



**TENDER NAME: PROPOSED CONSTRUCTION AND EQUIPPING OF A HOTWATER
TREATMENT PLANT AT THE NAIROBI HORTICULTURAL CENTRE**

TENDER NO: AFA/OT/09/2021-2022

CLOSING DATE: TUESDAY, 15TH MARCH 2022

TIME: 11.00 AM

1ST MARCH 2022

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APPENDIX TO THE PREFACE

GUIDELINES FOR PREPARING TENDER DOCUMENTS

1. GENERAL

- 1.1 Page 1 (The Heading of the Document), the Preface and its Annexes (if any), this Guidance to the Procuring Entity in preparing tender document to be issued to the Tenderers, and the Invitation to Tender Notice shall not be included in the Document to be issued to Tenderers. The Document to be issued to Tenderers shall start with the page titled “This Page, NAME, LOGO AND ADDRESS OF THE PROCURING ENTITY, NAME AND IDENTIFICATION OF TENDER”, including all the other material on the page completed appropriately.
- 1.2 If in the course of preparing a Tender Document or evaluating a tender/tenders following the criteria in the standard tender document, a Procuring Entity finds a provision it does not understand or agree with, it shall contact PPRA for clarifications before it changes anything, otherwise it will be considered as violating procurement rules.
- 1.3 The Procuring Entity should confirm that the requirements to be procured is/are in its approved Procurement Plan and budgeted for. It should also confirm the estimated cost of the contract(s), including the estimated time for executing the contract. The cost estimate helps the Procuring Entity determine the applicable procurement method to be used and the determination if the lowest evaluated cost is unrealistically too low or too high. Prior to finalizing the Tender Document, it is advisable for the Procuring Entity to recheck these estimates
- 1.5 The estimates must be prepared by an expert in the field of the subject contract i.e. by Engineers, IT Specialists, or Procurement Specialists, or other experts depending on the items to be procured. The Estimates should be based on current market prices or on data collected by the Procuring Entity based on past (*but not historic*) contracts.
- 1.6 The purpose of the estimates is to enable the Procuring Entity determine amounts of money to be inserted in the Tender Document for:
 - i) The Tender Security to be inserted in the Tender Document *should be expressed in absolute value which should not be more than 2% of the tender as valued by the Procuring Entity. It is advisable that the larger the estimated contract value, the smaller the required percentage of the tender security.*
 - ii) The minimum amount of money required for the tenderer to demonstrate that the tenderer 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 contract execution cash flow requirements, net of the Tenderer's other commitments. *Usually the assets should be about 2-3 months cash flow requirements based on the estimated completion time.*
 - iii) The minimum amount of money required as an average annual turnover for the tenderer to demonstrate that the tenderer is a prime IT service provider. *Usually the minimum amount of money is about 2.50 times the estimated cost of the contract (s).*
 - iv) The amount of money required to determine specific experience of the tenderer based on the minimum size of contract (s) substantially completed and that are similar to the proposed contract. *Normally the minimum amount of money required is about 80% of the estimated cost of the contract.*

2. PART1-TENDERING PROCEDURES

i) Section I - Instructions to Tenderers (ITT)

This Section provides relevant information to help tenderers prepare their tenders. Information is also provided on the submission, opening, and evaluation of tenders and on the award of Contracts. Section I contains provisions that are to be used without modification by the Procuring Entity or by a Tenderer.

ii) Section II-Tender Data Sheet (TDS)

This Section includes provisions that are specific to each procurement and that supplement Section I, Instructions to Tenderers. This section shall be completed appropriately by the Procuring Entity and not by a Tenderer. In any case, the Procuring Entity shall not add any item in the TDS not included in the Standard

Tender Document.

iii) Section III-Evaluation and Qualification Criteria

This Section specifies the criteria to determine the Lowest Evaluated Tender that would be considered for contract award; that is the tenderer that meets the qualification criteria and whose tender has been determined to be:

- a) Substantially responsive to the bidding document, and
- b) The lowest evaluated cost.

No other criterion shall be added by the Procuring Entity. Some parts of this section may be omitted by the Procuring Entity (and not by a Tenderer) to suit the subject procurement. For example, in some cases evaluation may not include Margin of Preference, so any reference to considerations for Margin of Preference will be omitted. The Procuring Entity will complete the parts of the Criterion only as guided and allowed in this section. For example, if the criterion provides “Post qualification and Contract award” and lists an item that says “Other conditions.....”, the Entity shall only include the conditions that are allowed in the Standard Tender Document.

iv) Section IV- Tendering Forms

This Section includes the Form of Tender and other forms to be submitted; e.g. priced Schedules of Requirements, Bills of Quantities, Schedules of technical proposal, including technical and financial qualifications, personnel, financial resources, equipment, Tender Security and others to be completed and submitted by the Tenderer as part of its Tender.

3. PART 2– PROCUREMENT ENTITY'S REQUIREMENTS

This Section contains the Procuring Entity's Schedules of Requirements, Specifications, Drawings, and supplementary information that describe the items to be procured. The Requirements shall also include (if so required) the environmental, social, health and safety requirements to be satisfied by the Tenderer in executing the contract.

4. PART 3– CONDITIONS OF CONTRACT AND CONTRACT FORMS

i) Section VIII- General Conditions of Contract (GCC)

This Section contains the general clauses to be applied in all contracts. This Section contains provisions that are to be used without modification by the Procuring Entity or by a Tenderer.

iii) Section IX- Special Conditions of Contract (SCC)

The contents of this Section supplement the General Conditions of Contract and shall be prepared by the Procuring Entity.

iv) Section X- Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms, when required, shall only be completed by the successful Tender after Contract award.

INVITATION TO TENDER

TENDER NOTICE

Agriculture and Food Authority (AFA) invites interested and eligible bidders to participate in the following tender:-

NO	Tender Ref No.	Tender Name	Eligibility	Closing Date
1	AFA/OT/09/2021-2022	PROPOSED CONSTRUCTION AND EQUIPPING OF A HOT WATER TREATMENT PLANT AT THENAIROBI HORTICULTURAL CENTRE	OPEN NATIONAL TENDER	TUESDAY, 15 TH MARCH 2022

Tender documents with detailed information and instructions can be down loaded from the following website:

www.afa.go.ke or www.tenders.go.ke free of charge.

Enquiries can be made via Email address tenders@afa.go.ke.

Completed tender documents shall be enclosed in plain sealed envelopes, marked with the **tender number** and **name** and be deposited in the Tender Box located at the reception of the Tea House or Addressed to:

The Director General

Agriculture and Food Authority

Tea House, Naivasha Road, off Ngong Road

P. O. Box 37962 - 00100

NAIROBI

To be received on or before Tuesday, 15th March 2022 at **11.00 a.m. Local Time**)

Tenders will be opened immediately thereafter in the presence of the candidates representatives who choose to attend at the **Agriculture and Food Authority Tea House Ground floor Conference Hall.**

Bidders are advised to regularly visit the AFA website. All addenda/ additional information on the tender shall be posted on AFA website as they become available.

AG.DIRECTOR GENERAL.

PART 1 - TENDERING PROCEDURES

SECTION I - INSTRUCTIONS TO TENDERERS

A General Provisions

1 Scope of Tender

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**.

2 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 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. The Procuring Entity shall indicate in the **TDS** firms (if any) that provided consulting services for the contract being tendered for. The Procuring Entity shall check whether the owners or controllers of the Tenderer are same as those that provided consulting services. The Procuring Entity shall, upon request, make available to any tenderer information that would give such firm unfair competitive advantage over competing firms.
- 2.4 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, prequalification 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.

3 Eligible Tenderers

- 3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT3.7 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or 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. The maximum number of JV members shall be specified in the **TDS**.
- 3.2 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; or
 - b. Receives or has received any direct or indirect subsidy from another tenderer; or
 - c. Has the same legal representative as another tenderer; or
 - 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; or
 - e. Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender; or
 - f. Any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as Engineer for the Contract implementation; or

- h) 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 or
- i) Has a close business or family relationship with a professional staff of the Procuring Entity who:
- 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) would 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.
- 3.3 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.
- 3.4 A tenderer shall not be involved in corrupt, coercive, obstructive, collusive or fraudulent practice. A tenderer that is proven to have been involved any of these practices shall be automatically disqualified and would not be awarded a contract.
- 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. 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 ITT4.8. 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 subcontractors or sub-consultants for any part of the Contract including related Services.
- 3.7 A Tenderer that has been debarred by the PPRA from participating in public procurement shall be ineligible to be prequalified for a 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 Tenderers that are state-owned enterprises or institutions may be eligible to compete and be awarded a Contract (s) only if they are accredited by PPRA to be (i) a legal public entity of the state 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 compete with firms in the private sector on an equal basis.
- 3.9 A Firms and individuals may be in eligible if their countries of origin (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (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, subcontracts and labor) from national 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 in “*SECTION III- EVALUATION AND QUALIFICATION CRITERIA, Item9*”.
- 3.11 Pursuant to the eligibility requirements of ITT3.10, at tender is considered a foreign tenderer, if it is registered in Kenya, has less than 51 percent ownership by nationals of Kenya and if it does not subcontract foreign contractors more than 10 percent of the contract price, excluding provisional sums. JVs are considered as foreign tenderers if the individual member firms are 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 under takings 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. AJV 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 Eligible Goods, Equipment, and Services

- 4.1 Goods, equipment and services to be supplied under the Contract may not have their origin in any country that is not eligible under ITT3.9. 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 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 the Site of the Works and its surroundings, and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be 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 against all 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 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 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

- i) Section I- Instructions to Tenderers (ITT)
- ii) Section II- Tender Data Sheet (TDS)
- iii) Section III- Evaluation and Qualification Criteria
- iv) Section IV- Tendering Forms

PART 2 Works Requirements

- i) Section V- Specifications
- ii) Section VI- Drawings

PART 3 Conditions of Contract and Contract Forms

- i) Section VII- General Conditions of Contract (GCC)
- ii) Section VII– Special Conditions of Contract (SC)
- iii) Section IX- Contract Forms

- 6.2 The Invitation to Tender Document Notice issued by the Procuring Entity is not part of the Tender document.
- 6.3 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 the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 10. In case 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 Site Visit

- 7.1 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Required Services and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for the Services. The costs of visiting the Site shall be at the Tenderer's own expense.

8 Pre-Tender Meeting and a pre-arranged pretender visit of the site of the works

- 8.1 The Procuring Entity shall specify in the **TDS** if a pre-tender conference will be held, when and where. The Procuring Entity shall also specify in the **TDS** if a pre-arranged pretender visit of the site of the works will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 8.2 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.
- 8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works, 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 in accordance with ITT6.3. Minutes shall not identify the source of the questions asked.
- 8.4 The Procuring Entity shall also promptly publish anonymized (*no names*) Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works at the web page identified **in the TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-Tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT10 and not through the minutes of the pre-Tender meeting. Nonattendance at the pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9 Clarification of Tender Documents

- 9.1 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 and the pre-arranged pretender visit of the site of the works if provided for in accordance with ITT8.4. 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** prior 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 6.3, 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 appropriately following the procedure under ITT 10.

10 Amendment of Tendering Document

- 10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.
- 10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's webpage in accordance with ITT8.1.
- 10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 24.2 below 2.

C. Preparation of Tenders

11 Cost of Tendering

- 11.1 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.

12 Language of Tender

- 12.1 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 the same language.

13 Documents Comprising the Tender

- 13.1 The Tender shall comprise the following:
- a) Form of Tender prepared in accordance with ITT 14;
 - b) Schedules of personnel, and work completed in accordance with ITT 14 and ITT 16;
 - c) Tender Security or Tender-Securing Declaration, in accordance with ITT 21.1;
 - d) Alternative Tender, if permissible, in accordance with ITT 15;
 - e) Authorization: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 22.3;
 - f) Qualifications: documentary evidence in accordance with ITT 19 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;
 - g) Conformity: a technical proposal in accordance with ITT 18;
 - h) Any other document required in the **TDS**.

In addition to the requirements under ITT 13.1, 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 Agreement. The Tenderer shall serialize pages of all tender documents submitted.

14 Form of Tender and Schedules

- 14.1 The Form of Tender and Schedules, 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 22.3. All blank spaces shall be filled in with the information requested. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

- 14.2 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.

15 Alternative Tenders

- 15.1 Unless otherwise specified in the **TDS**, alternative Tenders shall not be considered.
- 15.2 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.
- 15.3 Except as provided under ITT 15.4 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.
- 15.4 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 evaluation and described in Section VII, Works' Requirements.

16 Tender Prices and Discounts

- 16.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender shall conform to the requirements specified below.
- 16.2 The Tenderer shall price for all items of the Works, including design, management and quality control costs and shall be assumed to have included in the tender price all associated costs, including costs to meet Public Authorities' requirements.
- 16.3 The price to be quoted in the Form of Tender, in accordance with ITT 14.1, shall be the total price of the Tender, excluding any discounts offered.
- 16.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 14.1.
- 16.5 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.
- 16.6 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 16.4, provided the Tenders for all lots (contracts) are opened at the same time.
- 16.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 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.

17 Currencies of Tender and Payment

- 17.1 The currency (ies) of the Tender and the currency (ies) of payments shall be the same.
- 17.2 Tenderers shall quote entirely in Kenya Shillings.

- 17.2.1 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 indicate so in the Financial Proposal 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.
- 17.2.2 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 **TDS**, and shall apply for all payments under the Contract so that no exchange risk will be borne by the successful Tenderer.
- 17.3 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.

18 Documents Comprising the Technical Proposal

- 18.1 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.

19 Documents Establishing the Eligibility and Qualifications of the Tenderer

- 19.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.
- 19.2 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.
- 19.3 If a margin of preference applies as specified in accordance with ITT 36.1, national 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 36.1.
- 19.4 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 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 there by help to prevent any corrupt influence in relation to the procurement process or contract management.
- 19.5 The purpose of the information described **in ITT 19.2** 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.
- 19.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 19.5. 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.
- 19.7 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.
- 19.8 If a tenderer fails to submit the information required by these requirements, its tenderer 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.

- 19.9 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 be disqualified from the procurement process,
 - ii) If the contract has been awarded to that tenderer, the contract award will be set aside,
 - iii) The tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.
- 19.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences of ITT 19.9 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 tenderer.

20 Period of Validity of Tenders

- 20.1 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 24.1). A tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.
- 20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 21, 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 the request shall not be required or permitted to modify its Tender, except as provided in ITT 26.3.

21 Tender Security

- 21.1 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.
- 21.2 If a Tender Security is specified pursuant to ITT 21.1, 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; or
 - iv) A guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, and from a reputable source, and an eligible country.
- 21.3 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 24.2.
- 21.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 21.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.
- 21.5 The Tender Security shall be returned/released as promptly as possible
- a. The procurement proceedings are terminated;
 - b. The procuring entity determines that none of the submitted tenders is responsive;
 - c. A bidder declines to extend the tender validity.
 - d. Once the successful Tenderer has signed the Contract and furnished the required Performance Security.

- 21.6 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
 - b) If the successful Tenderer fails to:
 - i) Sign the Contract in accordance with ITT 50; or
 - ii) Furnish a performance security in accordance with ITT 51.

21.7 Where the Tender-Securing Declaration is executed the Procuring Entity will recommend to the PPRA that PPRA debars the Tenderer from participating in public procurement as provided in the law.

21.8 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 13.2.

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

22 Format and Signing of Tender

- 22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, 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 original and the copies, the original shall prevail.
- 22.2 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.
- 22.3 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 initialed by the person signing the Tender.
- 22.4 In case 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.
- 22.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. Submission and Opening of Tenders

23 Sealing and Marking of tenders

- 23.1 The Tender shall deliver the Proposals (technical and Financial) 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 "DO NOT 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:
- 23.2 In the single sealed envelope, or in a single sealed package, or in a single sealed container the following documents shall be closed and shall be addressed as follows:
- a. in an envelope or package or container marked "ORIGINAL", all documents comprising the Technical Proposal, and
 - b. in an envelope or package or container marked "COPIES", all required copies of the Technical Proposal; and

- c. in an envelope marked “ORIGINAL” the Form of Tender; and The inner envelopes or packages or containers shall:
 - i. bear the name and address of the Procuring Entity.
 - ii. bear the name and address of the Tender; and
 - iii. bear the name and Reference number of the Contract.

23.3 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 proposal. Tenders that are misplaced or opened prematurely will not be accepted.

23.4 The Proposal or its modifications must be sent to the address indicated in the **Data Sheet** and received by the Procuring Entity no later than the deadline indicated in the Data Sheet, or any extension to this deadline. Any Proposal or its modification received by the Procuring Entity after the deadline shall be declared late and rejected, and promptly returned unopened.

24 Deadline for Submission of Tenders

24.1 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**.

24.2 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.

25 Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 24. 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.

26 Withdrawal, Substitution, and Modification of Tenders

26.1 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 22.3, (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 22 and ITT 23 (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.

26.2 Tenders requested to be withdrawn in accordance with ITT 26.1 shall be returned unopened to the Tenderers.

26.3 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.

27 Tender Opening

27.1 The Procuring Entity's opening committee shall conduct the opening of the Technical Proposals in the presence of the Tenders representatives who choose to attend. The opening date, time and the address are stated in the **TDS**. The envelopes with the Form of Tender (Financial Proposal) shall remain sealed and shall be securely stored by the Procuring Entity until they are opened.

- 27.2 At the opening of the Technical Proposals the following shall be read out: (i) the name and the country of the Tender or, in case of a Joint Venture, the name of the Joint Venture, the name of the lead member and the names and the countries of all members; (ii) the presence or absence of a duly sealed envelope of the Form of Tender (Financial Proposal); (iii) any modifications to the Proposal submitted prior to Tender submission deadline; and (iv) any other information deemed appropriate or as indicated in the **TDS**.
- 27.3 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 readout at Tender opening.
- 27.4 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 readout at Tender opening.
- 27.5 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 authorization to request the modification and is readout at Tender opening.
- 27.6 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; 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.
- 27.7 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation.
- 27.8 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 25.1).
- 27.9 The Procuring Entity shall prepare minutes of the opening of technical proposals that shall include, as a minimum:
- a. the name of the Tenderer and whether there is a withdrawal, substitution, or modification; and any discounts offered as a separate letter;
 - b. presence of a sealed Form of Tender Price;
 - c. any alternative technical proposals, if any;
 - d. the presence or absence of a Tender Security, if one was required.
- 27.10 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 upon request.
- 27.11 After the technical evaluation is completed, the Procuring Entity shall notify those Tenderers whose Proposals were considered non-responsive to the Tender document for not meeting the minimum qualifying technical score, advising them the following: (i) their Proposal was not responsive to the Tender Document and did not meet the minimum qualifying technical score; (ii) provide information relating to the Tenderer's overall technical score, as well as scores obtained; (iii) their Forms of Tender will be returned unopened after completing the tender process and contract signing; and (iv) notify them of the date, time and location of the public opening of the Forms of Tender (Financial Proposals) and invite them to attend.
- 27.12 The opening date of the Forms of Tender should allow the Tenders sufficient time to decide for attending the opening and shall be not less than five (5) Business Days from the date of notification of the results of the technical evaluation. Tenderer's attendance at the opening of the Forms of Tender is optional and is at the Tenderer's choice. The Forms of Tender shall be opened publicly by the Procuring Entity's opening committee in the presence of the representatives of the Tenderers who chooses to attend.
- 27.13 At the opening, the names of the Tenders, and the overall technical scores, shall be read aloud. The Forms of Tender will then be inspected to confirm that they have remained sealed and unopened. These Forms of Tender shall be then opened, and the total prices read aloud and recorded. Upon request, copies of the record shall be sent to all Tenders who submitted Tenders.

E. Evaluation and Comparison of Tenders

28 Confidentiality

- 28.1 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 44.
- 28.2 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.
- 28.3 Not with standing ITT 28.2, 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.

29 Clarification of Tenders

- 29.1 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 33.
- 29.2 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.

30 Deviations, Reservations, and Omissions

- 30.1 During the evaluation of tenders, the following definitions apply:
- “Deviation” is a departure from the requirements specified in the tender document;
- “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tender document; and “Omission” is the failure to submit part or all of the information or documentation required in the Tender document.

31 Determination of Responsiveness

- 31.1 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 13.
- 31.2 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:
- Affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract; or
 - if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.
- 31.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 18, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.
- 31.4 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.

32 Non-material Non-conformities

- 32.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.
- 32.2 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 nonmaterial 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.
- 32.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable nonmaterial 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**.
- 32.4 Provided that the tender is substantially responsive, no correction of errors is expected in this tender.

33 Correction of Arithmetical Errors

- 33.1 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.
- 33.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis:
- 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.
 - 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
 - If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail.

34 Breakdown of the Tender Price

- 34.1 The completed Form of Tender shall have a table indicating the a detailed of the Tender Price which must include:
- Preliminary items such as insurance for works, noticeboards, statutory payments, site office costs, etc.,
 - Monthly cost of design/supervisory staff and site agents (up to contract completion);
 - Monthly cost of major items of equipment (up to contract completion);
 - Cost of the works (a lump sum figure).
 - Any items specified in the **TDS**.
- 34.2 The Breakdown of the Tender Price will form the basis of the Bills of Quantities and Payment Schedule and will be agreed with the Procuring Entity prior to signing of the contract and it will be part of the Contract Agreement. In addition, the Contract or shall be required to submit non-binding quarterly estimates of the payments which he expects to become due during the execution of the works.
- 34.3 In preparing the Schedule of Payments, every effort must be taken to ensure that the schedule is not seriously unbalanced and/or front loaded. If in the Procuring Entity's opinion, the schedule is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the schedule of prices with the scope of works, proposed methodology, schedule and any other requirements of the Contract.
- 34.4 On award of Contract, within the period specified in the **TDS**, the tenderer will prepare a complete Bills of Quantities for the works in conformity with ITT 31.1 (d) which will form the basis of preparing payment certificates. If in the Procuring Entity's opinion, the pricing in the Bills of Quantities is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications.

Clarifications may include detailed price analyses to demonstrate the consistency of the schedule of prices with the scope of works, proposed methodology, schedule and any other requirements of the Contract.

35 Conversion to Single Currency

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

36 Margin of Preference and Reservations

- 36.1 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.
- 36.2 A margin of preference shall not be allowed unless it is specified so in the **TDS**.
- 36.3 Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT36.1.

37 Nominated Subcontractors

- 37.1 **Unless** otherwise stated **in the TDS**, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Procuring Entity.
- 37.2 Tenderers may propose subcontracting 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.
- 37.3 The 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 by the Procuring Entity **in the TDS** as can 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.

38 Evaluation of Tenders

- 38.1 To assist in the examination, and evaluation of Technical Proposals, 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 any errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 33.
- 38.2 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.
- 38.3 The Procuring Entity's evaluation committee shall evaluate the Technical Proposals that have passed the eligibility and mandatory criteria, on the basis of their responsiveness to the Tender Documents. The eligibility and mandatory criteria shall include the following and any other that may include in the **Data sheet**.
- Firm has submitted the required number of copies of the Technical Proposals.
 - Firm has submitted a sealed form of Tender (Financial proposal).
 - The Proposal is valid for the required number of days.
 - The Technical Proposal is signed by the person with power of attorney, without material deviation, reservation, or omission.
 - The Technical Proposal is complete with all the forms and required documentary evidence submitted.
 - Valid Tax Compliance Certificate for Kenyan firms.
 - Key Experts are from eligible countries.
 - A tenderer has not participated in more than one tender, except for alternative tenders if so allowed.

- i) The tender is not in solvent, in receivership, bankrupt or in the process of being wound up.
- j) The Tenderer, its sub-consultants and experts have not engaged in or been convicted of corrupt or fraudulent practices.
- k) The Tenderer is neither precluded from entering into a Contract nor debarred by PPRA.
- l) The Tenderer has not proposed employing public officials, civil servants and employees of public institutions.
- m) The Tenderer, its sub-consult as and experts have no conflicts of interest.
- n) Any other material requirement in the ITT.

38.4 Only Technical proposals of tenderers that pass the preliminary examination will be evaluated. A Proposal shall be rejected at this stage if it does not respond to important aspects of the tender document if it fails to achieve the minimum technical score indicated in the **TDS**.

39 Comparison of Tender Prices

39.1 The Procuring Entity shall use the criteria and methodologies listed in the 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.

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

- a) The Tender price, including Provisional Sums, if any;
- b) Price adjustment due to unconditional discounts offered in accordance with ITT 16.4;
- c) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITT 35;
- d) any additional evaluation factors specified **in the TDS** and Section III, Evaluation and Qualification Criteria.

39.3 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.

39.4 In the case of multiple contracts or lots, Tenderers are allowed to tender for one or more lots and the methodology to determine the lowest evaluated cost of the lot (contract) and for combinations, including any discounts offered in the Form of Tender, is specified in Section III, Evaluation and Qualification Criteria.

39.5 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 38.2 to determine the Tender that has the lowest evaluated cost.

40 Abnormally Low Tenders

40.1 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 regards to the Tenderer's ability to perform the Contract for the offered Tender Price.

40.2 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.

40.3 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.

41 Abnormally High Tenders

41.1 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.

- 41.2 In case of an abnormally 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.
- 41.3 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.

42 Qualifications of the Tenderer

- 42.1 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.
- 42.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19. 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 Subcontractors if permitted in the Tender document), or any other firm (s) different from the Tenderer.
- 42.3 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.

43 Lowest Evaluated Tender

- 43.1 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) Substantially responsive to the Tender document; and
 - b) The lowest evaluated price.

44 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 there by incurring any liability to Tenderers. In case of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

F. AWARD OF CONTRACT

45 Award Criteria

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

46 Notice of Intention to enter into a Contract/Notification of award

- 46.1 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. instructions on how to request a debriefing and/or submit a complaint during the standstill period;

47 Standstill Period

- 47.1 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.
- 47.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter in to a Contract with the successful Tenderer.

48 Debriefing by the Procuring Entity

- 48.1 On receipt of the Procuring Entity's Notification of Intention to Enter in to a Contract referred to in ITT 46, 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.
- 48.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

49 Letter of Award

- 49.1 Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 44.1, upon addressing a complaint that has been filed within 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.

50 Signing of Contract

- 50.1 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.
- 50.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.
- 50.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period
- 50.4 Notwithstanding ITT 50.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Procuring Entity, to Kenya, or to the use of the Information System to be supplied,
- 50.5 Where such export restrictions arise from trade regulations from a country supplying those Information System, the Tenderer shall not be bound by its Tender, provided that the Tenderer can demonstrate that signing of the Contract Agreement has not been prevented by any lack of diligence on the part of the Tenderer in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the Information System under the terms of the Contract.

51 Performance Security

- 51.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance 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.

- 51.2 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 Lowest Evaluated Tender.
- 51.3 Performance security shall not be required for contracts estimated to cost less than Kenya shillings five million shillings.

52 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 read out at Tender opening.

53 Procurement Related Complaint and Administrative Review

53.1 The procedures for making Procurement-related Complaints or a request for review shall be specified in the **TDS**.

53.2 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 CONSTRUCTION AND EQUIPPING OF A HOT WATER TREATMENT PLANT AT THE NAIROBI HORTICULTURAL CENTRE The reference number of the Contract is AFA/OT/09/2021-2022 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_____ ETCN/A
ITT 2.3	2Firms that provided consulting services for the contract being tendered for are: STATE DEPARTMENT FOR PUBLIC WORKS,
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: [NONE]. NOT APPLICABLE IN THIS TENDER
B. Contents of Tender Document	
ITT 8.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: (1) Name of Procuring Entity Agriculture and Food Authority (2) The Director General Agriculture and Food Authority Tea House, Naivasha Road, off Ngong Road NAIROBI (3) Postal Address 37962– 00100, Nairobi, Kenya (4) Enquiries can be made via Email address tenders@afa.go.ke.
ITT 8.2	A.) Pre-Tender conference “<i>shall not</i>” take place B) A site visit conducted by the Agriculture and Food Authority <i>shall</i> take place at the following date, time and place: Date: 8th March 2022 Time: 12pm Place: Horticultural Crops Directorate Horticultural center next to JKIA, Mazao Road,
ITT 8.4	(1) Minutes of the pre-tender conference will/will not be published on Website. Pre -Tender Meeting not Available
ITT 9.1	The Procuring Entity shall publish its responses at the website _____
C. Preparation of Tenders	

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 13.1(h)	a) The Tenderer shall submit the following additional documents in its Tender: <i>[list any additional document not already listed in ITT 11.1 that must be submitted with the Tender. The list of additional documents should include the following:]</i> Evidence of access to lines of credit and availability of other financial resources b) Financial predictions for the current year and the two subsequent years, including the effect of known commitments c) Availability of critical equipment d) Availability of key technical personnel e) Similar work experience
ITT 15.1	Alternative Tenders <i>[insert “shall be” or “shall not be”]</i> considered. <i>[If alternatives shall be considered, the methodology shall be defined in Section III, Evaluation and Qualification Criteria.]</i>
ITT 15.2	Alternative times for completion <i>[insert “shall be” or “shall not be”]</i> _____permitted. <i>[If alternative times for completion are permitted, the evaluation method will be as specified in Section III, Evaluation and Qualification Criteria.]</i>
ITT 15.4	Alternative technical solutions shall be permitted for the following parts of the Works: _____ <i>[insert parts of the Works]:</i> <i>[If alternative technical solutions are permitted, the evaluation method will be as specified in Section III, Evaluation and Qualification Criteria.]</i>
ITT 16.5	The prices quoted by the Tenderer shall be: Fixed
ITT 17.2.2	The rates of exchange shall be those published by Central Bank as on the date Tender Closing Date
ITT 20.1	The Tender validity period shall be 126 days.
ITT 21.1	Tender shall provide a Tender Security. The type of Tender security shall be <i>Bank guarantee</i> in the amount of Kenya shillings One Million (Ksh 1,000,000.00) located in Kenya or Insurance bond from the firms approved by PPRA valid for 126 days.
ITT 22.1	Original Technical Proposal is Required Financial Proposal sealed in a separate Envelope
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of proof of Power of attorney
D. Submission and Opening of Tenders	
ITT 24.1	(A) For <u>Tender submission purposes</u> only, the Procuring Entity’s address is: (1) Agriculture and Food Authority (2) Postal Address (include name of Officer to be attentional) as 3 below (3) Physical address for hand Courier Delivery to an office or Tender Box located ground floor The Director General Agriculture and Food Authority Tea House, Naivasha Road, off Ngong Road NAIROBI (4) Date and time for submission of Tenders Tuesday, 15th March 2022 11.00 a.m. Local Time
ITT 24.1	Tenderers not allowed to submit Tenders electronically_____
ITT 27.1	Completed tender documents shall be enclosed in plain sealed envelopes, marked with the

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	tender number and name and be deposited in the Tender Box located at the reception of the Tea House or Addressed to: The Director General Agriculture and Food Authority Tea House, Naivasha Road, off Ngong Road P. O. Box 37962 – 00100 Nairobi To be received on or before Tuesday, 15th March 2022 at 11.00 a.m. Local Time)
E. Evaluation, and Comparison of Tenders	
ITT 32.3	The Procuring Entity shall rectify quantifiable nonmaterial nonconformities related to the Tender Price in the following manner: N/A _____
ITT 34.1 (e)	Any items specified in the Breakdown of the Tender Price (specify and list) _____
ITT 34.4	The Contractor will prepare a complete Bills of Quantities for the work within _____ days after award of Contract. Provided in the Tender Document
ITT 35.1	The currency that shall be used for Tender evaluation and comparison purposes to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: _____ <i>[insert name of currency]</i> The source of exchange rate shall be: The Central bank of Kenya The date for the exchange rate shall be: the deadline date for Submission of the Tenders. <i>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.</i> <i>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.</i>
ITT 36.2	A margin of preference <i>[insert either “shall” or “shall not”]</i> _____ apply. <i>[If a margin of preference applies, the application methodology shall be defined in <u>Section III – Evaluation and Qualification Criteria.</u>]</i>
ITT 37.1	At this time, the Procuring Entity _____ <i>[insert “intends” or “does not intend”]</i> to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 37.1	Contractor’s may propose subcontracting: Maximum percentage of subcontracting permitted is: 30% 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 37.1	<i>[Indicate N/A if not applicable]</i> The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: _____ _____ _____ For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.
ITT 37.2	The qualifications of the Specialized Subcontractors proposed by the Tenderer may be added/may not be added (<i>select one</i>) to the qualifications of the Tenderer.
ITT 38.4	A Proposal shall be rejected if it fails to achieve the minimum technical score of 80 out of 100
ITT 34.3	<i>[Indicate N/A if not applicable]</i> The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: _____ _____ _____ 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 39.2(d)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 39.4	Tenderers shall be <u>allowed/not allowed</u> (<i>select one</i>) to quote separate prices for different lots (contracts) and the methodology to determine the lowest tenderer is specified in Section III, Evaluation and Qualification Criteria.
ITT 51.2	Performance Security; other documents required are, list: _____ _____
ITT 53.1	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. 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: For the attention: <i>[insert full name of person receiving complaints]</i> Title/position: <i>[insert title/position]</i> Procuring Entity: <i>[insert name of Procuring Entity]</i> Email address: <i>[insert email address]</i> In summary, a Procurement-related Complaint may challenge any of the following: (i) the terms of the Tender Documents; and (ii) the Procuring Entity’s decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. General Provisions

- 1.1 This section contains the criteria that the Procuring Entity 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:
- For construction turn over 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.
 - Value of single contract- Exchange rate prevailing on the date of the contract signature.
 - Exchange rates shall be taken from the publicly available source identified in the ITT. 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. 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 requirements in the ITT35.3, and that the tender is complete in all aspects in meeting the requirements of “Part 2 – Procuring Entity's Works Requirements”. Tenders that do not submit a Financial offer will also be rejected at this stage. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered irresponsible and will not be considered further.

