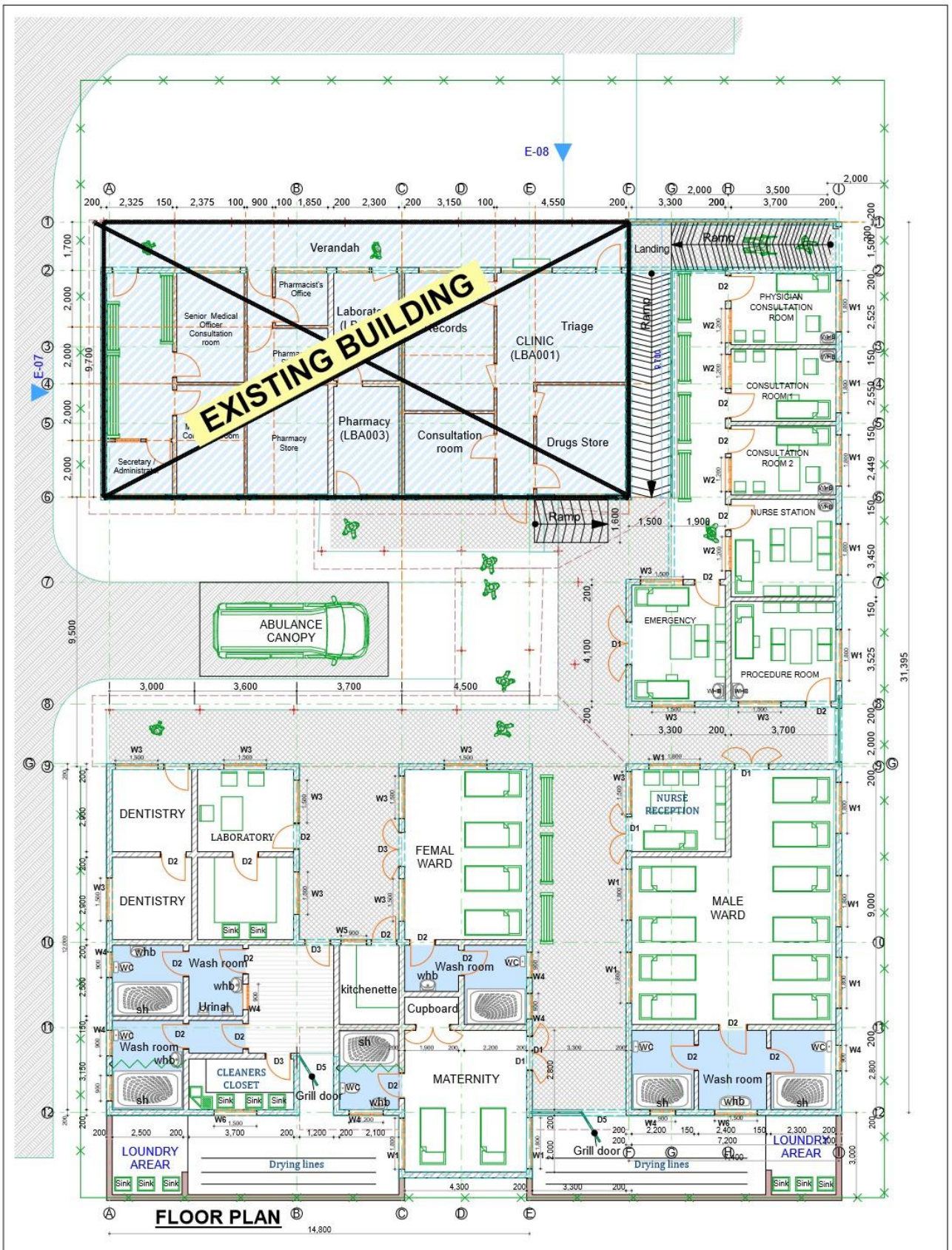
Item No.	Description	UNIT	QTY	RATE	Amount
	INTERNAL AND EXTERNAL DRAINAGE all provisional				
	All drainage pipes to be as 'Key Terrain or equal and approved equivalent. Allow for connection to the nearest manholes.				
A	UPVC and muPVC pipe work. Excavate trench for 150mm dia. Waste pipe work not exceeding1500mm deep and 500mm wide on average, part refill and ram, and surplus cart away.	Lm	80		
	UPVC and muPVC pipework				
B	150MM diameter waste pipe	Lm	38		
C	100mm diameter waste pipes	Lm	50		
D	50mm diameter waste pipes	Lm	35		
E	40mm diameter ditto	Lm	60		
F	100mm diameter bends	No.	12		
G	40mm diameter bends	No.	36		
H	50mm diameter bends	No.	18		
I	50mm diameter Tees with plugs	No.	15		
J	50x40mm diameter reducer	No.	13		
K	100mm diameter Vent cowl	No.	1		
L	100mm dia weathering slate and apron	No.	1		
M	100mm diameter gulley trap c/w chamber and mild steel grating		8		
N	50mm diameter floor trap	No.	15		
O	**Gully traps**				
	100mm diameter gulley trap complete with golden brown plastic seal pipe, cast aluminum Grating, chamber and Upvc cover.	NO	15		
P	**Pipe Sleeves**				
	75mm diameter heavy duty PVC pipe sleeves for crossing over columns , beams and slabs	LM	20		
	Inspection Chambers				
	Allow excavation ,concreting to class 1:3:6, walling 150mm thick solid concrete block walls with 1:3mortar and plastering to 1:2, Heavy duty PVC Rectangular cover and frame to specification for				
Q	Manhole not exceeding1000mm depth.	No	7		
R	Manhole exceeding1000mm depth but less than 1500m deep	No	3		
	Sub-total (7/8) forwarded to plumbing summary (Page 276)				