	MANDATORY REQUIREMENT FOR DETERMINATION OF RESPONSIVENESS.
MR 1	Valid Copy of certificate of incorporation/ Registration. (Certified by an advocate).
MR 2	Valid Current Tax Compliance Certificate issued by Kenya Revenue Authority.
MR 3	Duly completed and signed Tenderer's Eligibility- Confidential Business Questionnaire.
MR 4	Valid Copy of Current Single Business permit (Certified by an advocate).
MR 5	Submission of valid CR12/ CR13 form showing the list of directors /shareholding (issued within the last 12 months)
MR 6	Submission of original tender document (including attachments) properly TAPE BOUND and paginated in the correct sequence of 1,2,3... and all pages must be initialed/signed and stamped. NB: Spiral Binding and use of spring or Box Files will not be allowed and will result in automatic disqualification.
MR 7	Provide proof of Power of attorney to the Authorized person to sign the tender document.
MR 8	Submit certified copies of Audited accounts (Signed by Auditors and directors) for the last three (3) years (2018, 2019 and 2020) (Certified by an advocate). Provide the certified

	accountants practicing number.
MR9	Provide a Tender Security. The type of Tender security shall be Bank guarantee in the amount of Kenya shillings One Million (Ksh 1,000,000.00) in form of bank guarantee issued by a reputable bank located in Kenya or Insurance bond from the firms approved by PPRA valid for 126 days from the date of tender opening in the prescribed format.
MR 10	Main Contractor Building works 1. Must be Registered with the National Construction Authority (NCA) category 4 (Four) and above under building works category 2. Current annual contractors practicing license. Sub-Contractors For Electrical Works 1. Must be registered with NCA category 5 and above; 2. Current annual contractors practicing license. 3. Registration Certificate 4. Valid Tax Compliance Certificate Sub-Contractor for Mechanical works 1. Must be registered with NCA category 5 and above. 2. Current annual contractors practicing license. 3. Registration Certificate 4. Valid Tax Compliance Certificate
MR 11	Duly Completed And Signed Self Declaration That The Person/ Tenderer Is Not Debarred In The Matter Of The Public Procurement And Asset Disposal Act 2015. (Certified by an advocate).
MR 12	Duly completed and signed Declaration and Commitment of Code Ethics (Certified by an advocate).
MR 13	Duly Completed and Signed Self Declaration that the Person/Tenderer Will Not Engage In Any Corrupt Or Fraudulent Practice. (Certified by an advocate).
MR 14	Attendance of a mandatory Site Visit and issuance of Attendance Certificate Date: 8th March 2022 duly signed and stamped by the Directorate's Technical Department or their appointed agents.
MR 15	Attach evidence of past experience At least Three (3) Construction contracts of similar nature executed and satisfactorily completed proof shall be inform of LPOs, contracts or completion certificates.
MR 16	Attach evidence of the sub-contractors past experience At least Two (2) in Supply and installation and commissioning of an Agricultural / Horticultural related project executed within Kenya, or the East African Community or a broad form of contracts /LPOs or completion certificates.
MR 17	Attach manufacturer's authorization certificate for the equipment.
MR18	Attach duly signed subcontract agreement for supply of equipment
MR19	Attach manufacturer's equipment brochure and specifications for all line attachments.
MR 20	Sealed Technical proposal and Financial Proposal in Separate sealed Envelopes

3. Evaluation of the Technical Proposal

- 3.1 Technical Proposal shall be comprised of the Design Proposals for the Works and other forms as called for in Section IV, Tendering Forms. The Procuring Entity shall then consider the Technical Proposal of the Tenders who have been found responsive. The Procuring Entity shall allocate scores for each criterion on the Table of Scores below. The Procuring Entity will evaluate the Technical Proposals of all tenders that pass Preliminary examination for Determination of Responsiveness using the following criteria and scoring system as indicated below. This is to ensure that the Procuring Entity opens and considers and opens

Financial Proposals of proposals that the threshold score of the Technical Proposal.

- i) TABLES OF SCORES 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

TABLES OF SCORES FOR THE TECHNICAL EVALUATION NB: Only bidders who score 80 % and above shall be considered for further evaluation. **(Will be invited for Financial Opening)**

S/No	Description of items as they relate to whole of works	Maximum scores	Scores (to be allocated by the Procuring Entity)
1	Design Methodology to meet with Procuring entity's Requirements.	5	(0-5)
2	A well Described Construction methodology and management with timelines work plan	3	(0-3)
3	Work Program and Schedule for the whole project	5	(0-5)
4	Cash flow projections. 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 (Has financial resources equal or above the cost of the project)	5	(0-5)
5	Construction equipment. Schedule of contractors equipment relevant for the project (proof or evidence of ownership is required) Fill the Form EQU: EQUIPMENT in the prescribed Format in the Tender Document.	15	Heavy commercial equipment (Min. of 4) -- 8 Marks Site vehicles: Trucks, pick ups and the like (Min. of 4) -- 4 Marks - Other site equipment: concrete mixers, vibrators and the like (Min. of 6) --- 3 Marks
6	Environmental & Social Impact requirements.	5	(0-5)
7	Health & Safety Plan of the infrastructure. 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.	5	(0-5)

[illegible]

S/No	Description of items as they relate to whole of works	Maximum scores	Scores (to be allocated by the Procuring Entity)
9	Key Experts (both design and site agents) FORM PER - 1 Contractor's Representative and Key Personnel Schedule Must be filled in the Prescribed Format in the tender Document. FORM PER-2: Resume and Declaration - Contractor's Representative and Key Personnel Must be filled in the Prescribed Format in the tender Document. Project Manager Project Manager Qualifications – Minimum of a Bachelor's Degree in either Architecture, Quantity Surveying, Construction Management or Equivalent with relevant experience not less than ten (10) years. Mechanical / Plants / Industrial Engineer Must possess at least Bachelor Degree in Mechanical / Plants / Industrial Engineering from a recognized university Site Agent Site Agent Qualification – Minimum of a Higher Diploma/Diploma in Building Construction or Equivalent with experience of five (5) years. Artisans Artisans Qualifications – At least 3 No artisan (Diploma / Certificate / Grade Test in relevant Engineering field) Minimum of Trade test certificate in relevant field with experience of five (5) years.	7 5 5 3	With over 10 years relevant experience ---7 With over 5 years relevant experience -- 5 With under 5 years relevant experience – 2 With over 5 years relevant experience ---5 With over 3 years relevant experience -- 3 With under 3 years relevant experience -- 1 With over 5 years relevant experience ---5 With over 3 years relevant experience -- 3 With under 3 years relevant experience -- 1 Three Artisans with relevant experience --- 3 Two Artisans with relevant experience --- 2 One Artisan with relevant experience --- 1
10	Participation by Kenya citizens among proposed Key Experts	5	(0-5)

S/No	Description of items as they relate to whole of works	Maximum scores	Scores (to be allocated by the Procuring Entity)
11	1. Attach At least Three (3) Construction contracts of similar nature executed and satisfactorily completed proof shall be LPOs, contracts or completion Certificates each of minimum value of Kenya shillings Seventy Million (70,000,000.00) and Above fill form 5.8 FORM EXP - 4.1 in the prescribed Format in the Tender Document 2. At least two (2) of contracts for installation of Equipment of a similar nature executed within Kenya, or the East African Community or abroad, 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 (10,000,000.00) and Above proof shall be inform of Contracts or Completion Certificates. FORM EXP - 4.2 (b) in the prescribed Format in the Tender Document	9 6	Each Contract 3 Mrks Total 9 marks Each Contract 3 Mrks Total 6 marks
12	Proposal on Quality Assurance System(standards including ISO, Environmental and horticultural) – 2 marks	2	2
	TOTAL SCORES	100	

3.3 Qualification criteria

The number of points to be assigned to each of the above Key Experts positions shall be determined considering the following three sub-criteria and relevant percentage weights:

- (1) General qualifications (general education, training, and experience): *[insert weight between 10 and 30 %]*
- (2) Adequacy for the Assignment (relevant education, training, experience in the sector or similar assignments): *[insert weight between 60 and 70%]*
- (3) Relevant experience in the Kenya (working level fluency in local language(s)/knowledge of local culture or administrative system, government organization, etc.): *[insert weight between 0 and 10 %]*

Total weight: 100%

EXAMPLE ON HOW TO SCORE KEY EXPERTS for a Tenderer					
Key Experts (both design and site agents)				Max Score (20-40)	** 36
Points for Qualification criteria for Key					
(a) Position 1: ENGINEER-Team Leader				14 points	
(b) Position 2: ARCHITECT				12 points	
(c) Position 3: QUANTITY SURVEYOR				10 points	
PERSONNEL	(max allocated score)	ENGINEER-Team Leader	ARCHITECT	QUANTITY SURVEYOR	TOTAL
SCORES (average scores by each evaluator)					

General qualifications	20	15	16	18	
Adequacy for the Assignment	70	60	60	68	
Relevant experience in the Kenya	10	4	6	7	
TOTAL	100	79	82	83	
Scores out of		14	12	10	
Formula		$79/100 \times 14$	$82/100 \times 12$	$83/100 \times 10$	
Scores		11.06	9.84	8.3	29.2 out of 36

For Key Experts this tenderer will score 29 out of 36

3.4 A proposal shall be rejected at this stage if it does not respond to important aspects of the Terms of Reference or if it fails to achieve the minimum technical score of _____ (insert a figure 70t -80 scores)

4 Tender Evaluation (ITT 35)

Price evaluation: in addition to the criteria listed in ITT 36.2 (a) – (d) the following criteria shall apply:

- (i) Alternative Completion Times, if permitted under ITT 13.2, 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:
- (iv) Other Criteria; if permitted under ITT 36.2(e):
.....

5 Multiple Contracts

Multiple contracts will be permitted in accordance with ITT 36.4. Tenderers are evaluated on basis of Lots and the 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 contracts for all won Lots, provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the Lots. The tenderer will be awarded the combination of Lots for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

OPTION 2

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

6 Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 13.1, will be evaluated as follows:

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2- Procuring Entity's 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.

7 MARGIN OF PREFERENCE

Apply Margin of Preference, if so allowed to all evaluated and accepted tender as follows.

- 7.1 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 on the entire consortium team is less than fifty-one percent (51%).
- 7.2 Contractors applying for such preference 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.
- 7.3 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

- i) Group A: tenders offered by Kenyan Contractors and other Tenderers where percentage of shareholding by Kenyan citizens on the entire consortium team is less than fifty-one percent (51%), where Kenyan citizens hold shares of over fifty one percent (51%).
- ii) Group B: tenders offered by foreign Contractors and other Tenderers where percentage of shareholding by Kenyan citizens on the entire consortium team is less than fifty-one percent (51%).

8. Post qualification and Contract ward (ITT39), more specifically,

- 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

Technical Evaluation

ii)

- iv Contractor's Representative and Key Experts which are specified as

- iv) Other conditions depending on their seriousness.

- 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____(*specify years*). The required information shall be furnished in the appropriate form.

- Financial position and prospective long-term profitability 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 _____ (*specify years*). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing 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 FORMS SUMMARY

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	Conflict of Interest	No conflicts of interest in accordance with ITT 3.2	Form of Tender	
3	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender	
4	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI – 1.1 and 1.2, with attachments	
5	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	
6	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1 st January [.....].	Form CON-2	
7	Not debarred Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not debarred based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
8	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	
9	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1 st January [insert year]	Form CON – 2	
10	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 Kenya Shillings [insert amount] 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 Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.	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)
		(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 <i>[insert number of years]</i> years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.		
11	Average Annual Construction Turnover	Minimum average annual construction turnover of Kenya Shillings <i>[insert amount]</i> , equivalent calculated as total certified payments received for contracts in progress and/or completed within the last <i>[insert of year]</i> years, divided by <i>[insert number of years]</i> years	Form FIN – 3.2	
12	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 <i>[insert number of years]</i> years, starting 1 st January <i>[insert year]</i> .	4. Form EXP – 4.1 Experience	
13	Specific Construction & Contract Management Experience	A minimum number of <i>[state the number]</i> 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 <i>[insert year]</i> and tender submission deadline i.e. (number) contracts, each of minimum value Kenya shillings..... equivalent. <i>[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]</i> The similarity of the contracts shall be based on the following: <i>[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]</i>	Form EXP 4.2(a)	

SECTION IV – TENDERING FORMS

QUALIFICATION FORMS

4 FOREIGN TENDERERS 40% RULE

Pursuant to ITT 3.10, 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	Sub contracts 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			

5 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	

6 FORM PER - 1 Contractor's

Representative and Key Personnel Schedule

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

4. FORM PER-2:

Resume and Declaration - Contractor's Representative and Key Personnel

Name of Tenderer

Position [#1]: <i>[title of position from Form PER-1]</i>		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: <i>[language and levels of speaking, reading and writing skills]</i>	
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
<i>[main project details]</i>	<i>[role and responsibilities on the project]</i>	<i>[time in role]</i>	<i>[describe the experience relevant to this position]</i>

Declaration

I, the undersigned *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the Lowest 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:	<i>[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]</i>
Time commitment:	<i>[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]</i>

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.

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: <i>[indicate country of Constitution]</i>
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 4.4 ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 4.1 ☐ In case of state-owned enterprise or institution, in accordance with ITT 4.6, documents establishing: • Legal and financial autonomy • Operation under commercial law • 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.

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 4.4. ☐ 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 4.6. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

5.3 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 1 st January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.			
☐ Contract(s) not performed since 1 st January <i>[insert year]</i> 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)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert City/ street/building/floor number/room number/country]</i> Reason(s) for non-performance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>
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 award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), Kenya Shilling

			Equivalent (exchange rate)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert City/street/building/floor number/room number/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Procuring Entity" or "Contractor"]</i> Reason(s) for Litigation and award decision <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>

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*, KES 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)					

Type of Financial information in _____ (currency)	Historic information for previous _____ years, _____ (amount in currency, currency, exchange rate*, KES equivalent)				
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 statements¹ 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:				

5.10 **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	

5.11 **FORM EXP - 4.2(b)**

Construction Experience in Key Activities

Tenderer's Name: _____

Date: _____

Tenderer's JV Member Name: _____

Sub-contractor's Name² (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				

² If applicable

	Information
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.

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 and TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE, CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER, all 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 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 of Kenya Shillings *[Amount in figures]*Kenya Shillings *[amount in words]* _____

The above amount is broken down as per the Table below:

Breakdown of the Tender Price

Item	Description	Amount (in KES)	% to be paid in foreign currency	Foreign Currency
1	Preliminary items such as insurance for works, notice boards, statutory payments, site office costs, etc.			
2	Monthly cost of design/supervisory staff and site agents (up to contract completion).			
3	Monthly cost of major items of equipment (up to contract completion).			
4	Cost of the works (a lumpsum figure).			
5	Any items specified in the TDS <i>(Describe them here)</i>			
	TOTAL TENDER PRICE			

The amount quoted above does not include provisional sums, and only allows not more than two foreign currencies.

2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Project Manager's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Particular 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. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us. We further understand that you are not bound to accept the lowest or any tender you may receive.
5. We, the under signed, further declare that:
 - (i) No reservations: We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT8;
 - (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 debarred by the Authority based on execution of a Tender- Securing Declaration or Tender Securing Declaration in Kenya 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 item1 above is: *[Insert one of the options below as appropriate]*
 - (vi) Option 1, in case 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
Option 2, 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: We are 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 subcontractor, 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, Project Manager, 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 ITT 3.8];*

- 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 thereof 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;
- 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) **Code of Ethical Conduct**: We undertake to adhere by the Code of Ethical Conduct for Persons Participating in Public Procurement and Asset Disposal Activities in Kenya, copy available from www.pppra.go.ke 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:
- Tenderer's Eligibility; Confidential Business Questionnaire—to establish we are not in any conflict to interest.
 - Certificate of Independent Tender Determination—to declare that we completed the tender without colluding with other tenderers.
 - Self-Declaration of the Tenderer - to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
 - declaration and commitment to the code of ethics for Persons Participating in Public Procurement and Asset Disposal Activities in Kenya,

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.*

TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

Tender is instructed 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 (<i>postal and physical addresses, email, and telephone number</i>) 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 (<i>postal and physical addresses, email, and telephone number</i>) 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			

ii) 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		

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
	specified in this Tender Document.		
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.		

f) 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)

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]

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

1. THAT I am the Company Secretary/ Chief Executive/ Managing Director/ Principal Officer/ Director of *(insert name of the Company)* who is a Bidder in respect of **Tender No.....** for..... *(insert tender title/ description)* for..... *(insert name of the Procuring entity)* and duly authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.
3. THAT what is deponed to here in above is true to the best of my knowledge, information and belief.

.....
(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 the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/ or employees and/ or agents of..... (*insert name of the Procuring entity*) which is the procuring entity.
3. THAT the aforesaid Bidder, its servants and/or agents/subcontractors have not offered any inducement to any member of the Board, Management, Staff and/ or employees and/ or agents of..... (*name of the procuring entity*).
4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender.
5. THAT what is deponed to 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 activities in Kenya and my responsibilities under the Code.

I do hereby 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.....

APPENDIX 1- FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

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 behavior:
- 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 asset 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 in to 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 sub section (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 subcontractor for the tenderer 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.
- 2.3 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 misrepresentation, 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;
- iv) “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;
- v) “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 2.3e. 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 award¹ 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 sanction or debar or 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 inspect² 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.

¹For the avoidance of doubt, a party's ineligibility 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.

²Inspections 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 thereof 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 inafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here inafter 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]

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]

[Witness]

[Signature of the Guarantor]

[Seal]

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

TENDER-SECURING DECLARATION FORM {r 46 and 155(2)}

[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 name so fall 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

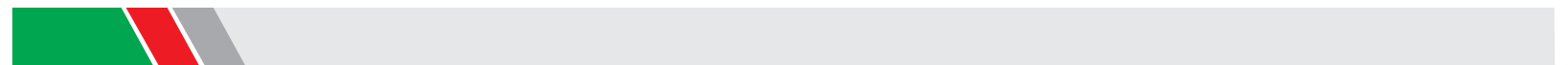


APPENDIX TO TENDER

Schedule of Currency requirements

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

<i>Name of currency</i>	<i>Amounts payable</i>
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 – PROCURING ENTITY'S INFRASTRUCTURAL FACILITY REQUIREMENTS

SECTION VII - PROCURING ENTITY'S REQUIREMENTS

Notes on preparing the Procuring Entity's Requirements

- 1.1 This Section contains the Scope, site information, the Specifications, the Drawings, the Environmental requirements, Supplementary Information that describe the Works and Forms to be used during the implementation of the contract.
- 1.2 This is a “single responsibility contract”. The Procuring Entity is not expected to invite proposals with detailed technical specifications. However, the Procuring Entity does and must know what it wants and must communicate its needs to the Tenderers. Hence, this section on Procuring Entity's Requirements replaces the usual Technical Specifications of a more traditional approach.
- 1.3 To enable Tenderers to offer appropriate solutions, the Procuring Entity should specify the purpose for which the Works are intended (see so Sub-Clause 4.1 of the Conditions of Contract) and its particular requirements as clearly as possible. The Procuring Entity's requirements must therefore, specify exactly the particular requirements for the completed Works. It will also be necessary to specify the tests that will be carried out on completion of the Works to verify compliance with the requirements specified.
- 1.4 The Procuring Entity may perform appropriate front-end tasks (such as geotechnical/environmental investigations and permit acquisitions) to enable the Procuring Entity to: (a) develop a realistic understanding of the contract's scope and budget; and (b) furnish Tenderers with information that they can reasonably rely upon in establishing their price and other commercial decisions.
- 1.5 While this section of the Tender document should endeavor to define the Procuring Entity's Requirements as precisely as possible *care must be taken to avoid over specifying details to the extent that the flexibility and potential benefits associated with a “single responsibility” tender proposal approach are seriously eroded or threatened.* This section on Procuring Entity's Requirements should, therefore, be carefully prepared *by experts who are familiar with the requirements and with the technical aspect of the required Works.* As the contractor is expected to carry out the design, the Procuring Entity should provide the criteria to which it expects the design to conform. The functional/performance specifications may specify the characteristics, nature and performance of the finished work and any limitations which the Procuring Entity wishes to impose.
- 1.6 The Procuring Entity's requirements should specify the Contractor's Documents (Sub-Clause 5.2 of the General Conditions of Contract) that are required and their submission/approval procedures.
- 1.7 The Procuring Entity's Requirements must be drawn up to permit the widest, possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials performance and/or functions of the Works. The Procuring Entity's Requirements should stipulate that all goods and materials to be incorporated in the Works are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials.
- 1.8 Care must be taken when drafting the Procuring Entity's Requirements to ensure that the requirements are not restrictive. Recognized international standards should be used as much as possible for the description of goods, materials and workmanship. Where other particular standards are specified, whether national standards of Kenya or other standards, it should be stated that goods, materials and workmanship meeting other authoritative standards and which promise to ensure equal or higher quality than the standards specified, will also be acceptable. Where a brand name of a product is specified it should always be qualified with the terms “or equivalent”.
- 1.9 For such a turnkey contract, no detail drawings would generally be available when inviting proposals. It would, however, be useful to include **conceptual drawings** and/or outline design, if any and as appropriate, to supplement or help explain the general concept of the Procuring Entity's needs. Tenderers should be advised to the extent to which the Procuring Entity's outline design is a suggestion or a requirement.
- 1.10 Pursuant to Sub-Clause 4.10 of the Conditions of Contract, the Procuring Entity shall make available to Tenderers all relevant information in the Procuring Entity's possession pertaining to the site and the proposed works. Typical information to be provided by the Procuring Entity may include:
 - a) Statutory planning and zoning constraints
 - b) Orders, consents, permits, licenses and compliance requirements

- c) Topographic survey
- d) Ground investigation and condition information
- e) Utility records and L and ownership information
- f) Ground water, surface water and hydrological information
- g) Environmental and social baseline data
- h) Details of known accommodation works requirements
- i) As built records of existing infrastructure
- j) Details of any risks or hazards
- k) Any other physical constraints
- l) Quality and Environmental, health and safety systems to apply
- m) Stakeholder engagement records and requirements on sub-surface and hydrological conditions at the Site, including environmental aspects.

1.11 In addition, the Procuring Entity's Requirements should also include, as appropriate, information of a technical nature referring to Procuring Entity's Requirements in the following Sub-Clauses of the Conditions of Contract:

Sub-Clause No.	Information required	Remarks
1.8	Number of copies of Contractor's Documents Publications to be kept on Site	
1.11	Intellectual Property rights retained by the Procuring Entity	
1.13	Permissions being obtained by the Procuring Entity	
2.1	Phased possession of foundations, structures, plant or means of access	Please also refer to Sub-Clause 2.1 (Part A- Contract Data) to ensure consistency and applicability.
4.1	Intended purposes for which the Works are required	As mentioned above
4.6	Other contractors and others on Site, if any	
4.7	Setting- out points, lines and levels of reference	The Sub-Clause states: "... specified in the contract or notified by the Engineer"
4.18	Emissions, surface discharges and effluent	
4.19	Details and prices of electricity, water, gas and other services if the services are to be available for the Contractor to use.	
4.20	Details of Procuring Entity's equipment and free-issue material, if any.	
5.1	Criteria (if any) for design personnel	Consistent with any such requirement in Section III- Evaluation and Qualification Criteria
5.2	Contractor's Documents required and whether for approval	Specify, as appropriate, the extent to which the Contractor's Documents are required, which of them are required for approval (not just review), and the submission procedures. Some examples, which are in no way exhaustive and have to be adapted, are given under Contractor's Documents in this Section VII.
5.4	Applicable Technical Standards and regulations	
5.5	Training of Procuring Entity's Personnel	
5.6	As- built drawings and other records of the Works	
5.7	Operation and maintenance manuals and any other manuals for these purposes	
6.6	Facilities for Personnel	
7.2	Samples	

Sub-Clause No.	Information required	Remarks
7.4	Testing	
7.8	Royalties	
9.1	Tests on Completion	
9.4	Damages for failure to pass Tests on Completion	
12.1	Tests after Completion	
12.4	Damages for failure to pass Tests after Completion	

1.11 Any additional sustainable procurement technical requirements (beyond the ESHS requirements stated in the Environmental, Social, Health and Safety Requirements section below) shall be clearly specified. The sustainable procurement requirements may be specified to enable evaluation of such a requirement on a pass/fail basis and/or rated criteria (point system), as appropriate.

1.12 Environmental, social, health and safety requirements; The Procuring Entity should use the services of a suitably qualified environmental, social, health and safety specialist/s to prepare this section, working with a procurement specialist/s. The Procuring Entity should attach or refer to the Procuring Entity's environmental, social, health and safety policies that will apply to the project.

1.13 SUGGESTED CONTENT FOR AN ENVIRONMENTAL AND SOCIAL POLICY

1.13.1 The Works' policy goal, as a minimum, should be stated to integrate environmental protection, occupational and community health and safety, gender, equality, child protection, vulnerable people (including those with disabilities), gender-based violence, HIV/AIDS awareness and prevention and wide stakeholder engagement in the planning processes, programs, and activities of the parties involved in the execution of the Works. The policy should set the frame for monitoring, continuously improving processes and activities and for reporting on the compliance with the policy.

1.13.2 The policy should, as far as possible, be brief but specific and explicit, and measurable, to enable reporting of compliance with the policy in accordance with the Particular Conditions of the Contract Sub-Clause 4.21 and Appendix C to the General Conditions of Contract.

As a minimum, the policy is set out to the commitments to:

- i) apply good international industry practice to protect and conserve the natural environment and to minimize unavoidable impacts;
- ii) provide and maintain a healthy and safe work environment and safe systems of work;
- iii) protect the health and safety of local communities and users, with particular concern for those who are disabled, elderly, or otherwise vulnerable;
- iv) ensure that terms of employment and working conditions of all workers engaged in the Works meet the requirements of national labor laws of Kenya;
- v) be intolerant of, and enforce disciplinary measures for illegal activities. To be intolerant of, and enforce disciplinary measures for gender violence, child sacrifice, child defilement, and sexual harassment;
- vi) incorporate a gender perspective and provide an enabling environment where women and men have equal opportunity to participate in, and benefit from, planning and development of the Works;
- vii) work co-operatively, including with end users of the Works, relevant authorities, contractors and local communities;
- viii) engage with and listen to affected persons and organizations and be responsive to their concerns, with special regard for vulnerable, disabled, and elderly people;
- ix) provide an environment that fosters the exchange of information, views, and ideas that is free of any fear of retaliation;
- x) minimize the risk of HIV transmission and to mitigate the effects of HIV/AIDS associated with the execution of the Works;

1.13.3 The policy should be signed by the senior manager of the Procuring Entity. This is to signal the intent that it will be applied rigorously. When preparing the specifications have regard to the relevant General Conditions of Contract and Particular Conditions of Contract.

2 Scope of the Works

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>BILL NO. 1</u>				
	<u>PACK HOUSE STRUCTURE</u>				
	<u>BILL NO. 1A: SUBSTRUCTURE / FOUNDATION WORKS</u>				
	<u>(ALL PROVISIONAL)</u>				
	NOTE; (I) All work measured under this element is up to and including the floor slab but excluding the finishes thereon.				
A	Clear the site of all bush scrub undergrowth and small trees grub up roots and cart away or burn all arising (approx. area 890 sq. sm)				
	<u>Excavations and earthworks</u>	880	SM		
B	Excavate oversite average 200mm deep to remove vegetable soil load up wheel and deposit about 100metres away and later spread and level on site where directed	880	SM		
C	Mechanical, Excavate to remove black cotton soil not exceeding 1.50 metres deep commencing at stripped and remove from site	1056	CM		
D	Excavate for strip foundation trenches occurring not exceeding 1.5metres deep commencing from reduced level	155	CM		
E	Excavate for column bases occurring not exceeding 1.5metres deep commencing from reduced level	130	CM		
F	<u>Extra over</u> excavations for excavating in rock irrespective of class	25	CM		
G	Allow for keeping excavations free from mud and all water including spring and running water by pumping pailing or other approved means.		ITEM		

H	Allow for planking and strutting to sides of excavations		ITEM		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>Disposal</u> Load surplus excavated material and cart away	1200	CM		
B	<u>Filling</u> Return fill and ram selected excavated material around foundations.	141	CM		
C	<u>Hardcore as described</u> Imported hardcore filling including levelling and consolidating in 150mm layers	778	CM		
D	<u>Blinding</u> 50mm Thick Quarry dust blinding to the surface of hardcore;rolled smooth to receive polythene sheeting(m.s)	778	SM		
E	<u>Insecticide treatment</u> "TERMIDOL" or other equal and approved chemical insecticide treatment prepared and applied according to the manufacturer's printed instructions.				
	<u>Damp proof membrane</u>	778	SM		
F	500 Gauge polythene or other equal and approved plastic sheet damp proof membrane laid over blinding(measured nett - allow for laps) <u>In-situ concrete work</u> <u>Mass concrete (1:3:6/38-38mm aggregate)</u>	778	SM		
G	50mm Thick blinding under strip foundations	110	SM		

H	50mm Thick blinding under column bases	88	SM		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>Vibrated reinforced concrete</u> <u>(1:2:4/20-20mm aggregate) as described in:</u> Strip foundations	20	CM		
B	Column bases	35	CM		
C	Columns	6	CM		
D	Ground Beams	2	CM		
E	External Ramps	10	CM		
F	200 mm Thick ground floor slab	778	SM		
	<u>Steel reinforcement</u>				
	<u>Supply and fix bars reinforcement</u> <u>including bending, hooks, tyingwire,</u> <u>cutting spacers and supporting all in</u> <u>position as described</u>				
	<u>High tensile square twisted bars to B.S. 4461</u>				
G	8 mm Diameter	285	KG.		
H	10 mm Diameter	1920	KG.		
J	12 mm Diameter	2268	KG.		
K	16 mm Diameter	451	KG.		
	<u>Mesh reinforcement</u>				
L	Fabric mesh reinforcement to B.S. 4483 ref: A142 including laps tyingwire and spacer blocks complete(measured nett-allow for laps) (Double mesh)				
	<u>Sawn formwork as described to:</u>	778	SM		
M	Vertical sides of strip foundations	90	SM		
N	Vertical sides of Column bases	88	SM		
P	Vertical sides of Columns	38	SM		
Q	Vertical Sides of circular columns	0	SM		

R	Edge of floor slab 75-150mm high	115	LM		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	Foundation walling 200mm Thick rough chisel dressed natural stone walling bedded and jointed in cement and sand (1:3) mortar and reinforced with and including 20swg x 25mm wide hoopiron in every alternate course <u>Plinth area finishes</u>	290	SM		
B	12mm Thick cement and sand (1:3) wood float render to plinth area	48	SM		
C	Prepare and apply three coats black bitumastic paint to rendered area	48			
			SM		
	Carried to collection	below			
	<u>COLLECTION</u>				
	Brought Forward from Page No. BW		1		
	Brought Forward from Page No. BW		2		
	Brought Forward from Page No. BW		3		
	Brought Down from Page No. BW		Above		
	<u>TOTAL FOR ELEMENT NO. 1</u> <u>BILL NO. 1A: SUBSTRUCTURE / FOUNDATION WORKS</u> CARRIED TO BILL SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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	<u>BILL NO. 1B: PACK HOUSE : GROUND FLOOR/MEZZANINE FL</u>				
	<u>ELEMENT NO. 2</u>				
	<u>WALLING (ALL PROVISIONAL)</u>				
	<u>Fine chiselled natural stone walling bedded and jointed in cement and sand (1:3) mortar and reinforced with and including 20swg x 25mm wide hoop iron in alternate courses; with horizontal keys externally; internally left plain ready for plaster (m.s)</u>				
A	200mm Thick External wall reinforced in every third course	317	SM		
B	200mm Thick Gable Wall	0	SM		
	<u>Fine machine cut natural stone walling bedded and jointed in cement and sand (1:3) mortar and reinforced with and including 20swg x 25mm wide hoopiron; internally left plain ready for plaster (m.s)</u>				
C	200mm Thick Internal wall reinforced in every third course	270	SM		
D	100mm Thick Internal wall reinforced in every third course	78	SM		
	<u>Burnt Clay louvered wall; bedded and jointed in matching cement and sand (1:3) mortar and reinforced with and including 20swg x 25mm wide hoopiron; and with horizontal keys both sides</u>				
E	200mm Thick reinforced in every third course	6	SM		
	<u>Horizontal damp proof course; one layer of 3 - ply bituminous felt or other equal and approved (measured nett - allow for laps)</u>				
F	200mm Wide levelled and bedded in cement and sand (1:3) mortar under walls	210	LM		
G	150 mm Wide levelled and bedded in cement and sand (1:3) mortar under walls	0	LM		
H	100 mm Wide levelled and bedded in cement and sand (1:3) mortar under walls	18	LM		
	<u>Aluminium Partitions</u>				

J	Aluminium Partitions in standard 100 x 50 mm powder coated aluminium sections complete with 25 x 25 mm bead sections, overall height 2700 mm high, infilled in laminated 19 mm thick MDF boards upto 1200 mm, 6 mm thick clear sheet glass upto 2100 mm covered in "Llumar" or equivalent translucent one way film, 6 mm thick clear sheet glass upto 2700 mm; all fitted with approved 25 mm thick rubber beads	0	SM		
	<u>TOTAL FOR ELEMENT NO.3</u> <u>WALLING</u> <u>CARRIED TO SUMMARY</u>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>ELEMENT NO. 5</u> <u>INTERNAL WALL FINISHES</u> (ALL PROVISIONAL)				
A	Hack out joints and apply 12mm thick gauged lime plaster (1:2:9) in two coats finished with steel trowel on natural stone walling and beams	985	SM		
B	10mm Thick cement and sand (1:4) screed finished to receive glazed tiling	130	SM		
	<u>Background hardened Industrial backing in Cement and sand (1:3) in:</u>				
C	Supply and Install 20mm Thick hardened Plaster with and including with micro fiber 'Type MD fibrillated fiber' reinforcement and finished with and including 10mm thick Frosroc Nitoflor Levelcrete or other equal and approved underlay finished smooth to receive Epoxy Wall Finish (m.s) to approval of the Architect.				
	<u>5mm thick Epoxy Wall Installations in accordance to BS6319 PTS 3 & 7 & ASTM C579 & D4060.</u>	95	SM		
D	Prepare the plastered surface (m.s), supply and install 5mm thick epoxy wall finish all in strict accordance with manufacturer's instructions with minimum comprehensive strength of 85N/mm2 as per ASTM C579 and Flexural Strength of 28N/mm2 and Tensile Strength of 16N/mm2 both as per BS 6319, that meets chemical and abrasion resistance all to manufacturer's Instructions and to approval of Architect.				
	<u>300 x 300 x 8 mm Thick coloured glazed ceramic wall tiles as "Saj" or equal and approved manufacturer jointed and pointed with matching white cement .</u>	95	SM		
E	Tiling on walls, including 150 mm wide matching dividing strip; and rounding on all edges with and including chrome edge strips	130	SM		
	<u>Painting and decorations</u>				

	<u>Prepare and apply one undercoat and two finishing coats plastic</u> <u>Vinyl matt or equivalent emulsion paint on:-</u>				
F	Plastered surfaces	985	SM		
	<u>WALL INSULATIONS CLADDING</u>				
	<u>Interlocking Wall insulations panels</u>				
G	Supply and install prefabricated expanded polystyrene (EPS) panel of size 1500mm x 3000mm x 50mm thick with a fire resistant mineral fiber core, suitable for fire rated wall Panels achieve three hour fire resistance ratings with a unique hidden fastener for increased aesthetic sound attenuated, Core material shall be nontoxic, does not release gases in a fire and has a smoke developed rating of zero. It is also water repellent, free of (H)CFCs and recyclable complete with all necessary accessories, sundry items for reinforcement and fixing all to Architect's / Engineer's approval and detail.	0	SM		
	<u>TOTAL FOR ELEMENT NO. 5</u> <u>INTERNAL WALL FINISHES</u> <u>CARRIED TO SUMMARY</u>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>ELEMENT NO. 6</u> <u>FLOOR FINISHES</u> (ALL PROVISIONAL)				
	<u>In situ cement and sand (1:3) screeded beds ,with wood trowelled finish, on concrete</u>				
A	25 mm screed to receive Ceramic tiles (ms)	102	SM		
B	25 mm screed to receive Terrazo to landings/lobby (ms)	0	SM		
C	25 mm screed to receive Terrazo to 150mm high riser (ms)	0	LM		
D	25 mm screed to receive Terrazo to 300mm wide treads (ms)	0	LM		
	<u>Background hardened Industrial backing in Cement and sand (1:3) in:</u>				
E	Supply and Install 40mm Thick hardened screed with and including with micro fiber 'Type MD fibrillated fiber' reinforcement and finished with and including 10mm thick Frosroc Nitoflor Levelcrete or other equal and approved underlay finished smooth to receive Epoxy Floor Finish (m.s) to approval of the Architect.	676	SM		
F	Ditto in skirting 150mm High.	130	LM		
	5mm thick Epoxy Floor Installations in accordance to BS6319 PTS 3 & 7 & ASTM C579 & D4060.				

G	Prepare the screeded surface (m.s), supply and install 5mm thick epoxy floor finish all in strict accordance with manufacturer's instructions with minimum comprehensive strength of 85N/mm2 as per ASTM C579 and Flexural Strength of 28N/mm2 and Tensile Strength of 16N/mm2 both as per BS 6319, that meets chemical and abrasion resistance all to manufacturer's Instructions and to approval of Architect.	676	SM		
H	Ditto for allowance for monolithic skirting 150mm high.	130	LM		
J	<u>600 x 300 x 8 mm Thick floor approved ceramic floor tiles as "Saj" or equal and approved manufacturer jointed and pointed with matching white cement:</u> Tiling	102	SM		
K	Ditto 100 mm high skirting <u>Terrazzo (1:3) with approved coloured chippings, ground and polished smooth, including approved plastic dividing strips and non slip carborandums on staircase treads:</u>	116	LM		
L	20 mm thick paving in landings/lobby	0	SM		
M	Ditto 300 mm wide treads	0	LM		
N	Ditto 150 mm high risers	0	LM		
P	Ditto 100 mm high skirting <u>Stainless Steel Grating:</u>	0	LM		
Q	Stainless steel Grating along channel size 400mm wide,comprising of 30 x 3mm thick blades at 30mm centres,twice welded to 2No. 40 x 40 x 3 mm thick Square hollow section to ends and along drain on 40 x 40 mm stainless steel angles frames	65	LM		
	<u>TOTAL FOR ELEMENT NO. 6</u> <u>FLOOR FINISHES</u> CARRIED TO SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>ELEMENT NO. 8</u> <u>WINDOWS</u> <u>(ALL PROVISIONAL)</u>				
A	175 x 75 mm thick precast concrete window; weathered and throated <u>Prime grade wrot cypress</u>	62	LM		
B	225 x 25mm window board with one labour.	0	LM		

C	25mm quadrant bead	0	LM		
	<u>Curtain Rods</u>				
D	25 mm diameter chrome plated pipe as curtain rail complete with brackets, rings, rollers and all other necessary accessories.	0	LM		
	<u>Painting</u>				
E	Ditto window board surfaces 100 - 200mm girth	0	LM		
F	Ditto; not exceeding 100mm girth	0	LM		
	<u>Steel Casement Windows</u>				
	<u>Purpose made steel window casements in 25 mm thick z - sections, Tsections and flat bars; complete with hinges, stays, fasteners, permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Burglar proofing grilles included)</u>				
G	Window Size 2400 x 1200 mm high	11	NO		
H	Window Size 2100 x 1200 mm high	2	NO		
J	Window Size 1800 x 1200 mm high	6	NO		
K	Window Size 1600 x 1200 mm high	2	NO		
L	Window Size 1500 x 1200 mm high	4	NO		
M	Window Size 1100 x 1200 mm high	2	NO		
N	Window Size 1500 x 600 mm high	5	NO		
P	Window Size 1100 x 600 mm high	0	NO		
Q	Window Size 900 x 600 mm high	2	NO		
	Carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>GLASS & GLAZING TO METAL WITH PUTTY</u>				
	<u>Clear sheet Glass</u>				
A	4 mm thick clear and one way tinted in selected areas	64	SM		
	<u>Obscure sheet Glass</u>				
B	5 mm thick	6	SM		
	<u>Prepare and apply two undercoats</u> <u>and one finishing coat gloss oil</u> <u>paint to</u>				
C	Steel window surfaces / grilles; measured generally	70	SM		
	Carried to collection				
	COLLECTIONS				
	Brought Forward from Page No. BW		8		
	Brought Down from		Above		
	<u>TOTAL FOR ELEMENT NO. 8</u> <u>WINDOWS</u> <u>CARRIED TO SUMMARY</u>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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	<u>ELEMENT NO. 9</u>				
	<u>DOORS</u>				
	<u>(ALL PROVISIONAL)</u>				
	<u>Steel Casement Doors</u>				
	Standard door complete with hinges, permanent vent with mosquito gauze and sheet metal hood etc assembled and fixed to opening including cutting and pinning lugs to concrete or blockwork surround and bedding frame in cement and sand mortar (1:4) (Grille, 3 lever "Union" or approved equivalent steel lock and Glazing included)				
A	Door Overall size 1800 x 3000 mm high; Double door	4	NO		
B	Door Overall size 900 x 3000 mm high; Single door	5	NO		
B	Door Overall size 900 x 2400 mm high; Single door	1	NO		
	<u>Metal sliding doors</u>				
	<u>50mm Thick sliding door size comprising 150 x 50 x</u> <u>3mm RHS stiles, top , 4No middle rails and 10No vertical</u> <u>supports, all covered with 16 gauge sheets welded to</u> <u>framework complete with 150 x 75mm U-shaped sliding</u> <u>track consisting of 5mm thick flats and 50 x 75 x 3mm</u> <u>RHS track rail; stainless steel rollers and guide posts and</u> <u>stoppers and three coats gloss paint all to Architect's</u> <u>approval</u>				
C	Door Overall size 5200 x 3,150mm high	0	NO		
D	Door Overall size 3,000 x 3,150mm high	0	NO		
E		0	NO		
F	Door Overall size 2,100 x 3,150mm high <u>Solid core flush doors:</u> 50 mm thick single -leaf size 900 X 2400 mm high overall with quality 4 mm thick plywood facing ; complete with a 5 mm thick glazed fanlight top size 900 x 300 mm high with and including matching timber glazing beads	15	NO		
G	50 mm thick single -leaf size 1200 X 2400 mm high overall with quality 4 mm thick plywood facing ; complete with a 5 mm thick glazed fanlight top size 900 x 300 mm high with and including matching timber glazing beads	0	NO		
	Carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
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	<u>Door Frames</u>				
	<u>Wrot Mahogany backs primed before fixing in aluminium wood primer:</u>				
A	150 x 50 mm Frame once rebated	0	LM		
B	45 x 25 mm architrave with one labour	0	LM		
C	25mm quadrant	0	LM		
	<u>Wrot Cypress backs primed before fixing in aluminium wood primer:</u>				
D	150 x 50 mm Frame once rebated	86	LM		
E	45 x 25 mm architrave with one labour	86	LM		
F	25mm quadrant	86	LM		
	<u>Ironmongery as per Union Catalogue</u>				
G	Three lever mortice lock complete with quality furniture	0	NO		
H	Two lever mortice lock complete with quality furniture	15	NO		
J	38mm rubber door stop fixed with rawl bolt	15	NO		
K	100mm pressed steel butt hinges	23	Prs		
	<u>Prepare and Apply Three Coats of Gloss Oil Paint to:-</u>				
L	Steel door general surfaces	75	SM		
M	Timber door general surfaces	65	SM		
	<u>Prepare and Apply Three Coats of Clear polyurethane varnish to:-</u>				
N	Timber door general surfaces	0	SM		
	Carried to collection				
	COLLECTIONS				
	Brought Forward from Page No. BW		10		
	Brought Down from		Above		
	<u>TOTAL FOR ELEMENT NO. 9</u>				
	<u>DOORS</u>				
	CARRIED TO SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>ELEMENT NO. 11</u> <u>EXTERNAL WORKS,</u> <u>(ALL PROVISIONAL)</u> <u>Paving Slabs</u>				
A	600 x 600 x 50 mm thick precast concrete paving slabs laid onto and including 50 mm thick sand bed and jointed in cement / sand (1 :4) mortar; allow for all necessary excavation, carting away and spreading on site excavated material and laying 200 mm thick hardcore base	160	SM		
	<u>TOTAL ELEMENT NO. 11</u> <u>EXTERNAL WORKS</u> CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>BILL NO. 1B: PACK HOUSE : GROUND FLOOR/MEZZANINE FL</u> <u>ELEMENT NO. 12</u> <u>STEEL STRUCTURE AND ROOFING</u> <u>(ALL PROVISIONAL)</u> <u>STEEL STRUCTURE</u> <u>MAIN FRAMES OF HOT-ROLLED & COLD-FORMED STEEL</u>				
A	Fabrications, Supply & Installation of Main Structural Frame metallic profiles (all G275 Steel) comprising:- Main Columns, Rafters & Haunches of 305x102 UB25, Gable Rafters of IPE 160AA x 82 Eaves Columns of 203x133 UB25, Gable Columns of IPE 200 x 100 Mezzanine Main Column & Beams of 254x146 UB31, Mezzanine Secondary Beams of 203x133 UB25, Canopy Rafters of IPE 160AA x 82 & Canopy Columns of IPE 200 x 100 Assorted Connection Base & End Plates. Design includes Class 4.6 & 8.8 MS Anchors & all connection accs., Finishing of all steelwork with 1 coat of Grey Zinc Oxide primer applied as per manufacturer's specifications. (** Note: Miscellaneous accessories accounted for separately below)	18726	kg		

B	Fabrications, Supply & Installation of Cold-Formed Structural Frame metallic profiles (all G275 Steel) comprising:-Roof & Canopy Purlins of CFL Z152x65x61x16.5x1.5mm & Side and End-Wall Girts of CFL Z152x65x61x16.5x1.5mm. Design includes Class 4.6 & 8.8 MS Anchors & all connection accs., Finishing of all steelwork with 1 coat of Grey Zinc Oxide primer applied as per manufacturer's specifications. (** Note: Miscellaneous accessories accounted for separately below)	4312	kg		
C	Fabrication, Supply & Installation of Hot-Rolled Steel items (G245 Steel) including:- Roof Bracings and Column/ Vertical Bracings of RSA 50x50x6.0mm, Cleader Angles of RSA 40x40x3.0mm, Roof, Apex, Gables, Side (cranked) & Side (others) Sag Rods - 12mm Diameter Round Bars, Purlin Cleats of CFA 110x30x4.0mm, Fish Plates incl. Cladding Rail Fish Plates of 2.0mm MS thickness, Cladding Rail Cleats of CFA 100x50x6.0mm, Purlin & Cladding Rail Stays of CFA 50x50x2.0mm, Steel Access Staircase (with RC treads) of 4.0x2.0M & MS Steel Handrail at Staircase & MS Steel Balustrade at Mezzanine Floor of 1.2M height x 24M length Assorted Connection Base & End Plates. Design includes Class 4.6 & 8.8 MS Anchors & all connection accs.,Finishing of all steelwork with 1 coat of Grey Zinc Oxide primer applied as per manufacturer's specifications.. (** Note: Connections Hardware accounted for separately below)	3170	kg		
D	Fabrication, Supply & Installation of Hardware Accessories incl.:- Grade 8.8 MS Bolts - all areas & Grade 4.6 MS Bolts - all areas Fabrication, Supply & Installation of Anchorage Accessories incl.:-	640	kg		
E	Anchor Bolts of G240 Mild Steel - 20mm diameter + Casting Templates of G240 Mild Steel	224	kg		
	Carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>ROOF AND WALL COVERING</u>				
	<u>Roof Coverage, Insulation & Roof-mounted Vents Application</u>				
A	Supply and installation of solid steel sheet type Tekdek-IT5 AZ100 (Or equal and approved), 0.4mm thickness, produced from a zinc and aluminium alloy, Colorplus, (colour-shade to be advised); Fastening screws class 3 and all necessary ancillaries specified by manufacturer to ensure a correct function of the system.	1054	M ²		
B	Supply and installation of 3mm Double-Sided Aluminium Foil + infill Polyurethane heat insulation material laid under the entire roof on 1.5mm diameter galvanized steel wire strung over purlins and all other necessary ancillaries to ensure a correct function. Supply and of the installation system of 600mm diameter Aluminium wind-driven rotary	1054	M ²		
C	ventilator mounted on the roofing sheets; 1 unit per applicable structural bay on alternating roof slopes including all other necessary ancillaries to ensure a correct function of the system.	7	No.		
	<u>Wall Application - Sheets, Transluents Sheets & Louvres</u>				
D	Supply and installation of sheet type Tekdek-IT5 AZ100 (Or equal and approved), 0.4mm thickness, produced from a zinc and aluminium alloy, Colorplus, (colourshade to be advised); Fastening screws class 3 and all necessary ancillaries specified by manufacturer to ensure a correct function of the system. Wall sheets to be mounte starting from 2.4M height above a masonry wall up to 2.4M height by others.	614	M ²		
E	Supply and installation of perimeter-wall-mounted (above louvre-frames) translucent sheet type of 1.5mm thick clear shade and embossed finish CLEARDEK (Or equal and approved), polycarbonate translucent profiled sheets in matching Tekdek-IT5 profile (Or equal and approved), including all necessary ancillaries to ensure a correct function of the system.	23	M ²		

F	Supply and installation of perimeter-wall-mounted pre-painted steel louvres of approx. 3M width x 1M height of AZ100, 0.4mm thickness, produced from a zinc and aluminium alloy, Colorplus, (colour-shade to be advised) and all other necessary ancillaries to ensure a correction function of the system. Louvres shall be mounted above 2.4M high (above FFL) masonry walls by others on applicable points. <u>All Building Flashings</u>	23	M ²		
G	Supply and installation of various Girth Flashings (to max 610mm) AZ100, 0.4mm thickness, Colorplus, (colour-shade to be advised); Fastening screws class 3 and all necessary ancillaries specified by manufacturer to ensure a correct function of the system. <u>Structural Decking Sheets</u>	280	LM		
H	Supply and installation of solid steel sheet type SAFDECK AZ100 (Or equal and approved), 0.6mm thickness, produced from a zinc and aluminium alloy and unpainted in std. mill finish including all necessary ancillaries specified by the manufacturer to ensure a correct functioning of the system.	218	M ²		
	Carried to collection				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>RAIN WATER GOODS</u> <u>Rain Water Goods - Galvanized Steel Eave Gutters</u> Supply and installation of pre-galvanized 1.5mm thick x 610mm girth bent Rain- water Eave Gutters including applicable gutter sealants and galvanized gutter brackets, sleeves & all necessary ancillaries specified by manufacturer to ensure a correct function and galvanized of the system. rain-water outlets to be provided on the gutter at every alternate grid-line but to max 12M intervals or as required by the design configuration for the efficient water-shedding of the roof. <u>Rain Water Goods - uPVC Downpipes</u>	80	LM		
B	Supply and installation of min. 200mm diameter high-density uPVC down-pipes including applicable down-pipe clips and wall attachments & all necessary ancillaries Rain-water to downpipes ensure a correct to be provided function at every the system. alternate grid-line but to max 12M intervals or as required by the design	170	LM		

	configuration for the efficient water-shedding of the roof.				
	<u>DOORS</u>				
C	Rolling Shutter Steel Doors with Manual Drive Supply and installation of approved steel Rolling Shutter doors of 4.5M width x 6M height with manual chain drive and incorporating a 0.9M wide x 2.1M High wicket gateensure on each correct including functioning all necessary of the system. ancillaries specified by the manufacturer to ensure a correct functioning of the system.	56	M²		
	Carried to collection				
	<u>COLLECTION</u> From Page BW/13 From Page BW/14 From Page BW/15				
	<u>TOTAL FOR ELEMENT NO. 12</u> <u>STEEL STRUCTURE AND ROOFING</u> <u>CARRIED TO SUMMARY</u>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
BILL NO. 1B: PACK HOUSE : GROUND FLOOR/MEZZANINE FLOOR					
	SUMMARY	PAGE	NO		
1	WALLING	BW	5		
2	INTERNAL WALL FINISHES	BW	6		
3	FLOOR FINISHES	BW	7		
4	WINDOWS	BW	9		
5	DOORS	BW	11		
6	EXTERNAL WORKS	BW	12		
7	STEEL STRUCTURE WORKS TO WALLING, ROOFING WORKS & ROLLER SHUTTER DOORS	BW	15		

TOTAL FOR BILL NO. 1B: PACK HOUSE : GROUND FLOOR/MEZZANINE FLOOR CARRIED TO GRAND SUMMARY				
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ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
<u>BILL NO. 1C: RETAINING WALL/LOADING PLATFORM</u>					
<u>ELEMENT NO.1</u>					
<u>SUBSTRUCTURES</u>					
<u>(ALL PROVISIONAL)</u>					
A	Clear the site of all bush scrub undergrowth and small trees grab up roots and cart away or burn all arising (approx. area sq. sm)	0	SM		
<u>Excavations and earthworks</u>					
B	Excavate oversite average 200mm deep to remove vegetable soil load up wheel and deposit about 100metres away and later spread and level on site where directed	0	SM		
C	Bulk Excavate to reduce levels not exceeding 1.50 metres deep commencing at stripped level	0	CM		
D	Excavate for retaining walls bases occurring not exceeding 1.5metres deep commencing from reduced level	135	CM		
E	Excavate for column bases occurring not exceeding 1.5metres deep commencing from reduced level	0	CM		
F	Extra over excavations for excavating in rock irrespective of class	0	CM		
G	Allow for keeping excavations free from mud and all water including spring and running water by pumping pailing or other approved means.				
H	Allow for planking and strutting to sides of excavations			ITEM	
	<u>Disposal</u>			ITEM	
J	Load surplus excavated material and cart away	66	CM		
<u>Filling</u>					
K	Return fill and ram selected excavated material around foundations.	69	CM		
<u>Hardcore as described</u>					
L	300mm Thick layer of imported hardcore filling including levelling and consolidating in 150mm layers	180	CM		
<u>Blinding</u>					

M	50mm Thick Quarry dust blinding to the surface of hardcore;rolled smooth to receive polythene sheeting(m.s) <u>Insecticide treatment</u>	180	SM		
N	"TERMIDOL" or other equal and approved chemical insecticide treatment prepared and applied according to the manufacturer's printed instructions. <u>Damp proof membrane</u>	180	SM		
P	500 Gauge polythene or other equal and approved plastic sheet damp proof membrane laid over blinding(measured nett - allow for laps)	180	SM		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>In-situ concrete work</u>				
	<u>Mass concrete (1:3:6/38-38mm aggregate)</u>				
A	50mm Thick blinding under retaining wall foundations	90	SM		
B	50mm Thick blinding under column bases	0	SM		
	<u>Vibrated reinforced concrete (1:2:4/20-20mm aggregate) as described in:</u>				
C	200 mm thick Retaining walls (lower sections)	18	CM		
D	450 mm thick Retaining Wall Bases	38	CM		
E	150 mm thick Slabs	180	SM		
	<u>Steel reinforcement</u>				
	<u>Supply and fix bars reinforcement including bending, hooks, tyingwire, cutting, spacer blocks and supporting all in position as described</u>				
	<u>High tensile square twisted bars to B.S. 4461</u>				
F	8 mm Diameter	0	KG.		
G	10 mm Diameter	630	KG.		
H	12 mm Diameter	1764	KG.		
J	16 mm Diameter	3324	KG.		
	<u>Mesh reinforcement</u>				
K	Fabric mesh reinforcement to B.S. 4483 ref: A142 including	180	SM		

	laps tyingwire and spacer blocks complete(measured nett-allow for laps)				
	<u>Sawn formwork as described to:</u>				
L	Vertical sides of strip foundations/ retaining wall	90	SM		
M	Vertical sides of retaining walls	108	SM		
N	Edge of floor slab 75-150mm high	54	LM		
	Carried to collection below				
	<u>COLLECTION</u>				
	Brought Forward from Page No. BW		17		
	Brought Down from Page No. BW		Above		
	<u>TOTAL FOR ELEMENT NO. 1</u> <u>SUBSTRUCTURES</u> <u>CARRIED TO SUMMARY</u>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>SUPERSTRUCTURE WORKS</u>				
	<u>ELEMENT NO.2</u>				
	<u>REINFORCED CONCRETE</u> <u>FRAME (ALL PROVISIONAL)</u>				
	<u>Vibrated reinforced</u> <u>concrete (1:2:4/20 - 20mm</u> <u>aggregate) as described</u> <u>in:-</u>				
A	200 mm thick Retaining walls (including weepholes) (upper sections)	8	CM		
	<u>Steel reinforcement</u>				
	<u>Supply and fix steel bars</u> <u>reinforcement including</u> <u>bending, hooks, tying wire,</u> <u>cutting, spacer blocks and</u> <u>supporting all in position</u>				
	<u>High tensile square twisted bars to</u> <u>B.S. 4461 as described in ;</u>				

B	Assorted 8 - 16 mm Diameter	0	KG.		
C	10 mm Diameter	150	KG.		
D	12 mm Diameter	268	KG.		
E	16 mm Diameter	458	KG.		
F	<u>Sawn formwork as described to ;</u> Vertical sides of retaining walls <u>WALL FINISHES</u> (ALL PROVISIONAL) <u>wall finishes</u> 12mm thick cement,sand render,with wood float finish , as described to:-	85	SM		
G	Concrete or masonry surfaces of walls	85	SM		
	<u>TOTAL FOR ELEMENT NO. 2</u> <u>R.C. SUPERSTRUCTURE</u> <u>CARRIED TO SUMMARY</u>				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	BILL NO. 1C: RETAINING WALL/LOADING PLATFORM SUMMARY	PAGE	NO		
1	SUBSTRUCTURES	BW	18		
2	R.C. SUPERSTRUCTURE	BW	19		
	TOTAL FOR BILL NO. 1C: RETAINING WALL/LOADING PLATFORM CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	PACK HOUSE STRUCTURE SUMMARY	PAGE	NO		
1	BILL NO. 1A: SUBSTRUCTURE / FOUNDATION WORKS	BW	4		

2	BILL NO. 1B: PACK HOUSE : GROUND FLOOR/MEZZANINE FLOOR	BW	16		
3	BILL NO. 1C: RETAINING WALL/LOADING PLATFORM	BW	20		
	TOTAL FOR PACK HOUSE STRUCTURE CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>BILL NO. 2</u> <u>ELECTRICAL WORKS</u> <u>(ALL PROVISIONAL)</u> The following works to be done only by duly approved, nominated, competent <u>registered specialists</u> :				
1	<u>SITE POWER RETICULATION</u> <u>Supply,install,test and commission the following in accordance to BS 7671:2001,BS 7430:1998, BS 5467&6724, and as described below :</u>				
1.1	<u>MAIN LV BOARD</u> One free standing Main LV switchboard type modular, metal clad, cubicle pattern to IP31 form 2b comprising of Schneider Electric or approved equivalent switchgear as follows:- i)320A TPN + E Copper Busbars ii)320 Amps MCCB Adjustable as Main Incomer:iii) 2No.250 A TP+ N mechanically interlocked with 250A TPN auto-changeover for Mains and Genset. iv)25kA,415V three-phase surge diverter as Furse ESP 415 v)Space for 1 No. Utility HV Three phase Energy meter and cut-outs vi) 2No. 80A,16 kA TP MCCB outgoing vii) 2No. 63A,16 kA TP MCCB outgoing viii) 5No. 63A,10 kA TP MCB outgoing ix) 15No. 63A,10 kA DP MCB outgoing x) 6No. 40A,10 kA DP MCB outgoing xi) 70kVAR PFC Bank with digital step controller,contactors, capacitors, fuses and 160A TPN MCCB for PFC Bank xii) 0-400A , 600V, multimeter data logger. xiii) Current transformers, phase Indicators and selector switchesxi) Earthing	Item	1		
1.2	<u>LV CABLING</u> Supply,install,test and commission the following in accordance to BS 7671:2001,BS 7430:1998, BS 5467&6724, and as described below :				
1.2.1	4 Core 120sq.mm pvc/swa/pvc Cu cable from Genset to Main LV Board	Lm.	10		

1.2.2	4 Core 16sq.mm PVC/SWA/PVC Cu cable from Main LV Board to DB- GF	Lm.	30		
1.2.3	4 Core 16sq.mm PVC/SWA/PVC Cu cable from Main LV Board to DB-GF	Lm.	10		
1.2.4	3 Core 16sq.mm PVC/SWA/PVC Cu cable from Main LV Board to CU - UF	Lm.	15		
1.2.5	3 Core 10sq.mm PVC/PVC Cu cable from Main LV Board to First Floor	Lm.	120		
	<u>Mechanical Equipment</u>				
1.2.1	4 Core 16sq.mm PVC/SWA/PVC Cu cable from Main LV Board to Sprinkler Pump	Lm.	30		
1.2.1	4 Core 4.0sq.mm PVC/SWA/PVC Cu cable from DB-GF to Booster pump	Lm.	15		
1.3	<u>CABLE TRAYS & POWER MANHOLES</u> Supply,Install,Test and Commission complete cable tray/ladder systems including all bends,brackets,connector and all other necessary fixings required for complaetion as follows and shown in the drawings:				
1.3.1	600mm X 50mm galvanised heavy Duty cable tray for Power cables	Lm.	60		
1.3.2	100mm X 50mm galvanised heavy Duty cable tray for Power cables	Lm.	30		
1.3.3	300mm X 50mm galvanised heavy Duty cable tray for ICT cables	Lm.	60		
1.4	<u>POWER MANHOLES</u>				
1.4.1	Power manholes to PEE approval	no	7		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
4	<u>GROUND / MEZZANINE FLOORS</u>				
4.1	<u>LIGHTING INSTALLATIONS</u> Supply,install,test and commission the following in accordance to BS 7671,BS 7430, BS 5467&6724, and as described within the drawings, specifications and below:				
4.1.1	Lighting points wired in 3x 1.5 sq.mm PVC insulated single core copper cable drawn in 20mm PVC Heavy gauge conduit concealed in building fabrics for one way switching, two-way , intermediate and Emergency switching	No.	42		
4.1.2	10 Amps moulded flush mounted plate switches as MK logic plus 23 white or approved equivalent: -				
a)	One gang one way.	No.	14		
b)	One gang Intermediate.	No.	2		

c)	One gang two way.	No.	4		
d)	Two gang one way.	No.	0		
e)	Two gang two way.	No.	0		
f)	Two gang Intermediate.	No.	0		
g)	Three gang two way.	No.	0		
h)	Four gang two way.	No.			
4.1.3	Supply and Install the following Light fittings complete with internal wiring, lamp and control gear as per lighting schedule, drawings and symbols :				
a)	TYPE C	No.	16		
b)	TYPE C1	No.	8		
c)	TYPE 4	No.	9		
d)	600 X 600 PANNEL LIGHT	No.	2		
e)	Mirror light	No.	1		
f)	Emergency Exit light	No.	6		
g)	TYPE H	No.	0		
h)	TYPE S4	No.	4		
4.2	<u>SMALL POWER INSTALLATIONS</u> Supply,install,test and commission the following in accordance to BS 7671,BS 7430, BS 5467&6724, and as described within the drawings, specifications and below:				
4.2.1	Ring circuit power points wired in 3x 2.5 sq.mm PVC insulated single core copper cable drawn in PVC Heavy gauge conduit concealed in building fabric.				
4.2.1	Radial circuit power points wired in 3x 4.0 sq.mm PVC insulated single core copper cable drawn in PVC Heavy gauge conduit concealed in building fabric For the following points :				
a)	Hand drier	No.	3		
b)	cooker unit	No.	1		
4.2.2	Supply, Install, Test and Commission the following White moulded small power accessories as MK equal and approved and as per description and symbols indictaed on the drawings:				
a)	13A twin switched socket outlet	No.	12		
b)	20A DP switch with neon indicator for hand drier	No.	3		
c)	20A Flex Outlet Plates.	No.	1		
d)	32A DP switch with neon indicator for Shower Units	No.	3		
e)	Dual tv Outlet plate	No.	2		

f)	Dual RJ45 Data outlet plate	No.	9		
4.2.3	Supply and install MK or equally approved IP65 Isolators as follows :				
a)	32Amp SPN Isolator for door motor	No.	9		
b)	40Amp TPN Isolator	No.	2		
c)	63Amp TPN Isolator	No.	3		
4.2.4	Supply and Install 500V IP65 Weatherproof socket plates as MK or equal and approved as described below:				
a)	13A Double switched socket outlets.	No.	12		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
4.2.5	Provide 25mm dia.PVC Heavy gauge conduit complete with draw-wire and back boxes concealed in building fabrics for the following: a) Data and Telephone points	No.	11		
	b) Intercom Points	No.	11		
	c) TV Points	No.	4		
	d) CCTV Points	No.	12		
	e) Access control point	No.	9		
4.2.6	Provide 150x50mm powder coated metallic trunking complete with draw-wire concealed in building fabrics for ICT and MATV.	Lm.	200		
4.2.7	Provide 150x50mm powder coated metallic trunking with draw-wire concealed in building fabrics for Power Submains cables.	Lm.	200		
4.3	<u>DISTRIBUTION BOARDS AND CONSUMER UNITS</u>				
	Supply,install,test and commission the following in accordance to BS 7671,BS 7430, BS 5467&6724, and as described within the drawings, specifications and below :				
4.3.1	12-Way 125A TPN flush mounted distribution board complete with 125A integral isolator and front lockable cover as (DB A1 -GF) and the following MCBs as Schneider Electric or approved equivalent	No.	1		
a)	10 Amps SP - Type C	No.	3		
b)	20 Amps SP - Type B	No.	2		
c)	32 Amps SP - Type B	No.	5		
d)	40 Amps SP - Type B	No.	2		
e)	32 Amps TP - Type B	No.	2		
f)	Blanking Plates	No.	10		
g)	Earthing	Item.	1		

h)	20A Din rail mounted Elctronic 24/7 Digital timer	No.	1		
4.3.2	6-Way 63A SPN flush mounted consumer unit with 63A integral isolator and front lockable cover as (CU-GF) and the following MCBs as Schneider Electric or approved equivalent	No.	1		
a)	10 Amps SP - Type C	No.	2		
b)	20 Amps SP - Type B	No.	0		
c)	32 Amps SP - Type B	No.	2		
d)	40 Amps SP - Type B	No.	0		
e)	Blanking Plates	No.	10		
f)	Earthing	Item.	1		
4.4	<u>FIRE DETECTION AND ALARM</u> Supply,install,test and commission the following in accordance to BS 5839, BS EN 60849, BS 7807 and BS 9999 and as described within the drawings, specifications and below :				
4.4.1	Radial circuit outlet wired using 3x2.5mm s/c Cu cables drawn in trunkings and 25dia HG conduits to Fire alarm panel.	No.	4		
4.4.2	Addressable Flush mounted call point	No.	4		
4.4.3	Addressable photoelectric smoke detector	No.	4		
4.4.4	Addressable Convection Heat detector	No.	1		
4.4.5	Addressable Combined Electronic sounder and Flasher	No.	5		
4.4.6	Intelligent addressable multi zone Fire alarm control panel as Menvier	No.	1		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>ELECTRICAL WORKS COLLECTION PAGE</u>				
1	From Page BW/22				
2	From Page BW/23				
3	From Page BW/24				
4	Allow a Provisional Sum of KShs. 500,000.00 for ICT INSTALLATIONS; CCTV INFRUSTRUCTURE, DATA CABLING AND THE LIKE				500,000.00

	TOTAL BILL NO. 2				
	ELECTRICAL WORKS				
	CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>BILL NO. 3</u> <u>MECHANICAL WORKS</u> <u>(ALL PROVISIONAL)</u> The following works to be done only by duly approved, nominated, competent <u>registered specialists</u> : <u>SANITARY FITTINGS</u> <u>Supply, deliver, install and fix the following sanitary fittings including all materials and jointing to supply, waste/soil and overflow pipes. Twyfords Ltd products 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</u>				
A	<u>Water Closet</u> Close-coupled water closet WC suit ('S' or 'P'-trap) in approved colour with horizontal outlet to BS 3402 with 7.5litre valveless low level ceramic cistern and fittings and including siphon, 15mm diameter side overflow, plastic flush bend, dual flush system, inlet connection, chrome-plated lever and heavy plastic seat and cover with metal top fixed (chrome plated) hinges. All to be as IDEAL STANDARD "PLAN" -pan model 109.003.34 water closed or equal and approved.	5	No		
B	Toilet flush valve as Cobra No. FM3422, 1 1/4" Econoflush-concealed type with integral non-hold open vacuum breaker all complete with flushpipes and fittings	5	No		
C	<u>Toilet roll holder</u> Toilet roll holder in vitreous china to BS 3402 in white colour of size 165*165mm and recessed into wall. Toilet roll holder to be as "Twyfords SEMI-RECESSED & ORNAMENTAL" accessories Ref. No. VC9808WH	5	No		
D	<u>Urinal Bowls</u> Ceramic urinal bowl complete with 40mm heavy duty plastic bottle trap and 40mm diameter chrome plated outlet with grating firmly fixed on the wall with chrome plated screws. The fittings shall be as Roca or an equal & approved equivalent.	1	No		

E	<u>Urinal Bowl Flush Valves</u> 32mm urinal bowl flush valve for the above urinal bowls complete with back entry with integral vacuum breaker, non-hold-open features and non-return valve, inlet control stop and wall plate comprising flush valve, bent chrome plated flush pipe and rubber pipe connector. The flush valve to be push-button type. The fittings shall be as 'Docol' or equal and approved.	1	No		
F	<u>Countertop Wash Hand Basin (WHB)</u> Countertop wash hand basin size 635 * 500mm with one tap hole, 32mm diameter chrome plated chain waste, chain stay hole, chrome plated non- concussive time delay press action pillar tap and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. All to be as "Roca Georgia" or equal & approved.	6	No		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>Shower</u> Shower set comprising of concealed 15mm GMS pipe, 15mm stop valve, shower overhead mounted instantaneous shower heater with 4.4KW heating elements complete with electric cable. To be as LORENZETTI or equal & approved.	3	No		
B	15mm diameter chrome plated bib tap to be as Cobra Ref No. 107EC taps or equal and approved	3	No		
C	<u>Soap Dish</u> Twyfords semi-recessed built in soap tray in vitreous china size 305* 150mm	3	No		
D	<u>Towel Rail</u> High quality chrome plated towel rail screwed to wall and complete with wall plates as "Twyfords PB 0363CP" or approved equivalent	3	No		
E	<u>Soap Dispenser</u> Soap Dispenser, capacity 1.136 litres complete with plastic rawl plugs, fixing screws, lock and key complete with initial fill of soap gel. The soap dispense to ba as "Zaplon's MARK 7" model, size 125 * 100 * 290mm height or approved equivalent	5	No		
F	<u>Copper Tubing</u> 12mm diameter copper tubing 300mm long bent as required including union jointing to steel tubing and fittings	7	No		
G	<u>Mirrors</u> 6mm thick polished plate glass, silver backed mirror with bevelled edges, size 610 * 497mm plugged and screwed to wall with 4 No. chrome plate, chrome capped screws and 5mm thick foam back nest	5	No		