Item No	Description	Unit	QTY	Rate (KShs)	Amount (KShs)
	PORTABLE FIRE FIGHTING Supply, deliver, install and fix the following firefighting equipment in positions indicated on the contract drawings: -				
A	4.5 Kg Carbon dioxide gas fire extinguisher to BS 3326 and with normal charge and wall mounting brackets	NO	3		
B	5kg dry chemical powder portable fire extinguisher complete with pressure gauge, initial charge and mounting bracket	NO	3		
C	Fire Exit sign as described in section 4.8 of particular specifications	NO	3		
	Page subtotal (8/8) forwarded to plumbing summary (Page 276)				

Item No	PLUMBING MAIN SUMMARY PAGE	Amount
A	Sub total brought forward from page 269	
B	Sub total brought forward from page 270	
C	Sub total brought forward from page 271	
D	Sub total brought forward from page 272	
E	Sub total brought forward from page 273	
F	Sub total brought forward from page 274	
G	Sub total brought forward from page 275	
H	Sub total brought forward from page 276	
	TOTAL AMOUNT FOR PLUMBING AND MECHANICAL CARRIED TO GRAND SUMMARY Page 261	
	Total Amount in words:- Kenya Shillings; .... Stamp;	

	SCHEDULE RATES	UNIT	RATE
1	Dual/top flush plastic cistern	PC	
2	Gate valves 2inch as pegler	PC	
3	Booster pump pedrollo 1 HP	PC	
4	Circulation pump as grundfoss UPS 32-80	PC	
5	Water tank Rotto 10,000liters	PC	
6	Flexible sink connectors 1.5 feet	PC	
7	Ball valve 1.5 inch as pegler	PC	
8	Float switch	PC	
9	PPR pipes 63mm	PC	
10	PPR male adaptor 40mm	PC	

SECTION IX - DRAWINGS



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY P.O BOX 190 50100 KAKAMEGA.	Project: MINOR CONSTRUCTION WORKS AT UNIVERSITY CLINIC	Design by: OLA Drawn by: OLA Checked by: MMM	Approved by: Name: Signature: Date:	DATE: Nov. 2024 SCALE: NTS	Drawing No: ARCH 1

Photo A

Photo B

Photo C