H	<u>Robe Hook</u> Robe hook in vitreous china and white in colour mounted onto a concealed screw to wall wedges, to be as Twyford's OC 6858 1998 or approved equivalent.	5	No		
J	<u>INTERNAL PLUMBING WORKS</u> Supply, deliver and install pipes, tubing and fittings as described and shown on the drawings. The pipes shall be PN 25 PPR pipes where exposed to adverse weather conditions and all conforming to the current European standards for PPR installations and to the Engineer's approval. Pipe jointing shall be polyfusion or use of electric coupling. Rates must allow for all metal/plastic threaded adaptors where required for connection to sanitary fittings, valves, sockets, sliding and fixed joints, support raceways, isolating sheaths, elastic materials, expansion arms and bends, crossovers, couplings, clippings, connectors, joints etc, as required in the running lengths of pipework and where necessary, for pipe fixing clips, holder bats plugged and screwed for proper and satisfactory functioning of the system. The pipes will be pressure tested before plastering of the walls commences and as per the manufacturer's recommended testing pressures.				
K	<u>PPR Pipes</u> i) 20mm dia. Pipe cased in walls/floors and in ducts ii) 25mm Ditto iii) 32mm Ditto iv) 40mm Ditto	50 40 30 25	Lm Lm Lm Lm		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>Bends</u> i) 20mm diameter bend ii) 25mm Ditto iii) 32mm Ditto iv) 40mm Ditto	12 12 10 15	No No No No		
B	<u>Tees</u> i) 25 * 20mm Tee ii) 25 * 25mm Tee	25 25	No No		
C	<u>Reducers</u> i) 40 * 32mm diameter reducer	15	No		

	ii) 32 * 25mm Ditto	20	No		
	<u>INTERNAL FOUL WATER DRAINAGE</u> Supply, deliver and install the following UPVC, MUPVC, soil and waste systems respective to BS 5255 with fittings fixed to manufacturer's printed instructions and manufactured by reputable manufacturers. Tenderers must allow in their pipework prices for all the couplings, clippings, connectors, joints, etc. as required in the running lengths of the pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for proper and satisfactory functioning of the system.				
D	MuPVC and uPVC Waste and Soil Pipework				
	i) 100mm diameter heavy gauge grey mUPVC pipe	15	Lm		
	ii) 150mm diameter heavy gauge golden brown mUPVC pipe	50	Lm		
	iii) 100mm heavy gauge golden brown uPVC pipe	30	Lm		
	iii) 50mm diameter waste pipe	25	Lm		
	iv) 40mm ditto	20	Lm		
	v) 32mm ditto	15	Lm		
E	<u>Bends</u>				
	i) 100mm diameter bend with access	7	No		
	ii) 50mm diameter sweep bend	7	No		
F	<u>WC Connectors</u>				
	100mm diameter WC connector	7	No		
G	<u>Traps</u>				
	i) 100 x 50mm diameter floor trap and grating	12	No		
	ii) Standard 300 * 300 * 450mm masonry gully trap complete with 125mm thick reinforced concrete cover	6	No		
H	<u>Weathering Slates and Vent Cows</u>				
	i) 100mm diameter vent cowl	7	No		
	ii) 100mm diameter weathering slate and apron	7	No		
J	<u>PLASTIC ROOF TANKS</u> Supply, deliver and install cylindrical plastic water tanks of capacity 3,000 litres as KENTANK or approved equivalent, complete with all accessories	2	No		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>FIRE PROTECTION</u> Supply, deliver and install the following fire fighting equipment in positions indicated on the contract drawings or as shall be instructed by the Engineer				

B	<u>Standard Printed Label</u> Standard printed labels for the fire cupboards	2	Item		
	<u>Supply, deliver, install, test and commission the following portable fire extinguishers and conforming to BS EN 3 / BS 1449.</u>				
C	<u>Water Fire Extinguisher</u> 9 litres water portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
D	<u>Carbon Dioxide Fire Extinguisher</u> 5 kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
E	<u>Dry Chemical Fire Extinguisher</u> 6 kg dry chemical powder portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	2	No		
F	<u>Manual Alarm Bell</u> iv) 9" (225mm) manual operated alarm bell (Gong)	2	No		
	<u>Hose Reel System</u> Supply, deliver and install hose reel system as per the following specifications:				
G	<u>Hose Reel</u> 25mm diameter 30m long swinging type fire hose reel complete with delivery valve, mild steel feed pipe, isolation valve guide, electro-galvanised surface mounted hose reel cabinet in approved colour. It shall be as "GERMANIA" or approved equivalent	2	No		
H	<u>Pumps for boosted hose reel system</u> Fully automatic packaged unit water pressure booster pump set, capable of delivering 1.2 litres/sec against a static head of 24 metres. The pump set shall comprise 2No. Pumps (one duty, one standby), mountings, control gear, pressure switch and pneumatic vessel, all on a common frame. 1phase 230V 50Hz motor power 1.5KW. Control shall be effected via a pressure switch through a pre-wired control panel, which shall give full automatic changeover from duty to standby after every cycle of operation. The controls shall also include motor under voltage/overvoltage protection devices and incorporate a float switch for protection against dry running. The pump-set shall be pre-assembled complete with pipework and fittings (unions, strainers, isolation valves, non-return valves etc) ready for connection to water tank outlet and to the hose reel supply to pipework. The pump set shall be as "Pullen Fire Pak" as manufactured by Pullen pumps Ltd or approved equivalent	1	Set		

J	<u>Control Panel</u> The control panel shall have removable front access cover and shall be made of anodized mild steel. To be complete with motor controls gear, internal buttons with automatic changeover, overload protection, power surge protection, cables, low level cut out switch at the intake, buttons for change from automatic to manual operation, contactors, timers and all other accessories necessary for automatic operation of the pump	1	No.		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
A	<u>Associated Pipework</u> <u>Supply and install Galvanised Mild Steel (GMS) piping and fittings with screwed & socketed joint to medium grade class "B" to BS 1387</u> <u>GMS Pipework</u> i) 50mm dia. gms pipe ii) 25mm dia. Ditto iii) 50mm diameter bends/elbows iv) 25mm dia. Ditto	30 10 6 6	Lm Lm No No		
B	<u>Tees</u> i) 50 * 50 * 50mm GMS Tee ii) 50 * 50 * 25mm Tee	4 3	No No		
C	<u>Valves</u> 50mm diameter medium pressure screw down full way non rising stem wedge gate valve to BS 1952, with wheel and head joint to steel tubing, as' Pegler' or approved equivalent.	12	No		
D	<u>Non-Return Valves</u> 50mm flanged non-return valve	5	No		
E	<u>Split Air Conditioning Units -for Control room</u> SPLIT AIR CONDITIONER (high wall mounted) Refrigerant:R410A Cooling load: 24KBtu/hr Air deflection: 4-way air deflection Cooling type: Jet Sound Pressure (cooling) dB(A) [sleep/low/medium/high]: 125/183/233/283/380 Refrigerant pipe size mm[gas/liquid]: 15.88/9.52 Outdoor-Indoor distance: 12m Controller: Wireless Remote Control Model: LG US H2465NWO Warranty: 2 years	1	No		

F	<u>WATER FILTRATION/TREATMENT PLANT</u> Allow for a water treatment/filtration capable of delivering 1m ³ /min, with minimum pressure of 1 bar, desired design temperature of 25°C recovery. the plant to incorporate the: A matching dosing pump and its auxillaries A matching dosing tank and accessories a matching recritory pump and auxillaries Adequate water filters A matching control panel The plant should be fitted with necessary auxillaries/ accessories to allow proper and effifficient parkhouse water recycling system	1	Item		
G	<u>As-Installed Drawings</u> Allow for three (3No.) sets of as-installed drawings and operation manuals both in hard and soft copies for mechanical installations	1	Item		
H	<u>Testing and commissioning</u> Allow for testing and commissioning for for the mechanical installation works to the satisfaction of the Engineer	1	Item		
	Carried to Collections				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>MECHANICAL WORKS COLLECTION PAGE</u> From Page BW/26 From Page BW/27 From Page BW/28 From Page BW/29 From Page BW/30				
	<u>TOTAL BILL NO. 3</u> <u>MECHANICAL WORKS</u> CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	<u>BILL NO. 4</u> <u>SPECIALIZED EQUIPMENT AND PLANT INSTALLATION</u> The following works to be done only by duly approved, nominated, competent <u>registered specialists; and to be done in strict conformity to the stipulated guidelines as laid out in the "SPECIFICATIONS GUIDE FOR HOT WATER TREATMENT FACILITIES DEVELOPER" as issued by "THE MINISTRY OF AGRICULTURE, LIVESTOCK AND FISHERIES. State Department for Crop Development & Agricultural Research - August 2021"</u> contained within the Tender Documents Automated hot water / steam treatment full plant at least 10 tonnes / 8 working hours output that is able to clean, disinfect and disinfest mangoes and other horticultural produce; including hoisting into place and necessary pulley and conveyor systems:				
A	Washer machine	ITEM			
B	Weight sorting (with any added testing capabilities i.e. Moisture content, dry matter etc.)	ITEM			
C	Heat treatment	ITEM			
D	Post treatment sorting and packing	ITEM			
E	Related handling and office equipment	ITEM			
	<u>TOTAL BILL NO. 4</u> <u>SPECIALIZED EQUIPMENT AND PLANT INSTALLATION</u> CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	BILL. NO. 5 <u>PROVISIONAL SUMS</u>				
A	Allow a Provisional sum for Project Documentation and Management Expenses		ITEM		3,000,000.00

B	Allow a provisional Sum for Builders Works in connection to Specialist Installations		ITEM		300,000.00
C	Allow a provisional Sum for ESIA / NEMA reports		ITEM		150,000.00
D	Allow a provisional Sum for Drainage Works		ITEM		500,000.00
E	Allow a provisional Sum for Cold Room Installations to be done by a Nominated Specialist		ITEM		5,800,000.00
F	Allow a provisional Sum for Contingencies to be expended at the Project Manager's discretion		ITEM		2,000,000.00
	BILL NO. 5 PROVISIONAL SUMS CARRIED TO GRAND SUMMARY				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
1	<u>GRAND SUMMARY</u>				
2	<u>PRELIMINARIES</u> Particular and General Preliminaries (Provision of Water, Electricity, Security for the works, Performance bonds, Hoarding and the like during construction)	PAGE		OFFICIAL USE	TENDERER'S USE
3	<u>BUILDERS WORKS</u>				
4	PACK HOUSE STRUCTURE	BW/21			
5	<u>SPECIALIST INSTALLATIONS</u>	BW/25			
6	ELECTRICAL WORKS	BW/30			
	MECHANICAL WORKS	BW/32			
	SPECIALIZED EQUIPMENT AND PLANT INSTALLATION	BW/33			
	<u>PROVISIONAL SUMS</u>	KSHS.			
	Provisional Sums	KSHS.			
	Sub - Total 1	KSHS.			

	Add 16 % VAT		
	GRAND TOTAL CARRIED TO FORM OF TENDER		

NAMEOF
TENDERER.....

ADDRESS.....

SIGNATURE.....STATUS.....
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DATE.....

NAMEOF
WITNESS.....

ADDRESS.....

SIGNATURE.....
.....

DATE.....

SPECIFICATIONS GUIDE FOR HOT WATER TREATMENT FACILITIES DEVELOPER



A guide to exporters who wish to set up a certified hot water treatment facility for the export market

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1.0 INTRODUCTION

Fruits play an important role in the country's horticulture sub sector, contributing an estimated KShs. 63.8 billion from the domestic market trade in the year 2018. The total area under fruit production was estimated at 185,000 Ha, with a production of 3.4 million metric tonnes (MT). Mango is the second most important fruit grown in the country valued at KShs. 12.8 billion (about 124 million USD). This value accounts for 20% of the total domestic market share following banana which ranks first with a market share of 34% (HCD report, 2018). The area under mango production was estimated at 48,541 Ha in 2018 with leading producing counties being Makueni, Machakos, Kilifi and Kwale which accounts for 64% of the total production area. Other counties where mangoes are also grown include, Lamu, Meru, Embu, Tharaka Nithi, Tana River, Elgeyo Marakwet, Kitui and Muranga.

Some of the major challenges affecting mango production in Kenya is the prevalence of pests and diseases, inadequate supply of quality planting materials, high post-harvest losses, low adoption of modern technologies and numerous marketing constraints (HCD, 2018). Fruit fly was first reported in Kenya in 2003 (Lux *et al.*, 2003). The infestation of fruit flies has resulted in socio-economic losses to the country due to declined yields, reduced household incomes, loss of foreign exchange and restricted access to external market.

According to ICIPE, yield loss on mangoes caused by fruit flies now ranges between 30-70% depending on the locality, season and variety of the fruit in Kenya. Besides the loss, *B. dorsalis*, infestation has become a major export barrier, as importing counties like EU, USA, Japan China, New Zealand and Australia are wary of new fruit flies being introduced into their countries. Therefore, mitigation measures to address the problem of fruit flies need to be put in place among them the hot water treatment which provides an effective fruit fly management option for fresh mango destined to the EU.

2.0 HOT WATER TREATMENT FOR DISINFESTATION OF FRUIT FLIES

As from 2014, the Kenyan government imposed a temporary ban on export of fresh mango fruits to EU market because of numerous interceptions caused by fruit fly infestations. In addition to the self-ban, the new European Union directive on mango imports came into force on the 1st of September 2019, creating new requirements before export of fresh mango to this market. The new rules were officially adopted as Commission Implementing Directive (EU) 2031/2016, amending Annexes I to V of the EU Plant Health Directive 2072/2019. This meant that the country needed to introduce new phytosanitary measures to ensure mangoes exported to EU are free from fruit fly infestations. Such measures include among others the hot water treatment.

Having considered the adoption of hot water treatment as the most certain way to attain the required phytosanitary conditions, the sector players have been engaging in exploring mechanisms of how to set up the hot water treatment facilities. However, there has been a noted unavailability of technical specifications to guide the interested investors. This necessitated the commissioning of a technical team to prepare the specifications.

When certifying that an export treatment has occurred, KEPHIS ensures that the mandatory components of the treatment are met, and that all safety guidelines are followed. Importing countries treatment requirements are provided through published regulations, import permits, and other official communication and developed protocols. Maintaining quality assurance at the local level is done to ensure that all treatment is conducted according to the importing country's requirements.

Mandatory components to consider relating to an export treatment:

1. Follow the current agreed protocol for export.
2. Ensure the safety of the employees.
3. Base the treatment on the foreign country's import requirements.

Hot water system approved specifications.

No	Item	Activity	Function	Requirements	Reference	Specifications
1	Pre-treatment	Quality analysis- pre & post	Brix pH maturity	Spectrometer HPLC Penetrometer Colorimeter Refract meter Digital weighing balance (±0.01g) Thermo probe - Pkt Vernier callipers Computer & printer	Market requirements	Equipment- As per spec column Space (pre/post treat.)- Tools & Reagents Personnel – Quality Analyst(example)
		Grading and sorting	Physical quality checks of the produce	OECD standards	OECD/ISPM 42	Space- Roller-belt type grader- Conveyor belt- or other
						Space- Computerized Electronic cup weight sizer or other
		Washing and disinfecting	Use portable water, disinfect and recycle	Brush and immersion or other	ISPM/SPS	Space- Material - Nozzle size- Pump- Brush system- Or other
		Sizing	Sizes-to treatment batches (rollers/siev			Space- Roller-belt type grader- Conveyor belt Or other

			es)			Space- Computerized Electronic cup weight sizer or other,
2	Treatment	Temperature control	Uniform	46.1- 47.1°C	DoI ICIPE HWT Pro/ Certification protocol	Tank Space – Heaters/boiler Insulation- Data logger- Pump to circulate
			Consistency	68 minutes for core pulp temp	Certification protocol	
			Logging Data capture	Per batch	Supplier	
			Cost- effective	Cost per batch	System cost analysis	
3		Timing	Fruit variety	Apple		Batch baskets/single baskets put together Indicators-
			Data logging (Treatment period)	Per batch	Certification protocol (treatment period)	
			Fruit size	350-400g	DoI ICIPE HWT Pro/ Certification protocol	
			Indicators with sound & visual alarm	System	Supplier	
4	Capacity of equipment	Capacity	Treatment capacity per day (8 hrs)	cost and client target	Buyer requirement	Dependent on client requirement
5	Post- treatment procedures	Cooling-	Air-cooling hydro- cooling	30 minutes	DoI ICIPE HWT Pro/ Certification protocol	Under quarantine conditions to prevent re- infestation
		Drying	Natural Mechanical	Per batch	Supplier	

		Quality analysis	Brix, Ph, Damage	Per batch	DoI ICIPE HWT Pro/ Certification protocol	
		Packaging	Carton/box	Per batch	Market requirements	
		Pelleting	Pelleting specifications	Per batch	Market requirements (ISPM 15)	
		Storage	Recommended conditions	10-13°C	DoI ICIPE HWT Pro/ Certification protocol	
6	Housing /space requirements	Holding-Equipment-Post treatment-Packaging-Cold storage-	According standards			
7	Support infrastructure & equipment	Admin office-Parking space-Water reservoirs-Store-Mini lab-Fork lift-Inspection facility Cold rooms-Power-Waste handling facilities Loading facility-Quarantine Fruit-fly	According to standards			

		traps within and around the facility Sanitation facilities				
8	Special conditions for the facilities	Floor finish Wall finish Roof finish Safety issues	As per standards			

2.1 Principle

Hot water immersion treatment (also called hydrothermal treatment) uses heated water to raise the temperature of the commodity to the required temperature for a specified period of time. This is used primarily for certain fruits that are hosts of fruit flies and other pests that are undesirable or considered as quarantine in importing countries.

Most hot water treatment systems for treatment of fruits against fruit flies are mainly the batch type or continuous systems. The batch system can range from small-scale systems used to treat small quantities of fruit (<100kg) to bulk dip systems with a capacity to treat large volumes (500kg+ per tank) of fruit at a time. Continuous system is the type where fruits are submerged (either loosely or in wire or plastic mesh baskets) on a conveyor belt, which moves slowly from one end of the hot water tank to the other.

2.1.1. Procedure

- Before the start of each treatment, examine the facility for proper operation of the heating, circulation, and recording equipment. Examine continuous flow equipment (submerged conveyor belt) at the start of each day or run.
- Commodities subject to size restrictions require a preliminary culling procedure to eliminate oversized items prior to treatment.
- Conduct all treatments in an approved tank.
- Entire treatment will be as per the KEPHIS certification protocol and may be further governed by a signed work plan, or compliance agreement.
- Load immersion tanks in a manner approved by KEPHIS, usually using baskets with perforations that allow adequate water circulation and heat exchange.
- Number each treatment container or lot before placing in the immersion tank. Record the temperature and duration of each hot water dip with an automatic temperature recording system.
- A responsible employee of the packing company **must** indicate on the printed temperature record the starting time, lot number, duration of each treatment, and initial each entry.

- An alternative recording system can be used only with prior KEPHIS approval.

During certification, the average pulp temperature becomes the minimum commercial treatment pulp temperature. Use insect-proof containers, screened or enclosed rooms, doors with air curtains, or some combination to maintain commodities insect free throughout the shipping process- Refer to KEPHIS certification protocol for further guide.

3.0 FACILITY DESIGN

The design of a hot water treatment depends on the client requirements. There are clients who wish to integrate hot water treatment with other pre and post treatment operations such as fruit grading and treated fruit cooling respectively. Because the operations of any hot water treatment for export produce require KEPHIS approval, there is need that any client interested to set up such a facility get to work closely with organization from the initial stages. This way the client will be able to meet all the minimum requirements of operating such a facility. Design and construction of the hot water treatment facility is the responsibility of the owner as this will require consideration of variations in facility size, availability of materials, economic feasibility and individual preference. KEPHIS allows a wide range of design flexibility as long as it conforms to the KEPHIS protocol guidelines.

The design factors to be considered while planning the establishment of a hot water treatment are outlined in the sections below. With a focus on the resumption of the mango export to the EU market, the descriptions that will often be referred to in this document will be that concerning the apple mango though other varieties are also of importance in the same market.

3.1 Batch System (Sometimes called “Jacuzzi System”)

Most hot water immersion treatment facilities are of the batch system type. In this system, baskets of fruit are loaded onto a platform, which is then lowered into the hot water immersion tank where the fruit remain at the prescribed temperature for a certain length of time, then are taken out, usually by means of an overhead hoist. In this system, the treatment chart **must** indicate (by an identifiable marking) when a fruit basket is prematurely removed from the tank. Other alternatives include a solenoid switch, sensor, or similar device that disengages whenever a basket is removed from the treatment tank, or a locking device to make it physically impossible to remove the fruit until the treatment is fully complete.

3.2 Continuous Flow System

In the continuous flow type of system, the fruits are submerged (either loosely or in wire or plastic mesh baskets) on a conveyor belt, which moves slowly from one end of the hot water tank to the other. Belt speed is set to ensure the fruits are submerged for the required length of time. This system requires an instrument to monitor the speed of the conveyor belt. This can be accomplished by attaching a speed indicator (encoder) to the gear mechanism. The belt speed is recorded on the same chart as the time and temperature, and also indicates whether the belt is moving or stopped during the treatment cycle. Smaller fruits require less treatment time than larger fruits. Therefore, conveyor belt speed should be adjustable to accommodate treatments of different lengths of time. As an alternative, the belt speed may remain constant, but the length of the submerged portion of the belt is adjusted according to the length of treatment time required for the particular size of fruit. The conveyor **must** prohibit either forward or backward movement of the fruit during treatment (due to flotation).

Advisory

Some operators believe that treating fruit while it passes through the system on a conveyor belt is an advantage. Few new systems of this type were built after 1990, presumably because mechanical fruit damage (scratching of the peel)

often occurs if the fruit are **not** in baskets. The system also occupies much more floor space in the plant than a batch system

3.3 Water Quality

The water used for washing, dipping/heating, hydro-cooling, or showering the fruit should be chlorinated at a level **not** exceeding 200 parts per million (ppm). This level is easier to maintain if the water is first filtered and run through a flocculation process to remove organic material that would otherwise bind with the chlorine. There is need to check the water for microbial contamination on a regular basis. To maintain sanitary conditions, change water as necessary.

To ensure the safety of the fruit, the facility **must** clean and sanitize surfaces that come into contact with water, such as wash tanks, hot water tanks, and hydro-cooling tanks, as often as necessary. In order to ensure efficient operation, routinely inspect and maintain equipment designed to assist in maintaining water quality, such as chlorine injectors, filtration systems, and backflow devices. Create procedures to include water change schedules for all processes that use water.

Advisory

Periodic monitoring of chlorine levels is critical because levels above 300 ppm can result to metal corrosion.

3.4 Electrical and Electronic Components

3.4.1 Wiring

Electrical wiring throughout the hot water treatment facility **must** meet both international as well as local safety code requirements. To eliminate shock hazard, earth grounding is required for all electrical wiring located in the vicinity of water. In order to prevent damage, shield wires inside metal or PVC conduit.

3.4.2 Computers and Microprocessors

To maintain accuracy and reliability, place computers and microprocessors in a climate-controlled (air conditioned) room. The room should be above tank level provided with a clear view of the treatment tank(s) and has to be lockable. This room can also serve as an office for the inspector.

3.4.3 Commercial Line Conditioner (Surge Protector)

A commercial line conditioner is recommended for use with computers and microprocessors to provide protection from voltage irregularity (power surges), noise reduction, and harmonic distortion.

3.4.4 Electrical Generator

In the event of a power outage and to provide a secondary source of electricity to enable continued plant operation, an electrical generator is recommended as a backup power supply. This is also a requirement as per the KEPHIS protocol

3.5 Fruit Sizing Equipment

In the treatment schedule, the duration of hot water immersion depends on the particular weight class and variety of the fruit being processed. The inspector **must** visually inspect and weigh the largest fruit until the inspector is satisfied that **all** of the fruit is within the weight class. The weight inspection **must** occur for each lot change (orchard or variety) to ensure the accuracy of the sizing equipment. **No** mangoes will be accepted that are over the weight class. It is very important to have accurate sizing equipment that sorts the fruit into groups, either by diameter or by weight (Weight sorting is the preferred method.) If the weight range is too broad, recalibrate the equipment so that the fruits are treated effectively. Fruits larger than a recommend cluster will not be adequately treated to the core of the fruit. On the other hand fruits smaller that a targeted cluster may end up being cooked when the rest are properly treated.

3.6 Boilers and Thermostatic Controls

3.6.1 Adequate Water Heating Capacity

The fact that hot water is the energy transfer mechanism, it is important that the facility **must** have adequate water heating capacity (i.e. a powerful enough boiler), and an accurate enough thermostatic controls to hold the water temperature at or about the temperatures prescribed in the treatment schedule for the given length of time.

3.6.2 Thermostatic Controls (Set Point)

KEPHIS requires that the thermostatic controls be automatic. The temperature set point(s) are determined and approved during the official performance test, and **must** be high enough to ensure the water in the treatment tank will meet or exceed the minimum treatment temperature prescribed for the fruit. Once approved, do **not** tamper with the temperature set points. Temperature set points **must** remain constant for the entire shipping season. However, if the operator of the facility requests a change in set points, the inspector should conduct a new performance test. If this test is unsuccessful, set back the tanks to their prior set points.

3.6.3 Multiple Set Point Option

Managers of some facilities use multiple set points for each tank. The initial set point is higher than the other set points. All set points will be selected by the facility manager or systems engineer based on results of the preliminary performance test. Verify the set points during the official performance test, and the same procedure **must** be repeated on each subsequent commercial treatment. This system works only for tanks that treat only one cage (basket) of fruit at a time.

Tanks are **not** allowed to have any set point that is lower than the standard treatment temperature for the commodity being treated (46.1- 47.1°C for mangoes).

3.7 Water Circulation

Install a water circulation system in the tank to provide uniform water temperatures throughout the treatment process and to avoid the formation of cool pockets during treatment. To guarantee that the equipment is **not** turned off during the treatment process, the controls for the circulation pumps or propellers **must** be tamper resistant. For the safety of personnel working in the area, shield pulleys on all pumps located within 2 meters of the floor. After the first 5 minutes of treatment (with the tank sensor at “lowest temperature permitted at that set point”). Using a flotation barrier, keep the fruit at least (10.2 cm) below the water surface during the treatment.

3.8 Temperature Sensors

3.8.1 Type of Sensor

Permanently install platinum 100-ohm resistive thermal detectors (RTD sensors) in the lower third of the tank. The resistance of an RTD sensor linearly changes with temperature, whereas thermistors and thermocouples are nonlinear and less stable. Major advantages of RTD sensors include long-term stability, high signal levels, and overall accuracy of the system. Place the sensor unit within the distance of 2.54 cm of the sensor rod. The sensor **must** have an outer sheath of 6.4 mm or less in diameter.

3.8.2 Number of Sensors Required and Their Placement

For continuous flow systems, the minimum number of sensors required is at least 10 per tank, which **must** be spaced throughout the length of the conveyor. For batch systems, the requirement is at least two sensors per tank. However, in tanks that treat multiple baskets (cages) of fruit, there **must** be at least one sensor per basket position. (A tank with four basket positions, for example, would require at least four sensors.) In both the batch and continuous flow systems, install sensors in the lower third of the tank.

3.8.3 Tank Access for Temporary Placement of Portable Sensors

The hot water tank **must** be designed to accommodate the temporary placement of numerous portable sensors or probes to be used during the performance testing procedure required for certification or recertification. During the testing procedure and at the direction of the inspector who conducts the performance test, position the temporary sensors throughout the load of fruit. The facility is required to purchase and have available 24 portable thermistor or thermocouple sensors (each with its own flexible cord at least 5 meters in length, and a portable temperature monitor that reads to the nearest one-tenth of a degree.

3.8.4 Certified Glass-Mercury, Non-mercury, and Digital Thermometer

The treatment facility is required to have at least one high-accuracy, water immiscible, certified mercury, non-mercury, or digital thermometer on the premises at all times. This thermometer **must** be accurate to 0.1 °C and will cover the range between 45 °C to 47.8 °C. It will be used as the standard against which all sensors are calibrated.

3.8.5 Temperature Recorder

Use an automatic temperature recorder (strip chart or data logger) to record the time and temperature during each treatment.

3.8.6 Automatic Operation

The instrument used for recording the time and temperature **must** be capable of automatic operation whenever the hot water treatment system is activated.

3.8.7 Long-Term Recording

The recording equipment **must** be capable of nonstop recording for an extended period of time. Continuous flow systems require recording equipment capable of operating for up to 12 consecutive hours.

3.8.8 Recording Frequency

The time interval between prints will be **no** less than once every 2 minutes. Alternatively, a strip chart system can be used that gives continuous colour pen lines. The numerical print or pen line representing each temperature channel (sensor) **must** be uniquely identified by colour, number, or symbol. It is **not** necessary to record temperatures from sensors located in portions of the tank **not** in use.

3.9.9 Accuracy

The accuracy of the temperature recording system (i.e. sensors and recorders) **must** be within 0.3 °C of the true temperature (as verified by a certified mercury, non-mercury, or digital thermometer). The temperature variation for the control sensors should be as close to zero as possible.

3.8.10 Repeatability

When used under field conditions over an extended period of time, the recording equipment **must** be capable of repeatability to within 0.1 °C of the true calibrated readings. Failure to maintain reliability, accuracy, and readability in a previously approved instrument will result in cancelling the approval. The design, construction, and materials **must** be such that the typical environmental conditions (including vibration) will **not** affect performance.

3.8.11 Calibration

Individually calibrate channels (sensors) against a certified mercury, non-mercury, or digital thermometer reading in tenths of a degree Fahrenheit or Centigrade, within the range of 45 °C to 47.8 °C. The engineering firm that installs the recording equipment **must** also calibrate it. (Calibration equipment often used for this purpose includes, for example, a Decade instrument and relay range cards.) Calibrate the sensors at or near the fruit treatment temperature 46.1°C.

3.8.12 Range

The recorder **must** be programmed to cover the entire range between 45 °C to 47.8 °C, with a resolution of one-tenth of a degree. The range should **not** extend below 37.8 °C **nor** above 54.4 °C. If the range band of the recorder is wider than this, restrict it (narrowed) with proper programming.

4.0 APPROVED INSTRUMENTS IN THE TREATMENT FACILITY

4.1 KEPHIS-Approved Recorder Models

Some recorder models currently on the market are **not** approved by KEPHIS for various reasons. For example, if the recorder only displays the sensor numbers and temperatures **without** making a printout on paper; or if it prints out the temperature data only after the treatment has been completed, it is **not** approved by KEPHIS. (These are known as “memory loggers”). These two types of recorder models do **not** provide an adequate level of monitoring during treatment. Also, revolving circular charts are **not** acceptable because of the difficulty in reading fractions of one degree. Temperature recorder models presently recommended by KEPHIS are listed below. They can be either of the strip chart or data logger type. Some have adjustable chart speeds. Additional temperature recorder models may be added to this list if they meet the required technical specifications.

4.2	Approved	Strip	Chart	(Pen)	Recorder	Models
Honeywell		DPR	100A		(3-channel	capability)
Honeywell		DPR	100B		(6-channel	capability)
Honeywell		DPR	100C		(3-channel	capability)
Honeywell DPR 100D (6-channel capability)						
Honeywell		DPR	180		(36-channel	capability)
Honeywell		DPR	1000		(6-channel	capability)
Honeywell	DPR	3000,	version	D4	(32-channel	capability)
Molytek						2702
Neuberger						P1Y
Toshiba						AR201
Tracor 3000						

4.3 Approved Data Logger Recorder Models

- ASICS Systems B & C
- Chino AA Series
- Cole Parmer (32-channel capability)
- Contech (10-, 16-, and 32-channel capability)
- Model: Smart Seda
- Flotek (**must** be attached to a printer)
- HACCP Warrior PTR-4 (4-channel capability)
- HAACP Warrior PTR-10 (10-channel capability)
- Hidrosoft

- Honeywell DPR I00B (6-channel capability)
- Honeywell DPR-1500 (30-channel capability)
- Honeywell DPR-3000, version D4 (32-channel capability)
- HyThsoft v2
- IBM-PC (**must** be attached to a printer)
- Koyo, Model Direct Logic DL 350, with Hidro Soft
- Nanmac H30-1
- National Instruments (all HTS models and Labview 6.1 software)
- NOJOXTEN-BR with software–Automation Studio V 3.09 IEC 61131-3- ST
- Omega OM-205
- Omega OM-503
- Ryan Data Mentor (12-channel capability)
- Tracor Westronics (DDR10)

If you use others not listed above they must have similar technical specifications.

5.0 CHART PAPER SPECIFICATIONS

5.1 Celsius or Fahrenheit Scale

Temperature can be recorded either in Fahrenheit or Celsius, although Celsius is preferred by KEPHIS.

5.1.1 Scale Deflection

Scale deflection on the strip chart paper **must** be at least 0.10 inches for each degree Fahrenheit, or at least 5 mm for each degree Celsius. Greater width between whole degrees, however, is preferred. Between each line representing one degree, there **must** also be finer lines, each representing subdivisions of one-tenth or two-tenths of a degree, in the range of 113 °F to 118 °F (45 °C to 47.8 °C).

5.2 Sample Required

Submit a sample of the strip chart or numerical printout made by the recording equipment to KEPHIS. It should be in the exact format to be used at the facility during the treatment cycle. Each symbol on the print wheel (or ink colour, in the case of strip charts) **must** correspond to and identify the particular sensor that it represents.

5.3 Chart Speed

Chart speed for strip chart recorders **must** be **no** less than 5mm for every 5 minutes of treatment time.

5.4 Chart Length

The chart paper **must** be long enough to display at least 1 entire treatment. Continuous flow systems **must** contain enough chart paper to continuously record temperatures for up to 12 consecutive hours.

5.5 Alarm System

An alarm is required for all batch (Jacuzzi) systems, in order to notify packinghouse employees that a treatment has been completed for a particular basket (cage). This system can be an audible noise (such as a horn, buzzer, or bell) or a highly

visible light attached to a timing device located on the equipment that indicates time and temperature. Some facilities use both a noise and a light. To avoid “overcooking,” the alarm system alerts the operator of the hoist to remove a basket from the tank at the end of treatment.

6.0 SAFEGUARDING THE TREATED FRUIT

6.1 Layout and Flow Pattern

Design the flow pattern of the fruit moving through the hot water treatment process to ensure that fruit waiting to be loaded into the hot water immersion tank **cannot** become mixed with fruit that has already completed treatment. Submit a drawing showing the proposed layout of the packinghouse to KEPHIS for approval.

6.2 Garbage Disposal

In order **not** to attract fruit flies, place cut fruit, culled fruit, rotting fruit, and miscellaneous garbage into covered containers and remove from the premises daily.

6.3 Quarantine Area

Bring treated fruit to an insect-free enclosure immediately after treatment. The treated fruit **must** remain there until loading into insect-proof shipping containers. The designated enclosure is usually a screened room. Packing line equipment, hydro-cooling equipment, and cool storage room (if any), should be located in this area, but this equipment is **not** a requirement. To prevent the movement of untreated fruit (accidentally or intentionally) into the insect-free quarantine area, enforce effective procedures.

6.4 Screening and Other Materials

Ordinary window screen or mosquito netting is sufficient to exclude fruit flies. Inspect it regularly and repair it as often as needed. Solid glass, concrete, drywall, or wooden walls are also acceptable.

6.4 Air Curtain

Place on the wall or ceiling prior to entering any quarantine area an apparatus that generates a high-velocity wind barrier or air curtain (such as fans or blowers and associated air-directing chambers or enclosures such as baffles, boxes, etc.). This device **must** exclude the possible entry of fruit flies into the insect-free enclosure.

6.5 Loading of Treated Fruit

When **not** in use, close doors leading from the quarantine area to the loading dock. When loading, truck vans and containers **must** form a fly-proof seal with the exterior wall. Prior to loading, inspect and disinfect truck vans and containers. If wooden pallets are used, they **must** be completely free of wood infesting insects and bark.

6.6 Pre-treatment Warming Options

Pre-warming the fruit is sometimes desirable in order to meet the APHIS requirement that all fruit pulp temperatures be at least 70 °F before the start of the certification performance test. At the very least, the fruit pulp temperature **must** reach the minimum pulp temperature stabilized during the certification test for commercial treatment. After pre-

warming, take pulp temperatures from the mangoes located at the coldest part of the crates and/or baskets. Do **not** take the pulp temperatures from the mangoes that are located on the outside of the basket or crate.

6.7 Post-treatment Cooling Options

Cooling the fruit after hot water treatment is **not** a KEPHIS requirement but recommended so as to preserve the fruit quality.

6.8 Post-treatment Cooling Options

Cooling the fruit after hot water treatment is **not** a KEPHIS requirement. However, from the standpoint of fruit quality, many facilities choose to install a system to cool the fruit after removal from the hot water. Hydro-cooling of the treated mangoes is allowed after a waiting period of **30 minutes** following treatment, unless the original dip times indicated in the treatment schedule are extended for **10 minutes**. Allowing the fruit to simply stand for at least 30 minutes after being removed from the hot water tank is thought to be helpful in killing immature stages of fruit flies because the mangoes complete their “cooking” process during that time.

6.9 Refrigerated Room

The recommended storage temperature for mangoes is between 55 °F and 57 °F (**12.8 °C and 13.9 °C**) at 85 to 90 percent relative humidity. These temperatures delay softening and prolong storage life to approximately 2 to 3 weeks.

6.10 Fans

KEPHIS allows the use of fans in the screen room to blow air over the fruit as soon as they are removed from the hot water tank (if desired). However, the ambient air **cannot** be less than 70 °F.

6.11 Hydro-cooling

KEPHIS allows the use of a cool water tank or shower system, but with the following provisions:

- During the waiting period and hydro-cooling period, safeguard the mangoes in a room or tunnel, separate from the hot water tanks
- Water temperatures used during hydro-cooling **must** be 70 °F or above
- Water used for hydro-cooling should be chlorinated (**not** to exceed 200 ppm)
- Any other chemicals, such as fungicides, are optional, but **must** be approved in advance

6.12 Facility Changes

Once KEPHIS has formally approved the plans and drawings for a particular hot water immersion treatment facility, there should be **no** further changes in the equipment **without** KEPHIS prior approval. Any proposed changes or improvements **must** be described in writing (with accompanying drawings, if necessary) and **must** be approved by KEPHIS in writing. Examples of proposed changes include adding additional treatment tanks, adding a cold storage room, and changing the model of the temperature recorder.

7.0 SAFETY AND HEALTH CHECKLIST

While setting up a hot water treatment all other regulatory rules by other institutions governing operation of pack houses as well as international standards must be followed. The items below are the bare minimum.

- Adequate lavatory
- Admission of children or unauthorized persons into the treatment and packing areas is prohibited if not accompanied by a responsible employee
- Approved safety ladders or walkways (catwalks, etc.) for observing treatment tank operations
- Electric power meets safety code requirements
- Electrical wiring, including switches and other connections, contained in metal or PVC conduit and grounded to prevent electrical shock
- Engines, pulleys, drive belts, and other hazardous moving parts, if located within 2 meters of floor level, guarded with a safety shield or barrier
- Fire extinguisher located near the boiler (if installed)
- First aid kit located near moving machinery
- Hard hats for workers and visitors **must** be worn in the treatment and loading areas
- Steam and hot water pipes insulated or otherwise protected
- Sufficient lighting provided in working areas

8.0 WORK PLAN

A Work Plan is a formal agreement signed by a representative of each treatment facility in a particular country, the Agriculture Ministry and by KEPHIS. Work Plans govern the day-to-day operations of each facility and can be improved from one year to the next. Work Plans usually contain additional provisions not included in this checklist. Fruit exporters are required to operate under general KEPHIS guidelines and to be in full compliance with all KEPHIS regulations as outlined in detail in the current Work Plan. The operator of the facility, as well as the inspector assigned to the facility, should each keep a copy available to resolve any disputes.

8.1 Conducting the Treatment

After all the fruit is loaded into the containers and onto the pallets, and the sensors are properly installed into the heaviest fruit, load the fruit into the chamber. Close and lock the chamber doors to prevent accidental openings. During the treatment, the pack house official or KEPHIS designated representative **must** monitor the sensor data to ensure the treatment is proceeding in the approved manner. The official must also check the chamber for leaks or other problems during the treatment.

8.2 Verifying the Treatment

The pack house official or KEPHIS designated representative **must** review the treatment temperature record after the treatment is complete. The official **must** ensure that the temperature and recording interval requirements have been met. Additionally, the official **must** verify that the requirements for the duration of the run up and dwell times are conducted according to the treatment schedule. Time requirements for the run up and dwell times are continuous. Once the official determines that all the treatment requirements are met, the official **must** sign and date the treatment record.

8.3 Post-Treatment Handling

After the treatment is complete, move the fruit from the chamber into the quarantine area. Cool the fruit according to the requirements listed in the treatment schedule.

8.4 Record Keeping

Keep all treatment records at the treatment facility for 1 year after treatment. The facility **must** also maintain a record of all problems and/or breakdowns and any maintenance performed on the chamber. All the records listed above **must** be made available to the KEPHIS official upon request.

8.5 Common Problems and Failure Points

If the temperature recording intervals and minimum temperature requirements are **not** met, the treatment fails. The **only** exception to this is that a sensor may record **no** data for a single recording interval during the treatment. (Note: This does **not** mean the temperature may be out of range, **only** that the data may be missing.) After reviewing the treatment data, the official should sign and date the data. If a problem arises during treatment, such as a sensor stops recording data, records above other sensors, appears to be broken, or if the temperature drops below the required temperature, the following actions **must** be taken:

- After the treatment is complete, test the sensor according to calibration procedures. If the sensor passes calibration, then there was a problem with the treatment. FAIL the treatment.
- If the sensor fails calibration, then there was a problem with the sensor. PASS the treatment.
- If there is more than one failed sensor, then fail the treatment. The facility manager must determine if the fruit will be re-treated or will be removed from the chamber into the non-quarantine area.

9.0 APPENDIX

9.1 Important Treatment Terminology

The following terms are referred to in the treatment schedules:

Heat up time:

The minimum time allowed for all the temperature probes to reach the prescribed minimum pulp temperature (may also be referred to as the approach or run-up time)

Heat up recording interval:

The time interval required for recording temperatures during the heat up time

Minimum air temperature:

The minimum temperature required for the air in the chamber

Minimum pulp temperature at end of heat up:

The minimum temperature required for all fruit pulp temperature probes

Dwell time:

The length of time all pulp temperature probes must maintain the minimum pulp temperature

Dwell recording interval:

The time interval required for recording temperatures during the dwell time

Cooling method:

Optional and may be either hydro-cooled or air cooled



REPUBLIC OF KENYA

MINISTRY OF TRANSPORT AND INFRASTRUCTURE

-

DIRECTORATE OF PUBLIC WORKS

**PROPOSED CONSTRUCTION OF
HOT WATER TREATMENT PACK HOUSE
AT
THE NAIROBI HORTICULTURAL CENTRE**

TENDER SPECIFICATIONS

SPECIFICATIONS AND PRICING NOTES

The contractor should read carefully the following specification for workmanship prepared in accordance with standard specifications for building works 1976 Edition prepared by the Ministry of Public Works

GENERAL ITEMS

Materials Generally

- A.1 All materials used on the works shall be new and of the qualities and kinds specified herein and equal to approved samples. Deliveries shall be made sufficiently in advance to enable samples to be taken and tested if required. No materials shall be used until approved and all materials which are not approved or which are damaged, contaminated or have deteriorated in any way or do not comply in any way with the requirements of this specification shall be rejected and shall be immediately removed from the site at the Contractors expense.
- A.2 **Material for which there is a Kenya Bureau of Standard specification**
All materials used in the works for which a Kenya Bureau of Standards Specification has been published shall conform with the latest edition thereof in every way. The Architect reserves the right to demand that the Contractor shall obtain at his own expense a certificate in respect of any materials to state that is in accordance with the Kenya Bureau of Standard specification.
- A.3 **Materials for which there is no Kenya Bureau of Standards specification**
All materials used in the works for which no Kenya Bureau of Standards specifications has been published shall conform with the British Standards Specification for such materials. If there are no published standards as specified for any materials, the quality of such materials shall be generally of a standard equal to those for which there is a Kenya Bureau of Standards or British Standard specification.

EXCAVATION AND EARTHWORK

B.1 Site Clearance

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

B.2 Nature of the Soil

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

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

B.3 Foundation Excavations

The foundation trenches and column bases shall be excavated to the widths and depths of the concrete foundations shown on the drawings or to such widths and depths as the Engineer may instruct after examination of the excavations. Quantities of all excavations shall be measured and valued by the Quantity Surveyor and any difference between such measurements and the measurements herein given shall be dealt with as a variation to the Contractor.

If however, the Contractor excavates to any greater depths than shown in the drawings or as instructed by the Engineer, then he shall at his own expense fill in such extra depth of excavation with concrete as specified for the foundations to the satisfaction of the Engineer. The Contractor shall not be paid for the cost of any excavation executed deeper or wider than shown on the drawings or instructed by the Engineer nor the cost of back filling such excavation or disposing of surplus.

B.4 Surplus Soil Disposal

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

B.5 Top Soil for Spreading

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

B.6 Filling under Surface Beds in Buildings

i) Murram filling

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

ii) **Hardcore filling**

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

B.7 Anti-termite treatment

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

B.8 Polythene Sheeting

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

The Contractor shall ensure that the membrane is not pierced while buying, laying and concreting.

B.9 Existing Services

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

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

B.10 Protection

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

CONCRETE WORK

C.1 Codes of Practice

All workmanship, materials, tests and performances in connection with reinforced concrete shall be in conformity with the latest edition of the British Standard for concrete works 9B.S. B 10 parts 1 & 2, B.S 8004, BS. 8007) and any other approved Local and International Standards. Where inconsistency exists between these preambles and these Standards, the Contractor shall notify the Engineer in good time for his Clarification as to which of the two implications on the Contract.

C.2 Supervision

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

C.3 Cement

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

C.4 Aggregate

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

If in the opinion of the Engineer the aggregate meets with the above requirements but is dirty or adulterated in any manner, it shall be screened and/or washed with clean water at the Contractors expense.

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

C.5 **Water**

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

C.6 **Quality Control at Works Stage**

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

C.7 **Cement**

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

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

Class of Concrete	15	10
Nominal mix by volume	1:3:6	1:4:8
Cubic metres of fine aggregate		
Per 50 kg. bag of cement	0.12	0.16
Cubic metres of coarse aggregate		
Per 50kg bag of cement	0.24	0.32
Max. size of coarse aggregate	40mm*	40mm*
*or 20mm for blinding concrete where described.		

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

C.8 **Construction Joints**

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

C.9 **Faulty Concrete**

Any concrete which fails to comply with these Preambles, or which shows signs of setting before it is placed shall be taken Out and removed from the site, where concrete is found to be defective after set the concrete shall be cut out and replaced in accordance with the Engineers instructions. On no account shall any faulty,

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

C.10 **Steel reinforcement**

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

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

C.11 **Fabric Reinforcement**

Fabric reinforcement shall be electrically cross-welded steel wire mesh reinforcement to BS. 1483 and of the size and weight specified and made of wire to B.S. 4482.

C.12 **Fixing Steel Reinforcement**

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

C.13 **Formwork**

The method and system of formwork which the Contractor proposed to use shall be approved by the Engineer before construction commences. Formwork shall be substantially and rigidly constructed of timber, steel, plastic, pre-cast concrete or other approved material.

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

WALLING MATERIALS

D.1 **Cement**

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

D.2 **Lime**

The lime for making mortar shall be obtained from an approved source and shall comply with BS 890 class A for non-hydraulic lime. The lime to be run to putty in an approved lined pit or container. The water to be first run into the pit or container and the lime to be added until it is completely submerged, stirred vigorously until all

lumps are disintegrated and shall be kept constantly covered with water and regularly stirred for at least four weeks. The resulting milk-lime then to be run through a fine sieve and run into a pit or other container and kept clean and moist for not less than two weeks before being used in the works.

D.3 Sand

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

D.4 Water

Shall be as described in Concrete work.

D.5 Stone

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

D.6 Reinforced Walls

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

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

D.7 Wall Ties

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

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

D.8 Fair Face

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

D.9 Pointing

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

GLAZING MATERIALS

E.1 General

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

E.2 Standards

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

E.3 Clear sheet glass etc

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

E.4 Obscured Glass

To be of type described and as approved Architect.

E.5 Putty

a) The putty for glazing to wood sashes is to be linseed oil putty all as B.S. 644. Workmanship

WORKMANSHIP

E.6 General

Glazing of all types in all locations shall be carefully executed by artisans skilled in this type of work and in conformance with the recommendations of CP 152. Glazing shall be carefully fitted so that it is not subject to pressure and stresses imposed by being an oversight fit within framing.

METALWORK MATERIALS

F.1 Generally

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

F.2 Mild Steel

Mild steel shall comply with B.S. 15.

F.3 Hollow Section Tubing

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

F.4 Bolts, Nuts and Washers

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

F.5 Galvanized Sheet Steel

To be No.24 S.W.G. of approved manufacture to B.S. 2989 of quality mild steel sheets cold rolled close annealed patent flattened and hot dip galvanized.

F.6 Stainless Steel

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

F.7 Steel Grilles

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

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

WORKMANSHIP

F.8 Welding

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

F.9 **Painting**

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

Any damage to the printing paint shall be made good to the Architects satisfaction.

F.10 **Fixing of Steel Grills**

Fixing of metal grills shall include for assembling and fixing, including screwing to sub-frames or cutting mortices for lugs in concrete or walling and running with cement mortar (1:4), bedding frames in similar mortar, pointing in mastic, bedding sills, transoms and mullions in mastic, making good finishing around both sides and fixing, and adjusting all fittings and frames.

FLOOR, WALL AND CEILING FINISHINGS

PLASTERWORK

G.1 **Generally**

Render, both internal and external shall be cement and sand in the proportions 1:4 finished to the thickness specified.

Plaster shall consist of an undercoat of 1 part cement to 6 parts sand by volume, and a finishing coat of 1 part cement to 10 parts lime putty. Each coat shall be finished to the thickness specified.

G.2 **Cement**

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

G.3 **Lime**

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

G.4 **Sands**

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

G.5 **Water**

Water shall be clean and kept free from all impurities.

G.6 **Mixing of materials**

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

G.7 **Period between coats**

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

G.8 Surfaces of beds and backings

Screeded beds for insitu finishings of floor finishings bedded in mortar, shall be left rough from the screeding board.

Floated beds for inflexible floor finishings bedded in mastic, shall be left with a plain untextured surface.

Trowelled beds for flexible finishings shall be finished smooth and free from score marks, or depressions.

Screeded backings for insitu wall finishings or wall finishings bedded in mortar shall be scratched for key.

Floated backings for inflexible wall finishings fixed with adhesive shall be left with a plain surface.

Trowelled backing for flexible wall finishings shall be finished smooth and free from score marks or depressions.

Beds and Backings for finishings by specialists shall be to the approval of the specialist.

G.9 Preparation of surfaces

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

PAINTING AND DECORATING MATERIALS

H.1 Colour range

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

H.2 Approval of brands

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

H.3 Quality of Products

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

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

expense.

H.4 Same makers materials used for coating

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

H.5 Remedying defects due to defective materials

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

H.6 Emulsion paint

Emulsion paint (interior and/or exterior), shall have a **P.V.A.** base and shall be of an approved band. The first coat shall be thinned in accordance with the manufactures instructions. Where described as applied externally, the paint shall incorporate an approved fungicide to prevent fungus growth.

H.7 Black bituminous paint

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

H.8 **Primer for iron and steelwork**

Primer for iron and steelwork shall be:

- a) Lead based priming paint complying with B.S. 2523, Type B.
- b) Calcium plumbate priming paint complying with B.S. 3698, Type A.

H.9 **Primer for woodwork**

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

H.10 **Oil paints**

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

H.11 **Polyurethane lacquer**

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

H.12 **Plaster, rendering, concrete blockwork and brickwork**

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

H.13 **Iron and steel**

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

H.14 **Hardwood**

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

H.15 **Fibreboard**

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

H.16 **Plywood**

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

H.17 Woodwork to be painted

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

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

H.18 Woodwork to receive clear finish

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

Workmanship

H.19 Standard of workmanship

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

H.20 Stirring of materials

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

H.21 Manufacturer's instructions

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

H.22. Brush work

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



**REPUBLIC OF KENYA
MINISTRY OF PUBLIC WORKS**

**GENERAL SPECIFICATIONS
FOR
MECHANICAL PLUMBING AND DRAINAGE WORKS,
FIRE FIGHTING EQUIPMENTS,
SOLAR WATER HEATING
INSTALLATIONS**

ISSUED BY:

CHIEF ELECTRICAL & MECHANICAL ENGINEER (BS)
MINISTRY OF PUBLIC WORKS
P.O. BOX 41191,
NAIROBI.

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1.00 PART 1: GENERAL MECHANICAL SPECIFICATION

1.01 Introduction

This section covers the general requirement for plant, equipment and materials forming part of the mechanical works and shall apply except where specifically stated elsewhere in the Specification.

These works shall be as by regulations and standards.

1.02 Regulations and Standards

The Works shall comply with the current editions of the following:

- a) The Kenya Government Regulations.
- b) The Kenya Bureau of Standards
- c) The National Environmental Management Authority Regulations.
- d) The Kenya Building Code Regulations
- e) Local Authority By-laws.
- f) The Electricity Supply Authority By-Laws
- g) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
- h) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
- i) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
- j) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.

1.03 Quality of Materials

All plant, equipment and materials supplied as part of these 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 shall be products of quality standards.

Materials and apparatus supplied by others for installation and connection shall be carefully examined on receipt. Any defects noted, should be brought to the attention of 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.

1.04 **Electrical Requirements**

Plant and equipment supplied 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 specialist. All other wiring and connections to equipment shall form part of mechanical works.

Three copies of all schematic, cabling and wiring
Diagrams shall be supplied for the Engineer's approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents of the protective switch gear.

All electrical plant and equipment supplied shall be rated for the supply voltage and frequency applicable 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.

1.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimize 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 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 equipment shall be replace at supplier own cost.

1.06 **Site Supervision**

There shall be an English-speaking supervisor on the site at all times during normal working hours.

1.07 **Installation**

Installation of all special plant and equipment shall be carried out by 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.

1.08 **Testing**

1.08.1 **Introduction**

The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials.

The right of the Engineer relating to the inspection, examination and testing of plant during manufacture shall be applicable to Insurance companies and inspection authorities so nominated by the Engineer.

The Contractor shall give two weeks' notice to the Engineer of his intention to carry out any inspection or tests and the Engineer or his representative shall be entitled to witness such tests and inspections.

Six copies of all test certificates and performance curves shall be submitted as soon as possible after the completion of such tests, to the Engineer for his approval.

Plant or equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Contractor's own risk and should the test certificate not be approved new tests may be ordered by the Engineer at the Contractor's expense.

The foregoing provisions relate to tests at manufacturer's works and as appropriate to those carried out at site.

1.08.2 **Material Tests**

All material for plant and equipment to be installed under this works shall be tested, unless otherwise directed, in accordance with the relevant KS or B.S Specification concerned.

For materials where no KS or 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.

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 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.

1.08.3 **Manufactured Plant and Equipment – Work Tests**

The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.

A two weeks' notice shall be given 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 Manufacturer.

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 Manufacturer's own risk and should the test and inspection certificates not be approved, new tests may be ordered by the Engineer at the manufacturer's expense.

1.08.4 **Pressure Testing**

All pipework installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and a 48 hours notice to carry out such tests shall be given to Engineer.

Any pipework that is buried or concealed before witnessed pressure tests have been carried out shall be exposed and the specified tests shall then be applied.

A certificate shall be prepared 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.

1.09 **Colour Coding**

Unless stated otherwise, all pipework shall be colour coded in accordance with the latest edition of KSISO10526:1999 or B.S 1710 and to the approval of the Engineer.

1.10 **Welding galvanized pipes**

1.10.1 **Preparation**

Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut or machined to suit the required type of joint. The prepared surface shall be free from all visible defects such as lamination, surface imperfection due to shearing or flame cutting operation, etc., and shall be free from rust scale, grease and other foreign matter.

1.10.2 **Method**

All welding shall be carried out by the electric arc processing using covered electrodes in accordance with KS06-206 :1981 (Confirmed 1999) or B.S. 639 .

Gas welding may be employed in certain circumstances provided that prior approval is obtained from the Engineer.

1.10.3 **Welding Code and Construction**

All welded joints shall be carried out in accordance with the following Specifications:

Pipe Welding

All pipe welds shall be carried out in accordance with the requirements of B.S.806.

General Welding

All welding of mild steel components other than pipework shall comply with the general requirements of KS06-1017-2: 1995 or B.S. 1856.

1.11 **Welding PP-R pipes by means of electric coupling.**

1.11.1 **Preparation**

The surfaces of the pipes and fittings must be clean and without blemish. Ends must be clean cut at right angles.

1.11.2 Method

Pipes and fittings are inserted to the edge of the matrix and held steady without rotating. Once the heating has been completed the parts are extracted from the heating element and rapidly joined axially

1.11.3 Welding by means of coupling

As the electric coupling can slide along the pipes, it is possible to carry out repairs and welds in any part of an existing plant. The parts to be joined must be clean free of grease and perfectly aligned. After inserting the parts to be welded in the coupling, the coupling has to be electrically connected to the welding machine

1.12.0 Welders' Qualifications

Any welder employed shall have passed the trade tests as laid down by the Government of Kenya.

The Engineer may require to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct to replace him with a qualified welder.

2.00 PART2: PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

2.01 Introduction

This section covers the general requirements for plant, equipment and materials forming for the plumbing and drainage installations.

2.20 MATERIALS AND STANDARDS

2.2.1 Pipework and Fittings

Pipework materials to be used shall be as follows:

a) Galvanized Steel Pipework

Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with KS06.366:1982 or 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 KS06-885:1995 or 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.

Polypropylene Pipes –Random (PP-R) Type 3

PP-R type3 pipe work shall be manufactured in accordance with B.S. 7291 part 2001. Dimensions and quality of PP-R Pipes shall be in accordance with DIN 8077 and pipelines in plastics materials joints, Components parts, Installation to be in accordance DIN 16928. joints And fittings to be in accordance DIN16962.

Copper Tubing

All copper tubing shall be as 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 as manufactured in accordance with B.S. 864.

Short copper connection tubes between galvanized pipe work and sanitary fittings shall not be used because of the risk of galvanic action.

If, as may occur in certain circumstances, it is not possible to make the connection in any way than the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

d) Poly-vinyl Chloride (P.V.C) Pressure Pipes and Fittings

All P.V.C. pressure pipes and fittings shall be as manufactured in accordance with KS06-478-2:1993 (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.

e) A.B.S. Waste System

Where indicated on the Designs and Schedules, the 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 or KS06-7831-1:1990, 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 according to B.S. 5572: 1978.

Standard brackets, as supplied for use with this system, shall be used wherever possible.

Where the building structure renders this impracticable the contractor shall provide purpose made supports, centers of which shall not exceed one meter.

Expansion joints shall be provided as indicated. Supporting brackets and pipe clips shall be fixed on each side of these joints.

f) Poly-vinyl Chloride (P.V.C) Pipes and fittings

The contractor shall supply and fix PVC soil pipes and fittings as indicated on the Designs 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 contractor shall be responsible for the joint into the Gully Trap on Drain as indicated on the Drawings.

2.2.2 Valves

a) Draw-off Taps and Stop Valves (Up to 50mm Nominal Bore)

Draw-off taps and valves up to 50mm nominal bore, unless otherwise stated or specified for attachment or connection to sanitary fitment shall be manufactured in accordance with the requirements of B.S.1010.

b) Gate Valves

All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.

All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.

The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

c) Globe Valves

All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061 or KS06-885:1995.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

2.2.3 Waste Fitment Traps

a) Standard and Deep Seal P & S Traps

Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.

In certain circumstances, cast iron traps may be required for cast iron baths and in these instances bath traps shall be provided which are manufactured in accordance with the full requirements of B.S.1291.

b) Anti-Syphon Traps

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Little shampton, Sussex, England or equal and approved.

The tradename for traps manufactured by this company is 'Grevak'.

2.2.4 Pipe Supports

a) Introduction

This 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 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 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 pipeangers, wall brackets, or trapeze type supports. ‘U’ bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.

An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

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

150mm

3.5m

4.5m

The support spacing for vertical runs shall not exceed one and a half times the distances given for horizontal runs.

c) **Expansion Joints and Anchors**

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.

Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The 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 contractor shall supply flexible joints to prevent vibrations and other Movements being transmitted from pumps to piping systems or vice versa.

2.2.5 **Sanitary Appliances**

All sanitary appliances supplied and installed as part of the works shall comply with the general requirements of B.S. Code of Practice 305 and the particular requirements of the latest B.S. Specifications.

2.2.6 **Pipe Sleeves**

Main runs of pipework are to be fitted with sleeves where they pass through walls and floors. Generally the sleeves shall be of P.V.C. except where they pass through the structure, where they shall be mild steel. The sleeves shall have 6mm – 12mm clearance all around the pipe or for insulated pipework all around the installation.

The sleeve will then be packed with slag wool or similar.

2.3 **INSTALLATION**

2.3.1 **Introduction**

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 contractor shall be responsible to for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

2.3.2 **Above Ground Installation**

a) **Water Services**

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe.

Where falls are not shown or stated elsewhere in the Specification, pipework shall be installed parallel to the lines of the buildings and as close to the walls, ceilings, columns, etc., as is practicable.

All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly.

Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with sufficient number of unions to facilitate easy removal of valves and fittings, and to enable alterations of pipework to be carried out without the need to cut the pipe.

Full allowances shall be made for the expansion and contraction of pipework, precautions being taken to ensure that any force produced by the pipe movements are not transmitted to valves, equipment or plant.

All screwed joints to piping and fittings shall be made with P.T.F.E. tape.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b) **Sanitary Services**

Soil, waste and vent pipe system shall be installed in accordance with the best standard of modern practice as described in B.S. 5572 to the approval of the Engineer.

The 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.

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 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 works shall be installed in accordance with the best standard of modern practice as described in C.P. 305 to the approval of the Engineer.

2.4 0 TESTING AND INSPECTION

2.4.1 Site Tests – Pipework Systems

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.

If preferred, testing the pipelines in sections may be done. 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.

All necessary precautions to be taken 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.or KS02-254:1986

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.

2.4.2 **Site Test – Performance**

Following satisfactory pressure test on the pipework system operational tests shall be carried out in accordance with the relevant B. S. Code of practice on the systems as a whole to establish that special valves, gauges, control, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.

All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe “sweating”, due to condensation will cause nuisance.

All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows:

- i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.
- ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors
- iii) Approved by the Engineer.

All lagging for cold and hot water pipes erected in crawlways, ducts and above false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310 respectively to the approval of the Engineer.

The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests.

The 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.

2.5 STERILISATION OF COLD WATER SYSTEM

All water distribution system shall be thoroughly sterilized and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilisation procedures shall be carried out in accordance with the requirements of B.S. Code of Practice 301, Clause 409 and to the approval of the Engineer.

3.00 PART 3: PARTICULAR SPECIFICATIONS FOR PORTABLE FIRE EXTINGUISHER.

3.01 INTRODUCTION

The general specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers.

The contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the designs 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 designs, he shall clarify these differences with the Engineer before tendering.

3.02 WATER/CO₂ EXTINGUISHERS

These shall be 9-litre water filled CO₂ cartridge operated portable fire extinguishers and shall comply with B.S. 401 or B.S. 1288.or KSISO7165:1999 and to the requirements of B.S.1004. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

a)Method of operation.

- b) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.
- c) Name and address of the manufacturer or responsible vendor.
- d) The nominal charge of the liquid in imperial gallons and litres.
- e) The liquid level to which the extinguisher is to be charged.
- f) The year of manufacture.
- g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 p.s.i.).
- h) The number of British Standard 'B.S' 1004 or B.S. 1449.

3.03 PORTABLE CARBON DIOXIDE FIRE EXTINGUISHERS

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 1004.or KSISO7165:1999

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.(EN3:1996)

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:-

The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.

- a) Method of operation.
- 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

3.04 DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS 1449 or KSISO7165:1999 and BS 1004. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470 : 1972(EN3: 1996) and shall be suitably protected against corrosion.

The dry powder charge shall be not-toxic and retain it s free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.

The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant.

Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information

- a) The word “Dry Powder Fire Extinguisher”
- b) Method of operation in prominent letters.
- c) The working pressure and the weight of the powder charge in Kilogramme.
- d) Manufacturers name or identification mark
- e) The words “RECHARGE AFTER USE” if rechargeable type.
- f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.
- g) The year of manufacture.
- h) The Pressure to which the extinguisher was tested.

- i) The number of this British Standard BS 3465 or BS 5423: 1977.
- j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be supplied with the refill.

3.05 AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. EN 3/BS 1449 and BS 1004 with the following specifications:-

Cylinder: to B.S. 1449 or KSISO7165:1999

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. 381 C.

4.07 FIRE BLANKET

The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1210 mm and shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from s jacket to BS 1721.

4.08 SIGNAGE -FIRE EXIT SIGN

Proceed and procure and install as below;

Print Fire Exit signs on the Perspex plate, 5mm 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.

4.09 SIGNAGE -FIRE INSTRUCTION NOTICE

Print fire instruction on the Perspex plate, 5mm thick with White Colour Background measuring 510mm lengthx380mm width 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 fire Brigade 222181 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.

4.00 PART 4: PARTICULAR SPECIFICATIONS FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF THE HOSEREEL SYSTEM

4.01 Introduction

The general 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, AND BS 5274.

4.02 Climatic Conditions

- a) The following climatic condition apply at the site of the works and all plant equipment, apparatus, materials and installations shall be suitable for these conditions.
- b) Where not otherwise stated, all ratings of plant, equipment apparatus shall be interpreted as site rating and NOT sea level or other ratings.
- c) Maximum temperature °C
- d) Minimum Temperature °C
- e) Average Temperature °C -40°C
- f) Range of Relative Humidity –%
- g) Altitude M
- h) Latitude °S
- i) Longitude °E
- j) Rainfall extremely heavy at certain period of the year.

4.03 Fire Hosereel Pumps

The fire pumpset shall be a fully automatic package unit. The unit shall consist of pumps of appropriate duty at a given head

The complete specification of the package pump set to be as follows:-

a) **PUMPS**

(Specify)

b) **PUMP MATERIALS**

Suction and Discharge Casing to be made Grey Iron. Shafts, conveyors, diffusers, impellers and the external elements made from Stainless Steel.

c) **MOTORS**

(specify)

d) **MECHANICAL SEAL**

(specify)

e) **BASEFRAME**

Welded fabrication from Mild Steel sections. With facility for lifting unit.

f) **PIPEWOK**

Medium gauge Galvanized Pipework to B.S. 1387 and Galvanized fittings to B.S. 143/1256. All Pipework to terminate with B.S 4504 NP. 16 Flanges. Flexible connections to be affixed to suction and discharge connections.

g) **VALVE**

Pump Isolating Valves, Butterfly valve to B.S. 5155 with Cast Iron nylon coated disc and black airtrile liner. Non-Return Valve vertical lift type to be manufactured from Cast Iron with nitrile seal.

h) **CONTROL PANEL**

Standard Panel cubicle to be manufactured to IP. 55 standards, containing Starters of appropriate ratings

Panel to include power On Light, Run and Trip Lights, Hand/Off/ Auto switches, duty pump selector switch, disconnect switch and line and control circuit fuses, Switches to conform to IP. 54.

Safety features to include 24 volts low voltage controls except for starter coils. Panel mounted on vibration isolators to minimize vibration to electrical equipment.

i) **PRESSURE SWITCH:**

Differential adjustment type switch manufactured to IP.14 standards. Multi-pump sequencing control to be affected from a single pressure instrument, utilizing control circuitry specially for pressure boosting applications.

j) 4" Dial Bottom Connection to B.S. 1780 calibrated in Bars and KPa..

K) MEMBRANE TANK

Fabricated Steel construction housing a natural rubber diaphragm, ideally suited for drinking water applications. Precharged with Nitrogen to correct pressure at test stage.

The panel shall incorporate HRC main fuses and thermal overloads for the pump motors, timer control unit for minimum run period, start relay incorporating timing element for standby pump delay and one set of voltage free changeover contacts to give remote alarm/indication for the indicator lights motioned.

L) Pipework

The Pipework for the hose reel installation shall be galvanized wrought steel tubing "Medium" Grade Class "B" to BS 1387:1967 with pipe threads to BS 21.

M) Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings welded or seamless fittings conforming to BS 1740 Part 1971 or malleable iron fittings to BS 143.

All changes in direction will be standard bends or long radius fittings. No. elbows will be permitted.

N) Flanges

The flanges shall comply with BS 4504 : 1969. All flanges shall comply to a nominal pressure rating of 16 bar (P.N. 16) and shall be of either cast iron or steel.

O) Gaskets

The gaskets for the use with flanges to BS 4304 : 1969 shall comply with BS 4865 part 1 : 1072 for pressure up to and not exceeding 64 bar.

P) Non-return Valves

The non-return valves up to and including 80mm diameter shall be to BS 5153 : 1974 with flanges to BS 4504 P.N. 16.

Q) Gate Valves

The gate valves upto and including 80mm shall be as Crane NO. D151 non-rising stem and wedge disc to BS 21 taper thread.

R) Sleeves

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

S) Floor and ceiling plates

Where pipe pass through floors, walls or ceilings, floor, wall and ceiling plates shall be secured around the pipe. The plates shall be of stainless steel construction and will serve no other purpose than to present a net finish, to the exposed installation.

T) Hosereels

The hosereels to the installation shall consist of recess and no-recess automatic hosereels.

All the above hosereels shall comply with BS 5274 : 1976 and BS 3169 : 1970 and is to requirements C.P. 5306 Part I : 1976.

The hosereels shall be supplied and installed complete with first-aid non-kinking hose 30 metres long, with nylon spray/jet/shut-off nozzle fitted. A screw down chrome plated globe valve to BS 1010 to the inlet to the reel .

The prifice to the nozzle is to be not less than 4.3 mm to maintain a minimum flow of 0.4L/s to the jet.

U) Earthing

The hosereel installation shall be electrically earthed by a direct earth connection.

V) Finish Painting

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

W) Testing and Commissioning

The hosereel system is to be flushed out before testing to ensure that no builders debris has entered the system. The system is to be then tested to one and half times the working pressure of the installation to the approval of the Engineer. Simulated fault condition of the pumping equipment, is to be carried out before acceptance of the system by the Engineer and Architect.

X) Instruction Period

The Sub-Contractor shall allow in his contract sum for instructing of use of the equipment to the clients 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 seven days in which time the Clients staff shall be instructed in the operation and maintenance of the equipment.

GENERAL SPECIFICATIONS FOR SOLAR WATER HEATING INSTALLATIONS

GENERAL SOLAR WATER HEATING SPECIFICATIONS

CLAUSE NO.	DESCRIPTION
1.1.0	Quality of Materials and Workmanship Genera
1.1.1	Solar Panels
1.1.2	Insulation
1.1.3	Alternate solar Heating System
1.1.4	Test and Efficiency Certificate
1.1.5	Pipework Above Ground
1.1.6	Water storage Tanks

1.1.7	Protection of Metal surfaces
1.1.8	Instrumentation
1.2.0	Commissioning and Maintenance
1.2.1	Commissioning and Testing
1.2.2	Spare Parts
1.2.4	Maintenance Manual
1.2.5	Maintenance after Defects Liability Period
2.0	Technical Questionnaire

SOLAR HEATING SYSTEM

GENERAL SOLAR WATER HEATING SPECIFICATIONS

1.1.0 QUALITY OF MATERIALS AND WORKMANSHIP

1.1.1 General

All materials, equipment and accessories are to be new and in accordance with the requirements of the current rules and regulations where such exist, or in their absence with the relevant British/European standard.

Uniformity of type and manufacture of equipment or accessories is to be preserved as far as practicable throughout the whole work.

If in this specification, the practice is adopted of specifying a particular item as “similar” to that of a particular firm’s product, it is to be clearly understood that this is to indicate the type and quality of the equipment required. No attempt is being made to give preference to the equipment supplied by a firm whose name or products is being quoted.

Where particular manufacturers are specified herein, no alternatives makes will be considered, and the Engineer shall be allowed to reject any other makes.

The tenderer will be entirely responsible for all the materials, apparatus, equipment, etc in connection to his work and shall take special care to protect all parts of finished work from damage until handed over to the Employer.

The work shall be carried out by competent workmen under skilled supervision. The Engineer shall have authority to have any of the work taken down or changed, which is executed in any unsatisfactory manner.

The works shall be carried out strictly in accordance with:

- a) British Standard B.S. 5918, Domestic hot water supply and solar water heating System
- b) "British code of Practice" C.P. 310: Water Supply
- c) British Standard code of Practice" C.P. 342: Centralized Hot water supply
- d) All other relevant British standard Specifications and Codes of Practice (herein after referred to as B.S and C.P respectively.)
- e) By-Laws of the Local Authority
- f) The "Specification" and the "Particular Specification"
- g) The tender/working drawings
- h) The engineer's Instructions.

The drawings and specifications are to be read as a whole and are to explain each other. Work shown on the drawings and not described in the specifications or vice versa shall be duly executed under the contract.

1.1.2 Solar Panel – Construction

Solar panels shall be flat plate solar collectors. The structure of the collector and its components must withstand local extreme environmental conditions including winds, storm etc.

1.1.2.1 Solar Panel – External Construction

- a) Glazing material shall be transparent and non-reflective to solar radiation. Total surface heating area of the solar panel shall be as specified elsewhere. The top of the panel shall be a single transparent glazed glass sheet. The glazed glass shall be as low-iron tempered glass or equivalent. The thickness of the glazed glass shall be 3 mm.

The glazing and the holding construction shall have thermal characteristics to withstand extreme local temperatures and also thermal shock due to storms etc. Gasket for the glazing shall be EPDM gasket or similar.

During accidental breakage of the glazing, the glazed glass sheet shall be replaceable at site.

- b) Solar panel collector casement shall be rigid, structurally sound and

corrosion resistant. Sides and bottom of panel shall be 24 gauge galvanized mild steel sheet or 2mm aluminium sheet.

Galvanized mild steel sheet shall be etched primed and applied with two coats of approved oil-base paint.

4 mm to 6 mm breathing hole shall be provided on the galvanized mild steel casing for the removal of moisture content formed due to condensation within the panel.

- c) The panel/glass construction shall be weatherproof. Pipework joints and collector interconnection shall be water proof. Approved silicone gasket or similar to be used at the panel connections.

1.1.2.2 Solar Panel - Internal Construction

- a) **Absorber** - Shall be located directly beneath the glass sheet and fully cover the internal area of the panel.

Absorber shall be made of copper sheet or aluminium with a selective surface chemically treated similar to the black chrome finish or similar. The selective surface shall achieve 95% absorptivity of solar radiation and 15 to 20% emissivity of infra-red radiation. The absorber and the selective surface shall not be affected during life span of the absorber.

- b) **Heat Exchanger**

Copper tubes and fittings shall be utilized for internal panel pipework and in accordance with B.S. 2871 or similar. All joints and connections between the riser and header tubings shall be leak proof and stand to hydraulic pressure tests.

The collector to be pressure tested to withstand a pressure of 8 kg/cm², whichever is greater. In general, collectors shall be pressure tested at 15 times the rated operating gauge pressure of 8kg/cm², whichever is greater.

A certificate of pressure testing to be issued when required and requested by the Engineers.

- c) **Insulation**

The underside of the absorber, inclusive headers and the outer casing internal sides shall be insulated with 50 mm fibre glass insulation, minimum density 64 kg/m³. The insulation shall be non-combustible and shall withstand maximum continuous operating temperature of 200°C (and minimum operating temperature of -50°C).

1.1.2.3 Hot Water Solar Cylinder

- a) The hot water solar cylinder shall have a nominal capacity as specified on the contract drawing and particular specification to the designed highest water level. The hot water cylinder shall have a separate feed tank attached to it.
- b) The cylinders and the feed tanks shall comply with B.S. 417, 699, 2777, 4214, 1565, 1566 and 3198. Refer also Water Storage tanks as specified elsewhere. The Cylinder and tanks shall be supplied complete with screwed BSPF parallel thread flanged connections for flow, return, vent, overflow and drain pipes.
- c) Cylinder shall be provided with a magnesium electrode as corrosion protection, weight: minimum 1.5 kg and have an inspection cover to facilitate renewal of the electrode.
- d) The cylinder shall be galvanized, after manufacture in accordance with the requirements of BS. 729 Part 1 and pressure tested in accordance with the above B.S.

A certificate of pressure testing to be issued when required and requested by the Engineers/Project Manager's Representative. Refer also to "Protection of Metal surface" as specified elsewhere in the specification.

e) Insulation

The cylinder shall be insulated on all the sides with 100 mm fibreglass, or 100 mm thick foam injected polyurethane. At the inspection cover the insulation shall be easily removable.

(f) Cladding

The insulation shall be fully laded with 24 gauge galvanized M.S. Sheet.

1.1.2.4 Flow and Return Pipework

Pipework shall be galvanized mild steel medium duty and in accordance with BS. 1387, and insulated as specified.

1.1.3 INSTALLATION

1.1.3.1 Solar panel

a) Location

The solar panel shall where physically possible be installed facing South. Where it is not practical for the solar panel to face due South, the maximum allowance variation shall be 45°.

b) Angle of Inclination

The solar panels for maximum efficiency should be fitted at an angle equal to the latitude of the installation area. Minimum angle of inclination should be 5°.

d) Solar panel shall be mounted on angle frame and rise to flow outlet according to manufacturer's specifications.

1.1.3.2 Solar Cylinder

a) For Standard Thermosyphon

The solar cylinder shall maintain a minimum horizontal distance of 300 mm above the highest point of the solar panel installation

b) For low Thermosyphon

The solar cylinder shall maintain a flow line up grade of 1.20 minimums where the low profile thermosyphon system is utilized.

1.1.3.3 Flow and Return Pipework

(a) Joints

All joints between ferrous and copper piping shall be made with dielectric pipe unions for the prevention of electrolytic corrosion.

(b) Penetration through Roof decking.

Where pipes penetrate the roof decking, they shall be provided with a sleeve that fits around the pipe making a weatherproof joint between roof and pipe.

(c) Insulation

All pipework between solar panel and storing tank to be insulated with 25 mm fibreglass where exposed to weather, covered with 24 gauges galvanized M.S. sheet cladding and weatherproofed.

All insulation for supply and return pipework in roof space shall be covered with cotton canvas.

All insulation shall be in accordance with BS. 1334 unless otherwise specified.

1.3.3.4 Drain, overflow and Vent Pipework

- (a) The drain and overflow pipework from the solar cylinder shall

Terminate approximately 75 mm away from the nearest drain outlet.

- (b) Vent pipe from the solar cylinder shall terminate approximately 150 mm over the top water level in the solar cylinder feed tank.

- (c) Provided drain valve for the solar panel. Drain valve shall be firmly

Clamped in order to avoid leaks at the joints during operation.

1.3.3.5 Valves

- (a) Copper alloy gate valves complying with BS.1952 shall be installed on flow and return pipework prior to it being connected to the solar cylinder.

- (b) The solar cylinder and panel shall be supplied with stop valves for

Draining and to comply with BS 1010.

1.3.3.6 Inter connection of solar panels

Shall be done utilizing Neoprene tubing or Stainless Steel connector or equivalent, fitted with clamps and able to withstand the working pressure.

1.3.3.7 Precaution

Solar panel glass shall be adequately protected against cracking and the protection removed only when the solar system is commissioned.

1.1.4 Alternate Solar Heating System



Should the contractor intend utilizing an alternate equivalent solar heating system to the one specified under this contract, he shall when submitting his tender provide the Engineer with all necessary information such as material used, construction detail, installation procedure etc. for his approval.

1.1.5 Test and Efficiency Certificates

The Contractor shall provide test and efficiency certificates for the solar panels proposed for the installation in accordance with methods outlined in ASHRAE 23-77.

Certificates for the following tests shall be provided:

1. No flow 30 day exposure
2. Peak exposure test
3. Solar collector Thermal Shock/Water spray test
4. Solar Collector Thermal Shock/Cold Fill test
5. Solar Collector leak and pressure test
6. Thermal efficiency/performance test.

The Contractor shall also provide documentary evidence regarding the absorber sheet, the selective coatings and its optical performances (absorptivity and emissivity factors).

1.1.6 Pipework above Ground

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 building.

All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly. Valves and other user equipment shall be installed with adequate access for operation and maintenance.

Where valves and other operational equipment are unavoidably installed beyond normal reach or in such a position as to be difficult to reach from a short step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with a sufficient number of unions to facilitate easy removal of valves and fittings, and to enable alterations of the pipework to be carried out without the need to cut the pipe.

Full allowance shall be made for the expansion and contraction of pipework, precautions being made to ensure that any forces produced by pipe movements are not transmitted to valves, equipment or plant.

All tubing exposed on faces of walls shall, unless otherwise specified, be fixed at least 25mm clear of adjacent surfaces with approved holder bats built into the walls, cut and pinned to walls in cement mortar. Where fixed to woodwork, suitable clips shall be used.

All tubings specified as chased into walls shall have the wall face neatly cut and chased, the tubing wedged and fixed and plastered over.

All tubing specified as fixed to ceilings, roofs or roof structures shall be fixed with approved mild steel hangers cut and pinned to ceilings, roofs or roof structures.

Where three or more tubes are fixed to the ceilings, roofs or roof structures close to each other, they shall be fixed in positions, which leave the lower surfaces at the same horizontal level, unless otherwise specified.

Tubes fixed to steel work shall be fixed with clips and tap screws.

Tubes shall be fixed to true lines parallel to adjacent lines of the building unless otherwise specified.

Where insulated, tubing shall be fixed with the insulation at least 25mm clear of the adjacent surfaces.

Pipe runs shall be secured by pipe clips connected to pipe hangers, wall brackets or trapeze type supports. 'U' bolts shall not be used as a substitute for the pipe clips without prior approval of the Engineer.

An approximate guide to the maximum permissible supports spacing in meters for the steel and copper pipe is given in the following table for horizontal runs.

<u>Size</u> <u>Nominal Bores</u>	<u>Maximum support</u> <u>Spacing</u>
15mm	2.0m
20mm	2.5m
25mm	2.5m
32mm	3.0m
40mm	3.0m
50mm	3.0m
65mm	3.5m
80mm	3.5m
100mm	4.0m

Each support shall take its due proportion of the weight of the pipe and shall allow free movement for expansion and contraction.

The support spacing for vertical runs shall not exceed one and a half times the distances given for the horizontal runs.

Sleeves shall be provided where pipes pass through walls and solid floors to allow movement of the pipes without damage to the structure. The overall length of the sleeve shall be such that it projects at least 2mm beyond the finished thickness of the wall or partition.

Sleeves passing through the structure shall be of mild steel. Elsewhere they shall be of PVC. The sleeves shall have 5-15mm clearance all-round the pipe, or for insulated pipework, all round the insulation. The sleeves shall be packed with slag wool or similar.

Unless anything else is stated in the specification, the tenderer must include in his tender for all protective and finish painting of the works including colour coding of special requirements, if any, are specified in the text of the particular specification. The painting shall be carried out by skilled painters.

1.1.6.1 Galvanised Mild steel Tubing

Galvanized mild steel tubing shall be in accordance with B.S 1387 with screwed and socketed joints.

Fittings for the same shall be galvanized malleable iron to B.S 143 & 1256 threads to BS 21.

Joints shall be made with fine hemp and an approved jointing compound or with Teflon sealing tape. Compound containing red lead must be used, unless otherwise specified.

All changes of direction shall be obtained by use of proper fittings. Formed bends shall not be accepted. Long screw connectors and flat-faced unions shall not be used, unless otherwise specified.

Where chased into walls or cast in concrete, galvanized mild steel tubing carrying hot water shall be wrapped with hair felt secured by copper wire.

The fixing of galvanized mild steel tubing shall be done using:

- a) Malleable iron "school board" pattern brackets for building in or screwing to structure or
- b) Malleable pipe rings, with either back plate, plugs or girder clips or
- c) Purpose made straps to Engineer's Approval.

1.1.6.2 Copper Tubing

Copper tubing shall be light gauge conforming to B.S. 2871 and the fittings shall be capillary or compression fittings to B.S. 864 of approved manufacture.

Joints on tubing up to and including 50 mm diameter, shall be compression or capillary joints or direct joints using zinc-free self-fluxing silver brazing alloys. Joints on tubing above 50 mm diameter shall be welded or blazed joints.

Copper tubing shall be jointed to steel cisterns by the use of copper-alloy connector having a shoulder to bear on the outside of the cistern and secured by a back nut inside. Washers shall be used both inside the cistern.

Where chased into walls or cast in concrete, copper tubing shall be wrapped with corrugated cardboard or hair felt secured by copper wire.

The fixing of copper tubing shall be done by using:-

a) Copper-alloy holderbats for building in, or screwing to structure.

Or

b) Strap clips of copper, copper-alloy or other suitable material.

Or

c) Gunmetal holderbats similar to "YORKSHIRE",

Iron or steel supports shall not be used for copper tubing.

All bends and sets shall be formed without diminishing the internal diameter in any part or causing fracture or weakness of the tube walls.

1.1.6.3 Valves, Cocks, Taps Etc.

Gate Valves

All gate valves up to and including 65mm nominal bore and above, other than those required for fitting to buried water mains shall be of bronze construction in accordance with the requirements of B.S. 5154. The pressure classification of all gate valves shall depend upon the pressure conditions pertaining to the site of the works.

The pressure classification of all gate valves shall depend upon the pressure conditions pertaining to the Site of Works.

Globe Valves

All globe valves up to and including 65 mm nominal bore shall be of bronze construction in accordance with B.S. 2060.

All globe valve 80 mm nominal bore and above shall be of cast iron construction in accordance with the requirements of B.S. 3961.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the Site of Works.

Check or Non-Return Valves

All check or non-return valves up to and including 65 mm nominal bore shall be of the swing check type of bronze construction in accordance with B.S. 1953.

All check or non-return valves 80 mm nominal bore and above shall be of the swing check type of cast iron construction in accordance with the requirements of B.S. 4090.

The pressure classification of all check or non-return valves shall depend on the pressure conditions pertaining to the Site of work

Ball Float Valves

All ball valves for use in connection with hot and cold water services shall be of the Portsmouth type in accordance with the requirements of B.S. 1212, constructed from bronze or other corrosion resistant materials. These valves fall into three pressure classification as follows:-

- (i) Low pressure – 3.588 bar maximum
- (ii) Medium pressure – 7. 725 bar maximum.
- (iii) High pressure – 12. 620 bar maximum.

The pressure Classification required for each ball valve will be designated in the description of its associated equipment.

Safety Valves

Safety valves for thermal storage water heaters shall comply with B.S. 759

Draw-Off Taps and Stop Valves (up to 50 mm nominal bore)

Draw-off taps and stop valves up to 50 m nominal bore, unless otherwise stated or specified, for attachment or connection to sanitary fittings shall be manufactured in accordance with the requirements of B.S. 1010.

Mixing valves for shower fittings and other appliances shall be manufactured in accordance with the requirements of B.S. 1415 from bronze or other corrosion resistant materials.

1.1.6.4 Thermal Insulation

Insulation shall be installed by tenderer specializing in this type of work.

All primary hot (flow and return pipes) and secondary hot water and circulation pipes shall be insulated. Thermal insulating material for hot water supply insulation shall conform to B.S. 1334 unless otherwise specified. Materials shall have fire retardant qualities.

Insulation shall be fiberglass, minimum density 64 kg/m³. Premolded fittings shall be used, or if unavailable, metered sections or built-up blanket insulation shall be used.

Insulation shall be fastened in concealed locations with aluminium bands or soft annealed wires and shall be fastened in exposed locations with aluminium bands, 30 cm. (12inches) o.c.

Each pipe item shall be insulated separately.

Insulation must be carried through or around hangers.

All insulating materials, however fixed, shall be in close contact with the surface to which it is applied and all joints shall be sealed after ensuring that edges or ends of any section built up close to one another. Edges or ends shall be cut or sharpened on site as necessary.

All surfaces to be insulated shall be cleaned carefully before fixing the insulating material. Whereby subject to outside weather or other potentially damp or wet conditions, the insulation shall be adequately protected against moisture pick-up with weatherproof jacketing. Elsewhere, the insulation shall be finished with open weave glass cloth and finish coats of adhesive or paint to approval.

Fixing of insulating material shall suit the progress of other installation works in the building.

All thermal insulating materials shall be delivered to the site in a dry condition and housed in a store until drawn upon for use. If nothing else is specified, the minimum thickness of insulating material for hot water pipes shall be 25 mm.

Equipment, such as tanks, shall be insulated with 50 mm fibre glass board and finished with open weave glass cloth and finish coats of adhesive or paint to approval.

1.1.7 Water Storage Tanks

1.1.7.1 Cold Water Storage Tanks

Where specified as galvanized mild steel, water storage tanks shall comply with B.S. 417. Galvanizing shall take place after manufacture.

Pressed steel sectional water storage tanks shall comply with B.S. 1564, and shall be similar in manufacture to “BRAITH-WAITE”.

Water storage tanks shall be mosquito proofed by means of well-fitting bolted cover bedded on a thick gasket of felt or bitumen.

Overflow pipes from tanks shall discharge into air or floor gullies where nearby positioned, with splay cut ends mosquito proofed by means of wire gauze tightly bound on with stout galvanized wire or soldered on.

1.1.7.2 Thermal Storage Water Heaters

The pressure and low pressure types domestic electric water heaters shall comply with B. S. 843; high pressure types shall be of a Standard not less than the appropriate B.S.

Domestic heaters shall, if nothing else is specified, be supplied with 50 mm thick fibre glass lagging.

Electric thermostatically controlled immersion heaters shall comply with B.S. 3456: Section 2:21 and C.P. 324.202.

Purpose made storage water heaters of the specified size shall comply with B.S.853 and shall be to the specified working and test pressure. The heaters shall be provided with all necessary bosses, coils, etc. and shall be hot dip galvanised after manufacture.

1.1.7.3 Pressure Vessels

Pressure vessels shall be manufactured in accordance with B.S. 1500 A for the specified pressure and be fitted with all necessary openings and connections.

1.1.8 Protection of metal surfaces

Machinery, equipment, etc. shall be tropicalized and with protective treatment fully suitable for application and in the prevailing climatic conditions.

Full details of tropicalization and comprehensive paint treatments, to a dry film thickness of nowhere less than 200 microns, shall be submitted for the approval of the Consultant.

All metalwork shall be protected by either:-

- (a) Hot dip galvanizing; where painted treatment shall be 50 microns epoxy primer or 5-10 microns wash-primer; 30 microns modified alkyd undercoat and 30 microns enamel finish,

- (b) Metallic lead epoxy primer, epoxy micaceous iron oxide, micaceous iron oxide modified alkyd undercoat and enamel finish, layers minimum 30 microns each.

Surfaces of metalwork shall be thoroughly brushed down with wire brushes to remove all scale, rust, etc., and structural steelwork shall be grit blasted before protective treatment.

All paint shall be applied fully in accordance with the manufacturer's instructions.

All water tanks inclusive covers, machinery casings, claddings and whosoever specified shall be protected by hot dip galvanizing.

Hot dip galvanized coatings shall be executed in accordance with British Standard BS 729.

The values for coating weight shall be as follows to B.S 729:-

5 mm thick and over	- 610 to 630 g/m (87 –90 um)
Under 5 mm but not less than 2 mm	- 460 to 490 g/m (66 – 70 um)
Under 2 mm but not less than 1 mm	- 335 to 350 g/m (48 – 50 um)
Grey and malleable iron castings	- 610 to 630 g/m (87 – 90 um)
Threaded work and other articles which are centrifuged	- 305 to 315 g/m (44 –45 um)

For conversion to coating thickness unit weight of zinc shall be assumed 7 g/cm^3 . The values stated shall be taken as minimum average values for a set of samples. Individual minimum values shall be introduced as the above mentioned minus 10%.

When galvanized coats are damaged, e.g. threaded pipe connections made on site, the exposed parts shall be repaired with same paints as for additional coating. Colour grey.

1.1.9 Instrumentation

Instrumentation shall be provided as indicated on the drawings and specified in the specifications.

Pressure gauges shall be installed on the pipe at both sides of pumps.

Pressure gauges shall be fitted with shutoff cock, read in the pressure range of system, minim 12 cm. (4 1/2 inch) dial, adjustable angle face, white face with black figures and pointer.

Thermometers shall be installed with separable sockets. Bronze sockets shall be used in nonferrous systems and stainless steel in ferrous systems.

Thermometers shall be mercury actuated, 12 cm (4 1/2 inch) dial, adjustable angle face with black figures and pointer. Where recording thermometers are required, they shall have chart 25 cm.(10 inches) in diameter, shall operate with one pen on 24 hour charts, with a range 10°C to 105°C (50°F to 220°F).

1.2 COMMISSIONING AND MAINTENANCE

1.2.1 Commissioning and Testing

The tenderer for solar heating system shall be responsible for testing and commissioning of the solar installation. The testing and commissioning shall be done in the presence of the Engineer. The tenderer shall be held responsible for any damage to the builders work, during the installation, initial system testing etc.

When installation is completed, an acceptance test shall be carried out on the tenderer's own expense.

All hot water pipes, including flow and return, solar absorbers, cylinders, cisterns, tanks, calorifiers, pumps, etc. shall be thoroughly sterilized and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilization procedure shall be carried out by the tenderer or specialists employed by the tenderer in accordance with the requirements of B.S. Code of Practice 310, Clause 409, to the approval of the Engineer.

Before handing over, the tenderer shall confirm that the installation has been examined, tested, is ready for use, that it will operate and can be maintained efficiently.

The whole of the solar heating installation shall be tested to the satisfaction of the Engineer and the Local Authority.

The tenderer shall provide all necessary testing apparatus and facilities for testing the installations and any defective work shall be replaced immediately and shall be the subject of re-testing until found satisfactory.

Where pipes are to be lagged, chased into walls or otherwise concealed, the work shall be tested prior to lagging, making good chases, etc.

The complete solar heating installations, including flow and return pipes shall, if nothing else is specified, be tested to a cold water pressure of not less than 1.5 times the working pressure, minimum 8 kg/cm².

The test pressure shall be applied by means of a manually operated test pump or, by a power-driven test pump. Pressure gauges shall be recalibrated before the test.

The test pressure shall be maintained by the pump for about one hour and a leakage as specified in C.P 310, Section 502 J shall be approved, but any visible individual leak shall be repaired.

Valves, cocks and taps shall be absolutely tight under the test pressure for the corresponding pipes

Upon completion of the work, including re-testing if necessary, the installations shall be thoroughly flushed out and water pipes refilled with clean water ready for use.

Any defects revealed by the tests shall be made good by the tenderer and the test repeated to the approval of the Engineer.

In all other respects, test shall comply with the requirements of B.S. Code of Practice 304.

Following satisfactory pressure tests on the pipework system, operational tests shall be carried out in accordance with the relevant B.S. Codes of practice on the systems as a whole to establish that special valves, gauges, controls, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.

1.2.2 Spare Parts

The tenderer shall submit with the tender a guarantee that he will hold a sufficient number of spare parts for the maintenance of the equipment.

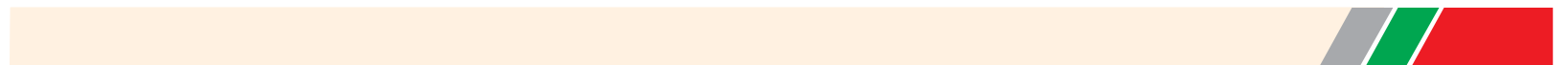
If specific requirements for supply of spare parts are specified in the bill of quantities or schedule of prices, these spare parts shall be supplied to the client/employer, when the installations are handed over.

The tenderer shall submit with his tender a priced list of any optional extras, which he recommends should be purchased for the plants and are not supplied as standard with the unit.

1.2.3 Defects Liability and Contractual Maintenance Period

The tenderer shall maintain the complete installation in the total defects liability period and shall be responsible for the initiation and execution of the clients/employer planned programme of maintenance during this period.

During this maintenance period the tenderer shall carry out all necessary adjustments and repairs, cleaning and lubricating, ect. A report of any work shall be submitted to the Client and incorporated in the maintenance records.



The tenderer shall be held responsible for and shall make good all defects in materials that appear during the maintenance period; he shall supply expendable items, such as gaskets, filters, indicator lamps, etc. The period of liability shall not end until all defects which appear during the maintenance period have been rectified.

The tenderer shall allow in his Contract price for this maintenance and inspection service and shall provide for all tools, instruments, plant and scaffolding, and the transportation thereof, as required for the correct and full execution of these obligations, and the provision, use or installation of all materials whether they are normal maintenance materials such as oils, greases, sandpaper, etc. and parts which are periodically renewed such as relay contacts or parts which are faulty for any reason whatsoever excepting always Acts of God such as a storm, tempest or flood, lightning and earthquake; civil revolt, acts of war and vandalism.

1.2.4 Maintenance Manual

Upon completion the tenderer shall furnish to the Client four copies of a manual size A4 of loose leaf type containing all the following items:-

- a. Description of equipment
- b. Full operation and maintenance instructions
- c. Valve operation
- d. Fault-finding chart
- e. Emergency procedure
- f. Maintenance and service periods
- g. Lubricating instruction
- h. Colour code legend
- i. Schedule of primary and secondary spares
- j. Record drawing – Folded to size A4.

The manual must be specially written and not standard manufacturers manual unless approved by the Engineer.

Tags giving instructions are not permitted. All instructions must be written into the manual with reference to the drawings.

All valves, terminals and controls on the plant shall be labelled to correspond with the maintenance and operation manuals.

1.2.5 Maintenance and Service After Expirations of the Contractual Maintenance Period

The tenderer shall if required, enter into a maintenance and service agreement with the employer for the complete installation, for a period of up to five years from the day of expiration of the contractual maintenance period.

The terms of any such agreement shall not be less beneficial to the Client, than the terms of agreement for other similar installations.

SOLAR WATER HEATING SYSTEM

2.0 TECHNICAL QUESTIONNAIRE

The following information shall be supplied by tenderer regarding the solar flat plate collectors proposed:

- 1. Manufacturer/Trade Mark

- 2. Construction Details of the Collector:

Aperture Dimensions & Area (m & m²)
- Gross Dimensions & Area (m & m²).....
- Dimensions and Area absorbing surface (m & m²)

- 3. Solar Panel Collector Casement material
- Thickness.....
- Corrosion Treatment.....

- 4. Glazing Material
- Thickness
- Physical Properties.....

- 5. Insulation Material
- Thickness (mm).....
- Thermal properties.....

- 6. Absorber Material Absorber plate.....
- Material for tubes for heat exchange



Selective Coating

Absorption Factor

Emissivity Factor.....

7. Solar Cylinder

Material.....

Thickness.....

Insulation Material.....

Thickness.....

Cladding Material.....

8. Normal Operating Temperature Range °C.....

9. Minimum and Maximum Transfer Fluid Flow

Rate kg/sec

.....

10. Collector’s Performance Efficiency:

11. WARRANTY:

The Sub-contractor shall state the equipment warranty period

.....

12, Any other alternative system. Give remarks on its difference to the one described. Additional paper to be attached if the text is much

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REPUBLIC OF KENYA

MINISTRY OF PUBLIC WORKS

GENERAL SPECIFICATIONS

FOR

ELECTRICAL INSTALLATION WORKS

ISSUED BY:

CHIEF ELECTRICAL & MECHANICAL ENGINEER (BS)

MINISTRY OF PUBLIC WORKS

P.O. BOX 41191,

NAIROBI.



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GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

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2.1 SHOP DRAWINGS

Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer. Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

2.2 RECORD DRAWINGS

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

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

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

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

2.3 REGULATIONS AND STANDARDS

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

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

2.4 SETTING OUT WORK

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

2.5 POSITIONS OF ELECTRICAL PLANT AND APPARATUS

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

2.6 MCB DISTRIBUTION PANELS AND CONSUMER UNITS

All cases of MCB Panels and consumer units shall be constructed in heavy gauge sheet with hinged covers.

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

The operating dolly shall be tripfree with a positive movement in both make and break position. Clear indication of the position of the handle shall be incorporated.

The tripping mechanism shall be on inverse characteristic to prevent tripping in temporary overloads and shall not be affected by normal variation in ambient temperature.

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

Insulated barriers shall be fitted between phases, and neutrals in all boards, and to shroud live parts.

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

2.7 FUSED SWITCHGEAR AND ISOLATORS

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

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

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

Isolators shall be load breaking/fault making isolators.

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

2.8 CONDUITS AND CONDUIT RUNS

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

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

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

The Sub-contractors attention is drawn to the necessity of keeping all conduits entirely separate from other piping services such as water and no circuit connections will be permitted between conduits and such pipes. All conduits systems shall be arranged wherever possible to be self-draining to switch boxes and conduit outlet points for fittings:

The systems, when installed and before wiring shall be kept plugged with well-fitting plugs and when short conduit pieces are used as plugs, they shall be doubled over and tied firmly together with steel wire; before wiring all conduit systems shall be carried out until the particular section of the conduit installation is complete in every respect.

The sets and bends in conduit runs are to be formed on site using appropriate size bending springs and all radii of bends must not be less than 2.5 times the outside diameter of the conduit. No solid or inspection bends, tees or elbows will be used.

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

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

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

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

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

2.13 CONDUIT BOXES AND ACCESSORIES

All conduit outlets and junction boxes are to be either malleable iron and of standard circular pattern of the appropriate type to suit saddles being used or super high impact PVC manufactured to KS 04 – 179 : 1983.

Small circular pattern boxes are to be used with conduits up to and including 25mm outside diameter. Rectangular pattern adaptable boxes are to be used for conduits of 32mm outside diameter and larger. For drawing in of cables in exposed runs of conduit, standard pattern through boxes are to be used:

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

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

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

2.14 LABELS

Labels fitted to switches and fuse boards;-

- (i) Shall be Ivory engraved black on white.
- (ii) Shall be secured by R.H brass screws of same manufacturing throughout.
- (iii) Shall be indicated on switches:-
 - a) Reference number of switch
 - b) Special current rating
 - c) Item of equipment controlled
- (iv) Shall indicate on MCB panels
 - a) Reference number
 - b) Type of board, i.e, lighting, sockets, etc.
 - c) Size of cable supplying panel
 - d) where to isolate feeder cable
- (v) Shall be generally not less than 75mm x 50mm.

2.15 EARTHING

The earthing of the installation shall comply with the following requirements:-

- (i) It shall be carried out in accordance with the appropriate sections of the current edition of the Regulations, for the Electrical Equipment of Buildings issued by Institute of Electrical Engineers of Great Britain.
- (ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross sectional area Copper tape shall be provided and all equipment including the lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.
- (iii) The earth tape in Sub-clause (ii) shall be connected by means of a copper tape or cable of suitable cross sectional area to an earth electrode which shall be a copper earth rod (see later sub-clause).
- (iv) All tapes to be soft high conductivity copper, untinned except where otherwise specified and where run underground on or through walls, floors, etc., it shall be served with corrosion resisting tape or coated with corrosion compound and braided
- (v) Where the earth electrode is located outside the building a removable test link shall be provided inside the building as near as possible to the point of entry to the tape, for isolating the earth electrode for testing purposes.
- (vi) Earthing of sub-main equipment shall be deemed to be satisfactory where the sub-main cables are M.I.C.S. or conduit with separate earth wire, and installation is carried out in accordance with the figures stated in the current edition of the I.E.E Regulations.
- (vii) Where an earth rod is specified (see Sub-clause (iii)) it shall be proprietary manufacture, solid hand drawn copper of 15mm diameter driven into the ground to a minimum depth of 3.6m. It shall be made up to 1.2m sections with internal screw and socket joints and fitted with hardened steel tip and driving cap.
- (viii) Earth plates will not be permitted
- (ix) Where an earth rod is used the earth resistance shall be tested in the manner described in the current edition of the IEE Regulations, by the Sub-Contractor in the presence of the Engineer and the Sub-Contractor shall be responsible for the supply of all test equipment.
- (x) Where copper tape is fixed to the building structure it shall be by means of purpose made non-ferrous saddles which space the conductor away from the structure a minimum distance of 20mm. Fixings, shall be made using purpose made plugs. No fixings requiring holes to be drilled through the tape will be accepted.

- (xi) Joints in copper tape shall be tinned before assembly riveted with a minimum of two copper rivets and seated solid.
- (xii) Where holes are drilled in the earth tape for connection to items of equipment the effective cross sectional area must not be less than required to comply with the IEE regulations.
- (xiii) Bolts, nuts and washers for any fixing to the earth tape must be of non-ferrous material.
- (xiv) Attention is drawn to the need for the earthing metal parts of lighting fittings and for bonding ball joint suspension in lighting fittings.

2.16 CABLES AND FLEXIBLE CORDS

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

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

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

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

2.17 ARMoured P.V.C. INSULATED AND SHEATHED CABLES:

Shall be 600/1000 volt grade manufactured to Ks 04-194:1988 and Ks 04-187/188 with copper stranded conductors.

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

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

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

2.18 CABLE SUPPORTS, MARKERS AND TILES

All PVC/SWA/PVC cables run inside the building shall be fixed in rising ducts or on ceilings by means of die cast cables hooks or clamps, or appropriate size to suit cables, fixed by studs and back nuts to their channel sections.

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

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

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

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

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

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

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

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

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

2.19 PVC INSULATED CABLES

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

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

2.20 HEAT RESISTING CABLES

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

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

2.21 FLEXIBLE CORDS

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

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

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

2.22 CABLE ENDS AND PHASE COLOURS

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

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

2.23 CABLE INSULATION COLOURS

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

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

<u>SYSTEM</u>	<u>INSULATION COLOUR</u>	<u>CABLE END MARKER</u>
Main and Sub-Main		

a) Phase	Red	Red
b) Neutral	Black	Black

1) Sub-Circuits

Single Phase

a) Phase	Red	Red
b) Neutral	Black	Black

2.24 SUB-CIRCUIT WIRING

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

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

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

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

- (ii) 2.5mm² for one 15Amp socket.

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

The wiring sizes for lighting circuits and sockets are shown on the drawings. In such cases, the sizes shown on the drawings shall prevail over the sizes specified.

Wiring sizes for other appliances shall be shown on the drawing or specified in later clauses of this specification.

2.25 SPACE FACTOR

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

2.26 INSULATION

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

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

2.27 LIGHTING SWITCHES

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

2.28 SOCKETS AND SWITCHED SOCKETS

These shall be flush pattern in steel/pvc box and shall be of the gangs and type specified in the drawings.

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

2.29 FUSED SPUR BOXES

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

2.30 COOKER OUTLETS

These shall be flush mounted with 13-A switched socket outlet and neon indicator Lamps.

The cooker control units shall be as manufactured by “M.K. Electrical Company Ltd”, or other approved equal KS 04 – 247: 1988

2.31 CONNECTORS

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

2.32 LAMPHOLDERS

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

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

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

2.33 LAMPS

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

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

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

2.34 LIGHTING FITTINGS AND STREET LIGHTING LANTERNS

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

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

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

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



lighting fittings. Minimum size of internal wiring shall be 20/0.20mm (23/0067). Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings. It is to be noted that some fittings are suspended as shown on the drawings.

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

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

2.35 POSITIONS OF POINTS AND SWITCHES

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

The Sub-contractor must consult with the Engineer in liaison with the Clerk of Works, or the General Foreman on site regarding the positions of all points before fixing any conduit etc. The Sub-Contractor shall be responsible for all alterations made necessary by the non-compliance with the clause.

2.36 STREET/SECURITY OUTDOOR LIGHTING COLUMNS:

The column shall be at a minimum of 225mm in the ground on 75mm thick concrete foundations and the pole upto 150mm shall be surrounded with concrete. The top bracket and plain section of the columns shall be common to and interchangeable with all brackets with maximum mismatching tolerance of 3mm between any pole and bracket. After manufacture and before erection the columns shall be treated with an approved mordant solution which shall be washed off and the whole allowed to dry. Thereafter, the columns shall be painted with one undercoat and two coats of gloss paint to an approved colour. All columns shall be complete with fused cut-outs.

2.37 TIMING CONTROL SWITCH

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

2.38 WIRING SYSTEM FOR STREETLIGHTING

Cables shall be as indicated on the drawings, and shall be laid in a cable trench 450mm deep along the road sides and 600mm deep across the roads and 900mm away from the road kerb or 1500mm away from the edges of the road. 'Loop-in' and 'Loop-out' arrangement shall be used at every pole. Wiring to the lanterns on each

pole shall be with 1.5mm² PVC twin insulated and sheathed cable with earth wire shall be laid at least 600mm below the finished road level on a compact bed of murram at least 50mm thick and covered with a concrete surrounded 150mm thick.

2.39 METAL CONTROL PILLAR

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

2.40 CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

Current operated earth leakage circuit breaker shall conform to B.S.S. 4293:68 rated at 240 volts D.P. 50 cycles A.C. Mains.

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

2.41 M.V. SWITCHBOARD AND SWITCHGEAR

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

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

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

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

All bus-bars and bus-bar connections shall consist of high conductivity copper and be provided in accordance with KS 04-226: 1985. The bus-bars shall be clearly marked with the appropriate phase and neutral colours

which should be red, yellow, blue for the phases and black for neutral. The bus-bars shall be so arranged in the switchboard that the extensions to the left and right may be made in the future with ease should the need arise.

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

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

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

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

2.42 STEEL CONDUITS AND STEEL TRUNKING

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

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

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

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

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

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

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

Where vertical sections of trunking are used which exceed 4.5m in length, staggered tie off points shall be provided at 4.5m intervals to support the weight of cables.

Unless otherwise stated, all trunking systems shall be painted as for conduit.

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

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

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

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

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

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

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

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

Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.

Where used in conjunction with mineral insulated copper sheathed cable, galvanised boxes shall be used and painted after erection.

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

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

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

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

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

2.43 TESTING ON SITE

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

- (a) Tests shall be carried out to prove that all single pole switches are installed in the 'live' conductor.
- (b) Tests shall be carried out to prove that all socket outlets and switched socket outlets are connected to the 'live' conductor in the terminal marked as such, and that each earth pin is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each 'ring' circuit.
- (c) Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation. Triplicate copies of the results of the above tests shall be provided

within 14 days of the witnessed tests and the Sub-contractor will be required to issue to the service engineer the requisite certificate upon completion as required by the regulations referred to above

- (d) Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation made apparently by such inspections or tests shall be rectified by the Sub-contractor at his own expense.
- (e) The Sub-contractor shall provide accurate instruments and apparatus and all labour required to carry out the above tests. The instruments and apparatus shall be made available to the services engineer to enable him to carry out such tests as he may require.

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

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

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

APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

The electrical sub-contractor shall comply with the following:-

1. Government Electrical Specifications No. 1 and No. 2.
2. All requirements of Kenya Power and Lighting Company Limited, and Communications Commission of Kenya (CCK).

SECTION E

SCHEDULE OF CONTRACT DRAWINGS

To be inspected during the site visit

SECTION F

PARTICULAR SPECIFICATIONS OF MATERIALS AND WORKS

PARTICULAR SPECIFICATIONS

1.0 SITE LOCATION

The site of the proposed works is at **(As stated in the Particular Preliminaries)**

2.0 SCOPE OF WORKS

The works to be carried out under this sub-contract comprise supply, installation, testing and commissioning of the following:-

Electrical Works

This shall include: -

- a. Electrical Installation Works.
- b. Fire Alarm System Works.
- c. Telephone points complete with CAT 5E cable wiring
- d. Computer points.

This shall be **as specified in the bills of quantities and to the approval of the Electrical Engineer.**

3.0 MATERIALS FOR THE WORKS

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

SECTION G

SCHEDULE OF UNIT RATES

- 1. The tenderer shall insert unit rates against the items in the following schedules and may add such other items as he considers appropriate.
- 2. The unit rates shall include for supply, transport, insurance, delivery to site, storage as necessary, assembling, cleaning, installing, connecting, profit and maintenance in defects liability and any other obligation under this contract.
- 3. The unit rates will be used to assess the value of additions or omissions arising from authorised variations to the contract works.
- 4. Where trade names or manufacturer’s catalogue numbers are mentioned in the specification, the reference is intended as a guide to the type of article or quality of material required. Alternative brands of **equal** and **approved** quality will be accepted.

SCHEDULE OF UNIT RATES

NO	DESCRIPTION	QTY	UNIT	UNIT RATE	
				KSHS	CTS



1) <u>Cables:</u>				
i) supply and install PVC /SWA/ PVC copper Cables:-				
a) 2 -core 6mm2	1	LM		
b) 2 -core 10mm2	1	LM		
c) 4 -core 10mm2	1	LM		
ii) supply and install PVC single core copper cables:				
a) 3 x 4.0 sq. mm	1	LM		
b) 3 x 6.0 sq. mm	1	LM		
c) 3 x 10 sq. mm	1	NO		
.				
2) 8 Way SPN Consumer Unit as Crabtree or equivalent.	1	NO		
3) 6 Way TPN distribution board as Crabtree or equivalent.	1	NO		
4) 9Way TPN Distribution Board as Crabtree or equivalent				
5) 12 Way TPN distribution board as Crabtree or equivalent.	1	NO		
6) 100 A SPN isolator as Crabtree.	1	NO		
7) 240V-24 hour Time switch	1	NO		
8) 100A Busbar Chamber	1	NO		
9) Security floodlight 500W(Metal Halogen)	1	NO		
10) 20ATPN Contactor	1	NO		
11) <u>FITTINGS:</u>				
i) 1 x 36w, 1200mm fluorescent fitting c/w decorative louvers as THORN or approved equivalent.	1	NO		
ii) 2 x 36w, 1200mm fluorescent fitting c/w opal diffuser as THORN CAT. No. PPD24 or approved equivalent.	1	NO		
iii) 2 x 58w, 1500mm fluorescent fitting c/w louvers as THORN or approved equivalent	1	NO		
iv) 1x58w, 1500mm fluorescent fitting c/w louvers as				

SECTION H

BILLS OF QUANTITIES

BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

Prices will be inserted against item of preliminaries in the sub-contractor's Bills of Quantities and specification. These Bills are designated as Bill 1 in this Section. Where the sub-contractor fails to insert his price in any item he shall be deemed to have made adequate provision for this on various items in the Bills of Quantities. The preliminaries form part of this contract and together with other Bills of Quantities covers for the costs involved in complying with all the requirements for the proper execution of the whole of the works in the contract.

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

a) Preliminaries – Bill 1

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

b) Installation Items and Other Bills - Bill 2

The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications.

The unit of measurements and observations are as per those described in clause 1.05 of the section C.

c) Summary

The summary contains tabulation of the separate parts of the Bills of Quantities carried forward with provisional sum, contingencies and any prime cost sums included. The sub-contractor shall insert his totals and enter his grand total tender sum in the space provided below the summary.

This grand total tender sum shall be entered in the Form of Tender provided elsewhere in this document

B) NOTES FOR BILLS OF QUANTITIES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.
2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes.

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

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part.
4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere to. Otherwise alternative brands of **equal** and **approved** quality will be accepted.

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

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender**.
6. Tenderers may enclose, together with their submitted tenders, **detailed manufacturer's brochures** detailing Technical Literature and specifications of the items they intend to offer.

The brochures shall be used in the tender evaluation to determine the first line aesthetics and quality of fittings offered.



1. **Statement of Compliance**

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

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

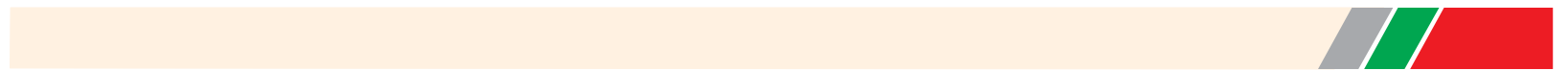
Signed:*for and on behalf of the Tenderer*

Date:

Official Rubber Stamp:

SCHEDULE 1.**SUB-CONTRACT PRELIMINARIES**

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	CTS
1	Discrepancies clause 1.02					
2	Conditions of sub-contract Agreement clause 1.03					
	Payments clause1.04					
3	Site location clause 1.06					
4	Scope of Contract Works clause 1.08					
5	Extent of the Contractor's Duties clause 1.09					
6	Firm price contract clause 1.12					
7	Variation clause 1.13					
8	Prime cost and provisional sum clause 3.14 (insert					
9	profit and attendance which is a percentage of expended PC or provisional sum.)					
10	Bond clause 1.15					
	Government Legislation and Regulations clause					
11	1.16					
	Import Duty and Value Added Tax clause 1.17(Note					
12	this clause applies for materials supplied only. VAT will also be paid by the sub-contractor as allowed in the summary page)					
13	Insurance company Fees clause 1.18					
14	Provision of services by the Main contractor clause 1.19					
15	Samples and Materials Generally clause 1.21					



	SUB-TOTAL CARRIED FORWARD TO PAGE					

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	CTS
16	Supplies clause 1.20					
17	Bills of Quantities clause 1.23					
18	Contractor’s Office in Kenya clause 1.24					
19	Builder’s Work clause 1.25					
20	Setting to work and Regulating system clause 1.29					
21	Identification of plant components clause 1.30					
22	Working Drawings clause 1.32					
23	Record Drawings(As Installed) and Instructions clause 1.33					
24	Maintenance Manual clause 1.34					
25	Hand over clause 1.35					
26	Painting clause 1.36					
27	Testing and Inspection – manufactured plant clause 1.38					
28	Testing and Inspection – Installation clause 1.39					
29	Storage of Materials clause 1.41					
30	Initial Maintenance clause 1.42					
31	Attendance Upon Tradesmen, etc. (Insert percentage only) clause 1.58					
	SUB-TOTAL CARRIED FORWARD TO PAGE					



ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS	CTS
31	Local and other Authorities notices and fees clause 1.60					
32	Temporary Works clause 1.63					
33	Patent Rights clause 1.64					
34	Mobilization and Demobilization Clause 1.65					
35	Extended Preliminaries Clause 1.66 (see Appendix -clause 1.70)					
36	Supervision by Engineer and Site Meetings Clause 1.67					
37	Allow for profit and Attendance for item 36 above.					
38	Amendment to Scope of Sub-contract Works Clause 1.68					
39	Contractor obligation and Employers Obligation clause 1.69.					
40	Any other preliminaries;					
	-total above					
	-total brought forward from page					
	-total brought forward from page					
	Sub-total For Bill No. 1- PRELIMINARIES- CARRIED FORWARD TO PRICE SUMMARY PAGE					

SECTION I

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

TECHNICAL SCHEDULE

The technical schedule shall be submitted by tenderers to facilitate and enable the Project Manager to evaluate the tenders, especially where the tenderer intends to supply or has based his tender sum on equipment which differs in manufacture, type or performance from the specifications indicated by the Project Manager.

Any tender without this shall be disqualified.

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED**(To be completed by Tenderer)**

ITEM	DESCRIPTION	TYPE/MAKE	COUNTRY OF ORIGIN
1.	Lighting switches		
2.	Moulded Socket outlet Plates		
3.	Lighting fittings; (i) 4 x 18 w, 600mmx600mm, fluorescent fitting. (ii) 16W, 2D ceiling luminaire. (iii) Eye ball down lighters. (iv) Bulkhead fitting		
4.	Consumer Unit.		
5.	Telephone plates.		
6.	Computer plates.		
7.	4 Pair Cat 6E cable.		
8.	Trunking		
9.	MCBs		
10.	Fire alarm panel		
11.	Smoke Detectors.		
12.	Sounders.		
13.			
14.	‘BREAK GLASS’ unit		
15.	Copper tape		
16.	Copper rod		

17.	Test clamp Earth rod		
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PRELIMINARIES

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	PARTICULAR PRELIMINARIES				
	PRICING ITEMS OF PRELIMINARIES Prices SHALL BE INSERTED against items of preliminaries in the tenderers priced Bills of Quantities. Please note that failure to price any item of general particular preliminaries will be construed to mean that the tenderer wishes to provide for that item free of charge.				
B	VALUE ADDED TAX The contractor shall allow for addition of 16% Value Added Tax (VAT) at the grand Summary page of these Bills of Quantities. Please note that from every Interim and the Final payment, 16% VAT shall be deducted and paid directly to the Commissioner of Value Added Tax. (VAT).				
	PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	FIRM PRICE CONTRACT 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.				
B	SCOPE OF CONTRACT The works to be carried out under the contract comprise CONSTRUCTION OF " HOT WATER TREATMENT PACK HOUSE AT THE NAIROBI HORTICULTURAL CENTRE"; WITH ALL ASSOCIATED ELECTRICAL, MECHANICAL AND CIVIL WORKS.				
C	DESCRIPTION OF THE WORKS Site clearing, setting out, construction and completion of CONSTRUCTION WORKS				
D	FLOOR AREA The total gross approximate floor area is The total gross floor area is given without warranty but for guidance only.				
E	MEASUREMENTS In the event of any discrepancies between the Bills of Quantities and the Actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract document shall immediately be referred to the Project Manager. For purposes of this tender, all the works have been measured provisionally and are subject to				

	re – measurement at execution.				
	PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	LOCATION OF SITE The site for works is located within: AFA –HCD Nairobi Horticultural Centre, JKIA NAIROBI The tenderer shall be deemed to have visited the site and familiarized himself with all site conditions prior to submission of tenders.				
B	EXISTING BUILDING SERVICES Special precautions shall be required throughout the contract period to avoid damages to the existing cables, drains and other services. The Contractor shall allow for making good any damage arising from the actions during execution of this contract at his own expense.				
C	GENERAL The Contractor is referred to the General Specifications for Building Works 1976 Edition pages B1 – B2 inclusive and must allow for all costs in complying with these clauses.				
	PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	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 Construction progress in relation to the progress chart and should it be found necessary, the PROJECT MANAGER shall inform the Contractor in writing that the 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.				
B	WORKING CONDITIONS The Contractor shall allow in his rates for any interference he may encounter in the course of execution of the works for the client may in some cases ask the Contractor not to proceed with the works until some activities within the site are completed.				
C	SIGN BOARD Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away a signboard as designed, specified and approved by the Project manager.				
D	LABOUR CAMPS The Contractor shall not be allowed to house on site. Allow for transporting workers to and from				

	the site during the tenure of the contract.				
	PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	MATERIALS FROM DEMOLITIONS Any materials arising from demolitions and not re-used shall become the property of the government. The Contractor shall allow in his rates the cost of assembling and keeping them in the Authority premises.				
B	PRICING RATES The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing all to comply with the said Conditions of Contract.				
C	TRANSPORT FOR THE PROJECT TEAM The Contractor shall provide transport during site trips only a 4-wheel drive vehicle of approved make and model to comfortably sit seven (7) persons, including maintaining licenses and insurances and provision of a competent driver, all to the satisfaction of the project manager. The vehicle shall be provided specifically for and during site visits by the Ministry of Public Works project technical team. The vehicle shall be in perfect condition for the duration of the trips to and from Ministry of Public Works, Murang'a County to the Site including local running. The driver shall be at the sole discretion of the Project Manager for the site visit day and for the entire duration of the trip until released by him/her. Reimbursement to the contractor for providing the transport services will be based per round trip (to				

	the site and back) during the currency of the contract at the rates quoted below. Allow for providing a vehicle as above described including maintaining licenses and comprehensive insurances (NB: This is not a requirement for a Purchase of a Project Vehicle) 12 No. round trips x Kshs.				
	PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	PROJECT MANAGEMENT COSTS Allow a sum of (Kshs. 500,000.00) only for Clerk of Works and Supervision				
B	Include a percentage for the contractor's Administration and profit for the above.....%				
	PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	PARTICULARS INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT 1. Period of Final Measurements (3 months from practical completion)				

2. Defects Liability Period (6 months from practical completion)				
3. Date for Possession (To be agreed with Project Manager)				
4. Date for Completion (26 Weeks after Commencement)				
5. Liquidated and Ascertained Damages (At the rate of Kshs. 50,000/= per week or part thereof)				
6. Period of Issuing Interim Certificates (Monthly)				
7. Period of Honouring Certificates (Thirty (30) Days)				
8. Percentage Certified value retained (10%)				
9. Limit of Retention Fund (10 % of Contract Sum)				
10. Bonds (From PPOA Approved Institutions ONLY)				
PARTICULAR PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
	PARTICULAR PRELIMINARIES <u>COLLECTION</u> Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No.				
	PARTICULAR PRELIMINARIES CARRIED TO SUMMARY				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	GENERAL PRELIMINARIES				
	PRICING OF ITEMS PRELIMINARIES AND PREAMBLES Prices will be inserted against items of preliminaries in the Contractor's priced Bill of Quantities and Specifications. The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities and Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract.				
B	ABBREVIATIONS				
	Throughout these Bills, units of measurement and terms are abbreviated and shall be 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 - 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. P.M. - shall mean Project Manager				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	The Employer is: AGRICULTURE AND FOOD AUTHORITY				
B	PROJECT MANAGER The term “P.M” whenever used in these Bills of Quantities shall be deemed to imply the Project manager as described in Conditions of Contract or such person or persons as may be duly authorized to represent him on behalf of the Government.				
C	ARCHITECT The term “Architect” shall be deemed to mean “The P.M” as defined above whose address unless otherwise notified is Dept. of Public Works, P. O. Box 133 Murang’a.				
D	QUANTITY SURVEYOR The term “Quantity Surveyor” shall be deemed to mean “The P.M” as described above whose address unless otherwise stated notified is Dept. of Public Works, P. O. Box 133 Murang’a.				
E	ELECTRICAL ENGINEER The term “Electrical Engineer” shall be deemed to mean “The P.M” as defined above whose address unless otherwise notified is Dept. of Public Works, P. O. Box 133 Murang’a.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	MECHANICAL ENGINEER The term “Mechanical Engineer” shall be deemed to mean “The P.M” as defined above whose address unless otherwise notified is Dept. of Public Works, P. O. Box 133 Murang’a.				
B	STRUCTURAL ENGINEER The term “Structural Engineer” shall be deemed to mean “The P.M” as defined above whose address unless otherwise notified is Dept. of Public Works, P. O. Box 133 Murang’a.				
C	FORM OF CONTRACT The form of Contract shall be as stipulated in the Republic of Kenya’s Standard tender Document for Procurement of Building Works included herein. The Conditions of contract are also included herein.				
D	Conditions of Contract These are as numbered as set out in these tender documents. Particulars of insertions to be made in the Appendix to the Contract Agreement will be found in the particular preliminaries part of these Bills of Quantities.				
E	BOND THE Contractor shall find and submit on the Form of tender and approved bank and who will be willing to be bound the Government in an amount equal to Five per cent (5%) of the Contract amount for the due performances of the Contract up to the date of completion as certified by PROJECT MANAGER and who will when and if called upon, sign a Bond to that effect on the relevant standard form included herein. (Without				

	the addition of any limitations) on the same day as the Contract Agreement is signed, by the Government, the Contractor shall furnish within seven (7) days another surety to the approval of the Government.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	PLANT, TOOLS AND VEHICLES Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub-Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.				
B	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.				
C	MATERIALS AND WORKMANSHIP All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are onsite when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.				
D	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 VAT				



E	all at the Contractors own cost and expense, to the satisfaction of the PROJECT MANAGER. STORAGE OF MATERIALS The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the PROJECT MANAGER Nominated Sub-Contractors are to be made liable for the cost of any storage accommodation provided especially for their use.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	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 Roads, Housing and Public 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-contractor's work.				
B	GOVERNMENT ACTS REGARDING WORK PERMIT ETC Allow for complying with all government Acts, Orders and regulations in connection with the employment labour and other matters related to the execution of the works. In particular, the Contractor's attention is drawn to the provisions of the factory Act 1950 and his tender must include for all costs arising or resulting from				



	compliance with any Act, Order or Regulation relating to Insurances, Pensions and Holidays for work people or so the safety, health and welfare of the work people. 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 organization 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.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	SECURITY OF WORKS, ETC The Contractor shall be entirely responsible for the security of all the works stores materials plant, personnel, etc both his own and sub-contractor's 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.				
B	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.				
C	EXISTING PROPERTY The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services he will be held responsible for and shall make good all such damage arising from the execution of the contract at his expense to the satisfaction of the project manager.				
D	VISIT SITE AND EXAMINE DRAWINGS⁸ 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				

E	tender. No claim arising from his failure to comply with this recommendation will be considered. ACCESS TO SITE AND TEMPORARY ROADS Means of access to the site shall be agreed with the Project manager prior commencement of the work and Contractor must allow for building any necessary temporary access roads (approximately 70 metres long) for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the site. Upon completion of the works, the Contractor shall remove such temporary access roads, temporary culverts, bridges, etc and make good and reinstate all works and surfaces disturbed to the satisfaction of the Project manager. The Contractor should also allow for relocating existing fence (approximately 30 metres long).				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	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.				
B	OFFICE ETC FOR THE PROJECT MANAGER The Contractor shall provide, erect and maintain where directed on site and afterwards dismantle the site office of the type approved by the project manager, complete with furniture. He shall also provide a strong metal trunk complete with hasp and staple fastening and two keys. He shall provide, erect and maintain a lockup type water or bucket closet for the sole use of the PROJECT MANAGER including making temporary connections to the drain where applicable to the satisfaction of the government and medical officer of health and shall provide services of a cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surface. The office and closet shall be completed before the contractor is permitted to commence the works. The contractor shall make available on the site as and when required by the “PROJECT MANAGER” a modern and accurate level together with the leveling staff, ranging rods and 50 metre metallic or linen tape.				
C	WATER AND ELECTRICITY SUPPLY FOR THE WORKS				

D	The Contractor shall provide at his own risk and cost all necessary water, electric light and power required for use in the works. The Contractor must make his own arrangements for connection to the nearest suitable water main and for metering the water used. He must also provide temporary tanks and meters as required at his own cost and clear away when no longer required and make good on completion to the entire satisfaction of the Project manager. The Contractor shall pay all charges in connection herewith. No guarantee is given or implied that sufficient water will be available from mains and the Contractor must make his own arrangements for augmenting this supply at his own cost. Nominated sub-contractors are to be made liable for the cost of any water or electric current used and for any installation provided especially for their own use. SANITATION OF THE WORKS 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				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	SUPERVISION AND WORKING HOURS The works shall be executed under the direction and to the entire satisfaction in all respects of the Project manager who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor				

	and Sub-Contractors or other places where work is being prepared for the contract.				
B	PROVISIONAL SUMS The term “Provisional Sum” whenever used in these Bills of Quantities shall have the meaning stated in Section A7 (i) of the Standard method of Measurement mentioned in Condition No. 16 of the conditions of Contract. Such sums are net and no addition shall be made to them for profit.				
C	PRIME COST (OR P.C.) SUMS The term “Prime Cost” or “P.C. Sum” whenever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement mentioned in Condition No. 16 of the conditions of contract. Persons or firms nominated by the Project Manager to exercise work or to provide and fix materials or goods as stated in Condition No. 20 of the Conditions of Contract are described herein as Nominated Sub-Contractors. Persons of firms so nominated to supply goods or materials are described herein as Nominated Suppliers.				
D	PROGRESS CHART The Contractor shall provide within two weeks of Possession of site and in agreement with the Project Manager a progress Chart for the whole of the works including the works of Nominated Sub-Contractors; one copy to be handed to the Project manager and a further copy to be retained on site. Progress to be recorded and chart to be amended as necessary as the work proceeds.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	ADJUSTMENT OF P.C. SUMS In the final account all P.C. sums shall be deducted and the amount properly expended upon the Project manager's order in respect of each of them added to the Contract sum. The Contractor shall produce to the Project manager such quotations, invoice or bills, properly receipted as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C Sums shall amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them. Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-Contractor.				
B	ADJUSTMENT OF PROVISIONAL SUMS In the final account, all Provisional sums shall be deducted and the value of the work properly executed in respect of them upon the Project manager's order added to the Contract Sum. Such work shall be valued as described for variations in Conditions No. 13 of the Conditions of Contract, but should any part of the work be executed by a Nominated Sub-Contractor, the value of such work or articles for the work to be supplied by a Nominated Supplier, the value of such work or articles shall be treated as a P.C Sum and profit				

C	and attendance comparable to that contained in the priced Bills of Quantities for similar items added. NOMINATED SUB-CONTRACTORS When any work is ordered by the Project manager to be executed by nominated sub-contractors, the Contractor shall enter into sub-contracts as described in Condition No. 8 of the Conditions of Contract and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described, the Contractor is to provide for such sub-contractors any or all of the facilities described in these preliminaries. The Contractor should price for these with the nominated sub-contract Contractors work concerned in the P.C. Sums under the description “add for Attendance”.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	DIRECT CONTRACTS Notwithstanding the foregoing conditions, the Government reserves the right to place a “Direct Contract” for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In any such instances, profit relative to the P.C. Sum the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.				
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 fro 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 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				

D	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 required premium renewals for the Project manager's inspection. 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 liable to adjustment under this Contract shall left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the Project Manager immediately the work is ready for measuring, the Contractor shall give notice to the Project manager. If the Contractor makes default in these respects, he shall if the Project manager so directs, uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
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 prices 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	PROTECTING 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.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	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 paint, scaffolding and unused materials at completion.				
B	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.				
C	FIRM PRICE CONTRACT Unless otherwise specifically stated in the 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.				
D	GENERAL SPECIFICATION For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works and Housing general Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in				

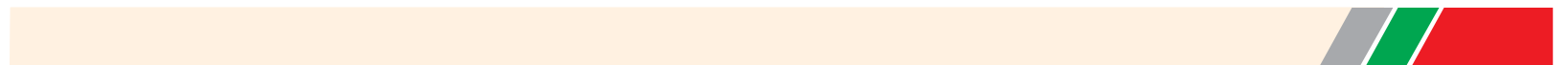
E	these Bills of Quantities. TRAINING LEVY The Contractor's attention is drawn to the legal notice which requires payment by the Contractor of a Training Levy at the rate of ¼ % of the Contract Sum on all contracts of more than Kshs. 1,000,000.00 in value.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
A	MATERIALS ON SITE All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the Project manager. This includes the materials of the main Contractor, Nominated Sub-Contractor and Nominated Suppliers.				
B	HOARDING The Contractor shall enclose the site or part of the works under construction with a hoarding 2400 mm high consisting of gauge 30 iron sheets on 100 x 50 mm cypress timber posts firmly secured at 1800 mm centres with two 75 x 50 mm timber rails required with 2 No. vehicular gates and 1 No pedestrian gate. The Contractor is in addition required to take all precautions necessary for the safe custody of the works, materials, paint, public and employer's property on the site.				
C	CONTRACTORS SUPERINTENDENCE / SITE AGENT The Contractor shall constantly keep on the works a literate English Speaking Agent or representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such agent or representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.				

D	COPYRIGHT The Copyright of these documents is vested in Chief Quantity Surveyor, Ministry of Public Works. No part of this document may be reproduced in any form or by any means without their prior permission.				
	GENERAL PRELIMINARIES CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
	GENERAL PRELIMINARIES <u>COLLECTION</u> Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No. Total Brought Forward from Page No.				
	GENERAL PRELIMINARIES CARRIED TO SUMMARY				

ITEM	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
	<u>SUMMARY OF PRELIMINARIES</u> PARTICULAR PRELIMINARIES GENERAL PRELIMINARIES				
	PARTICULAR & GENERAL PRELIMINARIES CARRIED TO GRAND SUMMARY				



PART III - THE CONDITIONS OF CONTRACT AND CONTRACT FORMS

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)

[Name of Procuring Entity] [Name of
Contract] [Project Manager's Name
and Address] **General Conditions of**

Contract

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.

“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 Project Manager.

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

“Particular Conditions of Contract” means the pages completed by the Procuring Entity entitled Particular Conditions of Contract which constitute Part A of the Particular Conditions.

“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.

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

“Contractor's Personnel” means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labor 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.

“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.

“Day works” means Work inputs subject to payment on a time basis for labor and the associated materials and plant.

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

“Defects Liability Period” means the period named in the Particular 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.

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

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

“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.

“Procuring Entity” means the Procuring Entity named as Procuring Entity in the Particular Conditions of Contract.

“Procuring Entity's Personnel” means the Project Manager, the assistants and all other staff, labor and other employees of the Project Manager and of the Procuring Entity; and any other personnel notified to the Contractor, by the Procuring Entity or the Project Manager, as Procuring Entity's Personnel.

“Procuring Entity's Equipment” means the apparatus, machinery and vehicles (if any) made available by the Procuring Entity for the use of the Contractor 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.

“Project Manager” means the person appointed by the Procuring Entity to act as the Project Manager for the purposes of the Contract and named in the Particular Conditions of Contract, or other person appointed from time to time by the Procuring Entity and notified to the Contractor

“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 Clause 19 [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 (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.

“Letter of Acceptance” means the letter of formal acceptance, signed by the 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.

“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 Security” means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security]. **“Performance Certificate”** means the certificate issued under Sub-Clause 11.9 [Performance Certificate]. **“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.

“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].

“Project Manager” 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 Project Manager) who is responsible for supervising the execution of the Works and administering the Contract and shall be an “Architect” or a “Quantity Surveyor” registered under the Architects and Quantity Surveyors Act Cap 525 or an “Project Manager” registered under Project Managers Registration Act Cap 530.

“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 Particular Conditions of Contract as a Section (if any)

“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.

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

“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.

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

“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).

“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.

“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 on 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 maybe) are taken over by the Procuring Entity.

“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.

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

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

“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 construct, install, and turnover to the Procuring Entity, 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
- e) The marginal words and other headings shall not be taken in to consideration in the interpretation of these Conditions.

1.3 Communications

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 Particular Conditions of Contract; and
- b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Particular 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.

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 Project Manager, a copy shall be sent to the Project Manager 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

1.5.1 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 Form of Tender,
- d) The Particular Conditions–Part A,
- e) The Particular Conditions–Part B
- f) These General Conditions of Contract
- g) The Specifications
- 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 Project Manager shall issue any necessary clarification or instruction.

- 1.5.1 Prior to commencing construction works, the Contractor shall prepare and submit to the Procuring Entity for approval drawings and specifications (including Bills of Quantities, (if need be) which will guide on the contract works to be carried out The Specifications shall be prepared taking the following Notes for preparing Specifications.

Specifications

1. Specifications must be drafted to present a clear and precise statement of the required standards of materials, and workmanship to the requirements of the Procuring Entity. 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.
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 Contractor 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 contractor has priced the item as described in his design included with the contract documents.

1.6 Contract Agreement

The Parties shall enter into a Contract Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless the Particular Conditions establish otherwise. The Contract Agreement shall be based upon the form annexed to the Particular 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

Neither Party shall assign the whole or any part of the Contractor any benefit or interest in or under the Contract. However, either Party:

- a) May as sign the whole or any part with the prior agreement of the other Party, at the sole discretion of such other Party, and
- b) may, as security in favor of a bank or financial institution, assign its right to any 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 Project Manager 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 become saw are 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 Delayed Instructions

- 1.9.1 The Contractor shall give notice to the Project Manager whenever the Works are likely to be delayed or disrupted if any necessary instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary 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 Project Manager to issue the notified 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 Project Manager 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.
- 1.9.3 After receiving this further notice, the Project Manager 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 Project Manager'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.

1.10 Procuring Entity's Use of Contractor's Documents

- 1.10.1 As 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

1.11.1 As 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 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

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

- 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 ineligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

2 THE PROCURING ENTITY

2.1 Right of Access to the Site

- 2.2 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 **Particular 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.
- 2.3 If no such time is stated in the Particular 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].
- 2.4 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 Project Manager 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.
- 2.5 After receiving this notice, the Project Manager shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.
- 2.6 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

2.3.1 The Procuring Entity shall be responsible for ensuring that the Procuring Entity's Personnel and the Procuring Entity's other contractors on 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 submit, before the Commencement Date and thereafter within 28 days after receiving any request from the Contractor, reasonable evidence that financial arrangements have been made and are being maintained which will enable the Procuring Entity to pay the Contract Price punctually (as estimated at that time) in accordance with Clause 14 [Contract Price and Payment]. Before the Procuring Entity makes any material change to his financial arrangements, the Procuring Entity shall give notice to the Contractor with detailed particulars.

2.5 Procuring Entity's Claims

2.5.1 If the Procuring Entity considers himself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Procuring Entity or the Project Manager 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.

2.5.2 The notice shall be given as soon as practicable and no longer than 28 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.

2.5.3 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 himself to be entitled in connection with the Contract. The Project Manager 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].

2.5.4 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.

3. The Project Manager

3.1 Project Manager's Duties and Authority

3.1.1 The Procuring Entity shall appoint the Project Manager who shall carry out the duties assigned to him in the Contract. The Project Manager's staff shall include suitably qualified Assistants and other professionals who are competent to carry out these duties. The Project Manager's Name and Address shall be provided in the **Particular Conditions of Contract**.

3.1.2 The Project Manager shall have no authority to amend the Contract.

3.1.3 The Project Manager may exercise the authority attributable to the Project Manager as specified in or necessarily to be implied from the Contract. If the Project Manager is required to obtain the approval of the Procuring Entity before exercising a specified authority, the requirements shall be as stated in the Particular Conditions. The Procuring Entity shall promptly inform the Contractor of any change to the authority attributed to the Project Manager.

3.1.4 However, whenever the Project Manager exercises a specified authority for which the Procuring Entity's approval is required, then (for the purposes of the Contract) the Procuring Entity shall be deemed to have given approval.

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 Project Manager shall be deemed to act for the Procuring Entity;
- b) The Project Manager 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 Project Manager (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 Project Manager in response to a Contractor's request except as otherwise expressly specified shall be notified in writing to the Contractor within 28 days of receipt.

3.1.6 The following provisions shall apply:

The Project Manager shall obtain the specific approval of the Procuring Entity before acting 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 Project Manager, or
 - ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the **Particular 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.
 - a) Sub-Clause 13.4: Specifying the amount payable in each of the applicable currencies.

3.1.7 Notwithstanding the obligation, set out above, to obtain approval, if, in the opinion of the Project Manager, 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 Project Manager, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Procuring Entity, with any such instruction of the Project Manager. The Project Manager 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 Project Manager

3.2.1 The Project Manager 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 Project Manager, 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 Project Manager shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

3.3.2 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 Project Manager. However:

- b) Any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Project Manager to reject the work, Plant or Materials;
- c) If the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Project Manager, who shall promptly confirm, reverse or vary the determination or instruction.

3.3 Instructions of the Project Manager

- 3.3.1 The Project Manager 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 Project Manager, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.
- 3.3.2 The Contractor shall comply with the instructions given by the Project Manager or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Project Manager or a delegated assistant:
- d) Gives an oral instruction,
 - e) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and
 - f) 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 Project Manager or delegated assistant (as the case may be).

3.4 Replacement of the Project Manager

If the Procuring Entity intends to replace the Project Manager, the Procuring Entity shall, 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 replacement Project Manager. If the Contractor considers the intended replacement Project Manager to be unsuitable, he has the right to raise objection against him by notice to the Procuring Entity, with supporting particulars, and the Procuring Entity shall give full and fair consideration to this objection.

3.5 Determinations

- 3.5.1 Whenever these Conditions provide that the Project Manager shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the Project Manager shall consult with each Party in an endeavor to reach an agreement. If agreement is not achieved, the Project Manager shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.
- 3.5.2 The Project Manager shall give notice to both Parties of each agreement or determination, with supporting particulars, within 28 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 The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Project Manager's instructions, and shall remedy any defects in the Works.
- 4.1.1 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.
- 4.1.2 All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country.
- 4.1.3 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.

- 4.1.4 The Contractor shall, whenever required by the Project Manager, 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 Project Manager.
- 4.1.5 If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Particular Conditions:
- a) The Contractor shall submit to the Project Manager 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 Project Manager 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 Project Manager 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 Project Manager.

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 **Particular Conditions of Contract** and denominated in the currency (I e s) of the Contract or in a freely convertible currency acceptable to the Procuring Entity. If an amount is not stated in the Particular Conditions of Contract, this Sub-Clause shall not apply.
- 4.2.2 The Contractor shall deliver the Performance Security to the Procuring Entity within 28 days after receiving the Letter of Acceptance, and shall send a copy to the Project Manager. The Performance Security shall be issued by a reputable bank selected by the Contractor, and shall be in the form annexed to the Particular Conditions, as stipulated by the Procuring Entity in the Particular 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 28 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 Project Manager 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 Project Manager's 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 **Particular 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 Project Manager for consent the name and particulars of the person the Contract or 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 Project Manager, revoke the appointment of the Contractor's Representative or appoint a replacement.
- 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 Project Manager's prior consent, and the Project Manager 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 Project Manager].
- 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 Project Manager 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-Clause 1.4 [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 Project Manager.

4.4 Subcontractors

- 4.4.1 The Contractor shall not subcontract the whole of the Works.
- 4.4.1 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 Particular Conditions:
- e) 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;
 - f) The prior consent of the Project Manager shall be obtained to other proposed Subcontractors;
 - g) the Contractor shall give the Project Manager not less than 28 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
 - h) 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 for 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

- 4.5.1 If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Project Manager, 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 Project Manager, allow appropriate opportunities for carrying out work to:
- i) The Procuring Entity's Personnel,
 - j) Any other contractors employed by the Procuring Entity, and
 - k) 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 Project Manager in the time and manner stated in the Specification.

4.7 Setting Out

- 4.7.1 The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract notified by the Project Manager. 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 Project Manager and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
- l) 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
 - m) payment of any such Cost-plus profit, which shall be included in the Contract Price.
- 4.7.4 After receiving this notice, the Project Manager 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

- 4.8.1 The Contractor shall:
- a) Comply with all applicable safety regulations,
 - b) Take care 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 Project Manager shall be titled to audit any aspect of the system.
- 4.9.2 Details of all procedures and compliance documents shall be submitted to the Project Manager for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Project Manager, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.
- 4.9.3 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.
- 4.10.1 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):
- n) The form and nature of the Site, including sub-surface conditions,
 - o) The hydrological and climatic conditions,
 - p) The extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
 - q) The Laws, procedures and labor practices of Kenya, and
 - r) 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:
- s) Have satisfied himself as to the correctness and sufficiency of the Accepted Contract Amount, and
 - t) 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 Project Manager as soon as practicable.
- 4.12.3 This notice shall describe the physical conditions, so that they can be inspected by the Project Manager, 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 Project Manager 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 Project Manager 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 Project Manager may also review whether other physical conditions in similar parts of the Works (if any) were more favorable than could reasonably have been foreseen when the Contractor submitted the Tender. If and to the extent that these more favorable conditions were encountered, the Project Manager 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 Project Manager 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 outside the Site which he may require for the purposes of the Works.

4.14 Avoidance of Interference

4.14.5 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.

4.14.6 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

4.15.5 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.

4.15.6 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 Particular Conditions:

- a) The Contractor shall give the Project Manager 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 Project Manager. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

4.18 Protection of the Environment

- 4.18.5 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.
- 4.18.6 The Contractor shall ensure that missions, surface discharges 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

- 4.19.5 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.
- 4.19.6 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.
- 4.19.7 The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Project Manager 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

- 4.20.5 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.
- 4.20.6 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 Project Manager 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.

4.20.7 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 Project Manager of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Procuring Entity shall immediately rectify the notified shortage, defect or default.

4.20.8 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 Particular Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Project Manager 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) comparisons of actual 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 Particular 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 Project Manager, 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 Project Manager 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.

4.23.2 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 Project Manager, 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 Project Manager and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

After receiving this further notice, the Project Manager 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 the Contract, “nominated Subcontractor” means a Subcontractor:

- a) Who is stated in the Contract as being a nominated Subcontractor, or
- b) whom the Project Manager, under Clause 13 [Variations and Adjustments], instructs the Contractor to employ 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 Project Manager 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 Project Manager 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 Project Manager 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 Project Manager, or
- b)
 - i) satisfies the Project Manager in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
 - ii) submits to the Project Manager 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 Labour

6.1 Engagement of Staff and Labour

6.1.1 Except as otherwise stated in the Specification, the Contractor shall decide for the engagement of all staff and labor, 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 labor with appropriate qualifications and experience from sources within Kenya.

6.2 Rates of Wages and Conditions of Labour

6.2.1 The Contractor shall pay rates of wages, and observe conditions of labor, 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 Entities 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 thereof 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 Labour Laws

6.4.1 The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

6.4.2 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 **Particular Conditions of Contract**, unless:

- a) Otherwise stated in the Contract,
- b) The Project Manager 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 Project Manager.

6.6 Facilities for Staff and Labour

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities 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 Project Manager, 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 Project Manager 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 as are specified in this Contract 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 superintendencies 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 countered 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 the respective trades or occupations. The Contractor's Key personnel shall be named in the **Particular Conditions of Contract**. The Project Manager 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 incompetently 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 Project Manager, 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 Project Manager, 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 may bring into Kenya any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence vis as and work permits. The Procuring Entity will, if requested by the Contractor, use his Lowest endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel.

6.12.2 The Contractor shall be responsible for the return of these 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, on site, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereof 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 Labour

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 Project Manager. 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 employment or retirement, and discipline.

7 Plant, Materials and Workmanship

7.1 Manner of Execution

The Contractor shall carry out the manufacture 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 workmanlike 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 Project Manager for consent prior to using the Materials in 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 Project Manager 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 Project Manager whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Project Manager shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Project Manager does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Project Manager, uncover the work and thereafter 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, other than the Tests after Completion (if any).

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, labor, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Project Manager, the time and place for the specified testing of any Plant, Materials and other parts of the Works.

7.4.3 The Project Manager 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 Project Manager shall give the Contractor not less than 24hours' notice of the Project Manager's intention to attend the tests. If the Project Manager does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Project Manager, and the tests shall then be deemed to have been made in the Project Manager's 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 Project Manager 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 Project Manager 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 Project Manager duly certified reports of the tests. When the specified tests have been passed, the Project Manager shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Project Manager 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 Project Manager 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 Project Manager 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 Project Manager 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, unforeseeable 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.

7.7 Ownership of Plant and Materials

7.7.1 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 Particular Conditions of Contract, the Commencement Date shall be the date at which the following precedent conditions have all been fulfilled and the Project Manager's 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. Delivery to the Contractor of reasonable evidence of the Procuring Entity's financial arrangements (under Sub-Clause 2.4 [Procuring Entity's Financial Arrangements]);
- c. Except if otherwise specified in the Particular 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
- d. 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 Project Manager's 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-Clause 16.2 [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 Tests on 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 Project Manager within 28 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 Project Manager, within 21 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 Project Manager of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to submit an estimate of the anticipated effect of the future event or circumstances, and/ or a proposal under Sub-Clause 13.3 [Variation Procedure].
- 8.3.4 If, at any time, the Project Manager gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Project Manager 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 himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Project Manager in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Project Manager 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 Project Manager 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 Project Manager 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 Project Manager 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 **Particular Conditions of Contract**, which shall be paid for every day 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 Particular 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 Project Manager may at any time 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 Project Manager 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 Project Manager's instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Project Manager 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 Project Manager shall proceed in accordance with Sub-Clause 3.5 [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 28 days, and
- b) the Contractor has marked the Plant and/or Materials as the Procuring Entity's property in accordance with the Project Manager's 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 Project Manager's permission to proceed. If the Project Manager does not give permission within 28 days after being requested to do so, the Contractor may, by giving notice to the Project Manager, 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 Project Manager 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 Project Manager 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 Project Manager 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 Project Manager shall instruct.

9.1.3 In considering the results of the Tests on Completion, the Project Manager 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 Project Manager.

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 Project Manager 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 Project Manager.

9.2.3 If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Tests at 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

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Project Manager 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 Project Manager shall be entitled to:

- a. Order further repetition of Tests on Completion under Sub-Clause 9.3;
- 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-Clause 11.4 [Failure to Remedy Defects]; or
- c. issue a Taking-Over Certificate, if the Procuring Entity so requests.

9.4.2 In the event of sub-paragraph (c), the Contractor shall proceed in accordance with all other obligations under the Contract, and the Contract Price shall be reduced by such amount as shall be appropriate to cover the reduced value to the Procuring Entity as a result of this failure. Unless the relevant reduction for this failure is stated (or its method of calculation is defined) in the Contract, the Procuring Entity may require the reduction to be (i) agreed by both Parties (in full satisfaction of this failure only) and paid before this Taking-Over Certificate is issued, or (ii) determined and paid under Sub-Clause 2.5 [Procuring Entity's Claims] and Sub-Clause 3.5 [Determinations].

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 Project Manager 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 Contractor may similarly apply for a Taking-Over Certificate for each Section.

10.1.3 The Project Manager shall, within 28 days after receiving the Contractor's application:

- a. Issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding 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 Project Manager fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 28 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 Project Manager 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 Project Manager 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 Project Manager shall issue a Taking-Over Certificate for this part.
- 10.2.3 After the Project Manager 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 Project Manager and (ii) be entitled subject to Sub-Clause 20.1[Contractor's Claims] to payment of any such Cost-plus profit, which shall be included in the Contract Price. After receiving this notice, the Project Manager shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this Cost and profit.
- 10.2.5 If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages thereafter 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 Project Manager 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 Project Manager 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 Project Manager 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 Project Manager 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.
- 10.3.4 After receiving this notice, the Project Manager 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

11.1.1 Completion of Outstanding Work and Remedying Defects

11.1.2 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 thereafter, 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 Project Manager, 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).

11.1.3 If a defect appears or damage occurs, the Contractor shall be notified accordingly, by (or on behalf of) the Procuring Entity.

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 (or on behalf of) the Procuring Entity, 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 [Cost of Remedying Defects], the Procuring Entity may (at his option):

- a. carry out the work himself 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 Project Manager to agree or determine a reasonable reduction in the Contract Price in

accordance with Sub-Clause3.5[Determinations]; or

- c. if the defector 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 defect or 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 defect or damage may affect the performance of the Works, the Project Manager may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 28 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-Clause11.2 [Cost of Remedying Defects], for the cost of the remedial work.

11.7 Right of Access

Until the Performance 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 Project Manager, search for the cause of any defect, under the direction of the Project Manager. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Project Manager in accordance with Sub-Clause3.5 [Determinations] and shall be included in the Contract Price.

11.9 Performance Certificate

- 11.9.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Project Manager has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.
- 11.9.2 The Project Manager shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter 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 Performance Certificate shall be issued to the Procuring Entity.
- 11.9.3 Only the Performance Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Performance 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 Performance 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 28 days after receipt by the Contractor of the Performance 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

- 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 and Evaluation

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 Project Manager requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:
- Promptly either attend or send another qualified representative to assist the Project Manager in making the measurement, and
 - Supply any particulars requested by the Project Manager.
- 12.1.3 If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of) the Project Manager 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 Project Manager. The Contractor shall, as and when requested, attend to examine and agree the records with the Project Manager, 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 with the records, and/or does not sign them as agreed, then the Contractor shall give notice to the Project Manager of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Project Manager 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 Project Manager 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 and not withstanding local practice:

- Measurement shall be made of the net actual quantity of each item of the Permanent Works, and
- 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 Project Manager shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the Contract Price 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, a new rate or price shall be appropriate for an item of work if:
- the measured quantity of the item is changed by more than 25% from the quantity of this item in the Bill of Quantities or another Schedule,
 - this change in quantity multiplied by such specified rate for this item exceeds 0.25% of the Accepted Contract Amount,
 - this change in quantity directly changes the Cost per unit quantity of this item by more than 1%, and

iv) this item is not specified in the Contract as a “fixed rate item”; or

b) the work is instructed under Clause13 [Variations and Adjustments],

ii) no rate or price is specified in the Contract for this item, and

iii) 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.

b) Each new rate or price shall be derived from any relevant rates or prices in the Contract, with reasonable adjustments to take account of the matters described in sub-paragraph (a) and/or (b), as applicable. If no rates or prices are relevant for the derivation of a new rate or price, it shall be derived from the reasonable Cost of executing the work, together with profit, taking account of any other relevant matters.

c) Until such time as an appropriate rate or price is agreed or determined, the Project Manager shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.4 Omissions

d) Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

i) 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;

ii) The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and

iii) This cost is not deemed to be included in the evaluation of any substituted work;

12.4.1 then the Contractor shall give notice to the Project Manager accordingly, with supporting particulars. Upon receiving this notice, the Project Manager shall proceed in accordance with Sub-Clause3.5 [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 Project Manager 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.

13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Project Manager 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 Project Manager 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, bore holes 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 Project Manager instructs or approves a Variation.

13.2 Value Project Managerring

13.2.1 The Contractor may, at any time, submit to the Project Manager a 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.

13.2.2 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 Project Manager, 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 Project Manager 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 be half (50%) of the difference between the following amounts:
 - a. such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and
 - b. the reduction (if any) in the value to the Procuring Entity of the varied works, taking account of any reductions in quality, anticipated life or operational efficiencies.

13.2.4 However, if amount (i) is less than amount (ii), there shall not be a fee.

13.3 Variation Procedure

13.3.1 If the Project Manager 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.

13.3.2 The Project Manager shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Project Managing] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.

13.3.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Project Manager to the Contractor, who shall acknowledge receipt.

13.3.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Project Manager instructs or approves otherwise in accordance with this Clause.

13.4 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.

13.5 Provisional Sums

13.5.1 Each Provisional Sum shall only be used, in whole or in part, in accordance with the Project Manager's 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 Project Manager shall have instructed. For each Provisional Sum, the Project Manager 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 Particular Conditions of Contract** shall be applied.

- 13.5.2 The Contractor shall, when required by the Project Manager, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.6 Day works

- 13.6.1 For work of a minor or incidental nature, the Project Manager may instruct that a Variation shall be executed on a day work basis. The work shall then be valued in accordance with the Day work Schedule included in the Contract, and the following procedure shall apply. If a Day work Schedule is not included in the Contract, this Sub-Clause shall not apply.
- 13.6.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Project Manager. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.
- 13.6.3 Except for any items for which the Day work Schedule specifies that payment is not due, the Contractor shall deliver each day to the Project Manager accurate statements in duplicate 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.
- 13.6.4 One copy of each statement will, if correct, or when agreed, be signed by the Project Manager and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Project Manager, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

13.7 Adjustments for Changes in Legislation

- 13.7.1 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.
- 13.7.2 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 Project Manager 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.
- 13.7.3 After receiving this notice, the Project Manager shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.
- 13.7.4 Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been considered in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been considered 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].

13.8 Adjustments for Changes in Cost

- 13.8.1 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.
- 13.8.2 If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labor, 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.

- 13.8.3 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

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:

$$P = A + B I_m/I_o$$

where:

P is

the adjustment factor for the portion of the Contract Price payable.

A and B are coefficients **specified in the SCC**, representing the non-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 I_o is the index prevailing 28 days before Tender 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 non-adjustable components. The sum of the adjustments for each currency are added to the Contract Price.

- 13.8.4 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 Project Manager. For this 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.
- 13.8.5 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.
- 13.8.6 Until such time as each current cost index is available, the Project Manager 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.
- 13.8.7 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices thereafter 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 favorable to the Procuring Entity.
- 13.8.8 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 inapplicable, as a result of Variations.

14 Contract Price and Payment

14.1 The Contract Price

14.1.1 Unless otherwise stated in the Particular Conditions:

- the Contract Price shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;
- 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];
- 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 Project Manager, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Project Manager may take account of the breakdown 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 be exempt from the payment of import duties and taxes upon importation.

14.2 Advance Payment

14.2.1 The Procuring Entity may make an advance payment, as an interest-free loan for mobilization and cash flow support, when the Contractor submits a guarantee in accordance with this Sub-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 **Particular 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 Particular Conditions of Contract, this Sub-Clause shall not apply.

14.2.3 The Project Manager 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-Clause14.3 [Application for Interim Payment Certificates]) and after the Procuring Entity receives (i) the Performance Security in accordance with Sub-Clause4.2 [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 institution selected by the Contractor and shall be in the form annexed to the Particular 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 28 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 **Particular Conditions of Contract**, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Project Manager in accordance with Sub-Clause14.6 [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 **Particular 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 Clause19 [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 15.5 [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 six copies to the Project Manager after the end of each month, in a form approved by the Project Manager, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [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 Particular 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 Particular 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 Contract or 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 The Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, 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 Project Manager 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 The Contract include a schedule of payments, attached to this contract as Document _____
- 14.4.3 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 Project Manager 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 a 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 Project Manager 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-Clause 14.2 [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 Project Manager's 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.

14.5.6 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 Project Manager shall, within 28 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 Project Manager fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Project Manager on the Statement if any.

14.6.2 However, prior to issuing the Taking-Over Certificate for the Works, the Project Manager 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 Particular Conditions of Contract**. In this event, the Project Manager 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 Project Manager, the value of this work or obligation may be withheld until the work or obligation has been performed.

14.6.4 The Project Manager 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 Project Manager's acceptance, approval, consent or satisfaction.

14.7 Payment

14.7.1 The Procuring Entity shall pay to the Contractor:

- a) The first instalment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 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 45 days after the Project Manager receives the Statement and supporting documents; and
- c) the amount certified in the Final Payment Certificate within 45 days after the Procuring Entity receives this 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 (for this 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 (interest) compounded 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 Unless otherwise stated in **the Particular Conditions**, these financing charges shall be calculated at the annual rate of three percentage points above the discount rate of the central bank in Kenya of the currency of payment, or if not available, the interbank offered rate, and shall be paid in such currency.
- 14.8.3 The Contractor shall be entitled to this payment without formal notice or certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

- 14.9.2 When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Project Manager 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 be half (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.
- 14.9.3 Promptly after the latest of the expiry dates of the Defects Notification Periods, the outstanding balance of the Retention Money shall be certified by the Project Manager 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 be half (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.
- 14.9.4 However, if any work remains to be executed under Clause 11 [Defects Liability], the Project Manager shall be entitled to withhold certification of the estimated cost of this work until it has been executed.
- 14.9.5 When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost].
- 14.9.6 Unless otherwise stated in the Particular 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 Project Manager, the Contractor shall be entitled to substitute a Retention Money Security guarantee, in the form annexed to the particular 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.
- 14.9.5 The Procuring Entity shall return the Retention Money Security guarantee to the Contractor within 14 days after receiving a copy of the Performance 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 Project Manager six 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 Project Manager shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

14.10 Application for Final Payment Certificate

- 14.10.1 Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Project Manager, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Project Manager:
- 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.
- 14.10.2 If the Project Manager disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Project Manager may reasonably require within 28 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 Project Manager the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".
- 14.10.3 However, if, following discussions between the Project Manager and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Project Manager 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 Project Manager) a Final Statement.

14.11 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 outstanding balance of this total, in which event the discharge shall be effective on such date.

14.12 Issue of Final Payment Certificate

- 14.12.1 Within 28 days 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 Project Manager 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.
- 14.12.2 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 Project Manager shall request the Contractor to do so. If the Contractor fails to apply within a period of 28 days, the Project Manager shall issue the Final Payment Certificate for such amount as she fairly determines to be due.

14.13 Cessation of Procuring Entity's Liability

- 14.13.1 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].
- 14.13.2 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.

14.14 Currencies of Payment

- 14.14.1 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 Particular 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.

14.13.1 Termination by Procuring Entity

14.14.1 Notice to Correct

If the Contractor fails to carry out any obligation under the Contract, the Project Manager may by notice require the Contractor to make good the failure and to remedy it within a specified reasonable time.

14.15 Termination by Procuring Entity

14.15.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor:

- 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 28 days after receiving it,
- d. subcontracts the major part or whole of the Works or assigns the Contract without the agreement with 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 inducement or 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 favor or disfavor 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 inducement or reward as is described in this sub-paragraph (f).
- g. However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination, or based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Appendix

- 14.15.2 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 subparagraph (e) or (f) or (g), the Procuring Entity may by notice terminate the Contract immediately.
- 14.15.3 The Procuring Entity's election to terminate the Contract shall not prejudice any other rights of the Procuring Entity, under the Contract or otherwise.
- 14.15.4 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 Project Manager. However, the Contractor shall use his Lowest 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.
- 14.15.5 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.
- 14.15.6 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.

14.16 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 Project Manager 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.

14.17 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.

14.18 Procuring Entity's Entitlement to Termination for Convenience

The Procuring Entity shall be entitled to terminate the Contract, at any time for the Procuring Entity's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 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 himself 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].

14.19 Fraud and Corruption

The Procuring Entity requires compliance with the Kenya Government's Anti-Corruption Laws and its prevailing sanctions.

14.20 Corrupt gifts and payments of commission

14.20.1 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 do or 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 in to 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.

15.7.1 Any breach of this Condition by the Contractor or by any one employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement Regulations issued under The Exchequer and Audit Act Cap412of the Laws of Kenya.

15 Suspension and Termination by Contractor

15.15 Contractor's Entitlement to Suspend Work

15.15.1 If the Project Manager fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or the Procuring Entity fails to comply with Sub-Clause 2.4 [Procuring Entity's Financial Arrangements] or Sub-Clause14.7[Payment], the Contractor may, after giving not less than 21days' 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.

15.15.2 The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause16.2 [Termination by Contractor].

15.15.3 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.

15.15.4 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 Project Manager and shall be entitled subject to Sub-Clause20.1[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.

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

15.16 Termination by Contractor

15.16.1 The Contractor shall be entitled to terminate the Contract if:

- a. the Contractor does not receive the reasonable evidence within 45 days after giving notice under Sub-Clause16.1 [Contractor's Entitlement to Suspend Work] in respect of a failure to comply with Sub-Clause 2.4 [Procuring Entity's Financial Arrangements],
- c. the Project Manager fails, within 45days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,
- d. the Contractor does not receive the amount due under an Interim Payment Certificate within 45days after the expiry of the time stated in Sub-Clause14.7[Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause2.5 [Procuring Entity's Claims]),
- e. 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,
- f. the Procuring Entity fails to comply with Sub-Clause 1.6 [Contract Agreement] or Sub-Clause 1.7 [Assignment],
- g. a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged

Suspension], or

- h. 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.
- i. The Contractor does not receive the Project Manager's 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].

15.16.2 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.

15.16.3 The Contractor's selection to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contract otherwise.

15.17 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 Project Manager 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.

15.18 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 whatsoever 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, willful act or 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, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, their respective agents, or any one 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, willful 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].

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, insofar 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 radio-activity, except as may be attributable to the Contractor's use of such explosives, radiation or radio-activity,
- d) pressure waves caused by aircraft or other aerial devices travelling 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 Project Manager and shall rectify this loss or damage to the extent required by the Project Manager.

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 Project Manager 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 (f) and (g) of Sub-Clause 17.3 [Procuring Entity's Risks], Cost plus profit shall be payable.

17.4.3 After receiving this further notice, the Project Manager 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” means an infringement (or alleged infringement) of any patent, registered design, copyright, trademark, tradename, trade secret or other intellectual or industrial property right relating to the Works; and “claim” means 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 28 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 against and 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.

17.6 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 indirect or 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 **Particular 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

- 17.7.5 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).
- 17.7.6 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 Project Manager.

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 Particular Conditions of Contract** (calculated from the Commencement Date), submit to the other Party:
- Evidence that the insurances described in this Clause have been effected, and
 - 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 Project Manager.
- 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 attempts 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 Contract, or fails to provide as is factory 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 Contract or 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 Clause18) 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, Materials and 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 Clause11[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 Particular 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-Clause17.3 [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 Particular Conditions** of Contract (if an amount is not so stated, this sub-paragraph (d) shall not apply),and
- e. may however exclude loss of, damage to, and rein statement of:
 - a. 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),
 - b. a part of the Works which is lost or damaged in order to rein state 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,
 - c. a part 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
 - d. Goods while they are not in Kenya, subject to Sub-Clause14.5[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-Clause2.5[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-Clause18.1[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-Clause18.4 [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 Particular**

Conditions of Contract, with no limit on the number of occurrences. If an amount is not stated in the **Particular Conditions of Contract**, this Sub-Clause shall not apply.

18.3.3 Unless otherwise stated in the Particular 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
 - vi. 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 Project Manager 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 Sub contractor, 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 in to 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:

- i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- ii) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,
- iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel,
- iv) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and
- v) 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 endeavors 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-Clause 18.2 [Insurance for Works and Contractor's Equipment].

19.4.2 After receiving this notice, the Project Manager 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 Project Manager 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 bear 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 Procuring Entity (or to any other destination at no greater cost); and

- e. the Cost of repatriation of the Contractor's staff and labor 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 himself 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 Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 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 28 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 Project Manager. Without admitting the Procuring Entity's liability, the Project Manager 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 Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

20.1.5 Within 42 days 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 Project Manager, the Contractor shall send to the Project Manager a 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 Project Manager may reasonably require; and
- c) The Contractor shall send a final claim within 28 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 Project Manager.

20.1.6 Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager 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 42days, the Project Manager 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 Project Manager does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance with Sub-Clause 20.2 [Settlement of Claims and Disputes].
- 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.

20.2 Amicable Settlement

Where a Notice of Dissatisfaction 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 Dissatisfaction in accordance with Sub-Clause 20.1 above should move to commence arbitration after the fifty-sixth day from the day on which a Notice of Dissatisfaction was given, even if no attempt at an amicable settlement has been made.

20.3 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) The appointment of a replacement Project Manager upon the said person ceasing to act.
- b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
- c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
- e) Any dispute arising in respect of war risks or war damage.
- f) 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.

20.4 Arbitration

20.4.1 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. Arbitration shall be conducted as follows:

- a) If the contract is with foreign contractors, arbitration proceedings shall be administered by the arbitration institution designated in the Particular Conditions of Contract, and conducted under the rules of arbitration of such institution; or, if so specified in the Particular Conditions of Contract, international arbitration in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or if neither an arbitration institution nor UNCITRAL arbitration rules are specified in the Particular Conditions of Contract, 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;
- b) If the Contract is with national contractors, arbitration with proceedings conducted in accordance with the Arbitration Laws of Kenya.

20.4.2 The place of arbitration shall be the neutral location specified in the Particular Conditions of Contract; and the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].

- 20.4.3 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.
- 20.4.4 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.
- 20.4.5 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the Works.
- 20.4.6 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.

20.5 National arbitration with proceedings

- 20.5.1 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
- 20.5.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.
- 20.5.3 The arbitration may be on the construction of this Contract or on any matter or thing of whatsoever nature arising thereunder or in connection therewith, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to be entitled to or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.
- 20.5.4 Provided that 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.
- 20.5.5 Notwithstanding 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.
- 20.5.6 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.
- 20.5.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.
- 20.5.8 The award of such Arbitrator shall be final and binding upon the parties.

20.6 Failure to Comply with Arbitrator's Decision

In the event 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.

SECTION IX - PARTICULAR CONDITIONS OF CONTRACT

The following Particular Conditions shall supplement the GCC. Whenever there is a conflict, the provisions here in shall prevail over those in the GCC.

Part A - Contract Data

Conditions	Sub-Clause	Data
Procuring Entity's name and address	Heading	
Name and Reference No. of the Contract	Heading and 3.1.1	
Project Managers Name and address	Heading and 3.1.1	
Contractor's Representative's name	4.3.1	<i>[insert the name of the Contractor's Representative agreed by the Procuring Entity prior to Contract signature]</i>
Key Personnel names	6.9.1	<i>[insert the name of each Key Personnel agreed by the Procuring Entity prior to Contract signature]</i>
Time for Completion	1.1.	_____ days <i>If Sections are to be used, refer to Table: Summary of Sections below</i>
Defects Notification Period	1.1	_____ days
Sections	1.1	<i>If Sections are to be used, refer to Table: Summary of Sections below</i>
Electronic transmission systems	1.3	
Time for the Parties entering into a Contract Agreement	1.6	Within 28 days
Commencement Date	8.1.1	
Time for access to the Site	2.1	No later than the Commencement Date, and not later than _____ days after Commencement Date
Project Manager's 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 _____ <i>[insert either one of "demand guarantee" or "performance bond"]</i> in the amount(s) of <i>[insert related figure(s)]</i> percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.
Normal working hours	6.5	Specify
Delay damages for the Works	8.7 & 14.15.1(b)	_____ % of the Contract Price per day. <i>If Sections are to be used, refer to Table: Summary of Sections below</i>
Maximum amount of delay damages	8.7	_____ % of the final Contract Price.
Provisional Sums	13.5. (b)(ii)	<i>[If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]</i> _____ %
Adjustments for Changes in Cost	13.8.3	Period "n" applicable to the adjustment multiplier "Pn": _____ <i>[Insert the period if different from one (1) month; if period "n" is one (1) month, insert "not applicable"]</i>

Conditions	Sub-Clause	Data
Total advance payment	14.2.1	___% Percentage of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable <i>[Insert number and timing of instalments if applicable]</i>
Repayment amortization rate of advance payment	14.2.5 (b)	_____ %
Percentage of Retention	14.3.2 (c)	_____ %
Limit of Retention Money	14.3.2 (c)	_____ % 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 _____ <i>[list]</i> .
	14.5.3(c)(i)	Plant and Materials for payment when delivered to the Site _____ <i>[list]</i> .
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	14.8.2	Specify _____ % rate per month of delayed payment.
Maximum total liability of the Contractor to the Procuring Entity	17.6.2	<i>[Select one of the two options below as appropriate]</i> The product of _____ <i>[insert a multiplier less or greater than one]</i> times the Accepted Contract Amount, or _____ <i>[insert amount of the maximum total liability]</i>
Periods for submission of insurance: a. evidence of insurance. b. relevant policies	18.1.6	<i>[Insert period for submission of evidence of insurance and policy. Period may be from 14 days to 28 days.]</i> ____ days ____ days
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	<i>[Insert maximum amount of deductibles]</i>
Minimum amount of third-party insurance	18.3.2	<i>[Insert amount of third-party insurance]</i>
The place of arbitration	20.4.2	<i>Insert city and country</i>

SECTION IX - CONTRACT FORMS

Table of Forms

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

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FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE

FORMN01: NOTIFICATION OF INTENTION TO AWARD

This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender. 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 Intention to 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) 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.

S/No.	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

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]
 - ii) Agency: [insert name of Procuring Entity]
 - iii) 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:_____

Email:_____

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 ofdated the...day of20.....in the matter of Tender No.....of20..... 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 of20.....

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 28days 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 Letter of Acceptance
 - b) The Letter of Tender
 - c) The addenda Nos _____ (if any)
 - d) The Particular 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 hereby covenants with the Procuring Entity to execute the Works and to remedy defects there in in conformity in all respects with the provisions of the Contract.
4. The Procuring Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto 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 _____ (herein after 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, hereby 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 itself 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 there in.
4. 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.
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.*

¹The 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.

²Insert 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- PERFORMANCESECURITY [Option2–Performance Bond]

[Note: Procuring Entities are advised to use Performance Security–Unconditional Demand Bank Guarantee instead 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 Oblige (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:
 - (1) Complete the Contract in accordance with its terms and conditions; or
 - (2) 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 here under, the amount set for thin 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
 - (3) 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 hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested 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 _____(herein after called “the Contractor”) has entered in to Contract No. _____dated _____with the Beneficiary, for the execution of _____(herein after 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, hereby 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, ~~g~~ 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.

¹The 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.

²Insert 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] (herein after called "the Contractor") has entered in to 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 for thin 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 under take 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 show grounds 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 20...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.

¹The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.

²Insert 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**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 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]”

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]

