REPUBLIC OF KENYA

PROPOSED COMPLETION OF NATIONAL EMPLOYMENT PROMOTION CENTRE AT KABETE- PHASE 2

WP. ITEM NO. D114 NB/NB/2301 JOB NO. 10002B

SPECIFICATIONS AND BILLS OF QUANTITIES FOR SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF MECHANICAL SERVICE WORKS

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MARCH, 2024

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TENDER DOCUMENTS FOR PROCUREMENT OF WORKS (MECHANICAL SERVICES WORKS)

1) NAME AND CONTACT ADDRESSES OF PROCURING ENTITY

Name: **PRINCIPAL SECRETARY,**
STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT,
Address: **P.O. BOX 40326-00100 NAIROBI**

2) Invitation to Tender (ITT) No: .....

3) Tender Name: **PROPOSED COMPLETION OF NATIONAL EMPLOYMENT PROMOTION CENTRE AT KABETE- PHASE 2**

INVITATION TO TENDER

PROCURING ENTITY: *PRINCIPAL SECRETARY,*
STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT,
Address: P.O. BOX 40326-00100 NAIROBI

CONTRACT NAME AND DESCRIPTION: PROPOSED COMPLETION OF NATIONAL EMPLOYMENT PROMOTION CENTRE AT KABETE- PHASE 2.

1. The ***PRINCIPAL SECRETARY, STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT,*** invites sealed tenders for the construction of the ***PROPOSED NATIONAL EMPLOYMENT PROMOTION CENTRE AT KABETE- PHASE 2.***

2. Tendering will be conducted under open competitive method (National/~~International~~). Tendering is open to all qualified and interested Tenderers.

3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours *[0900 to 1700 hours]* at the address given below.

4. A complete set of tender documents may be purchased or obtained by interested tenders upon payment of a non- refundable fees of (*Kshs. 1,000.00*) in cash or Banker's Cheque and payable to the address given below. Tender documents may be obtained electronically from the Website(s) www.tenders.go.ke, www.labour.go.ke or public procurement information portal (tenders.go.ke). Tender documents obtained electronically will be free of charge.

5. Tender documents may be viewed and downloaded for free from the website www.nea.go.ke. Tenderers who download the tender document must forward their particulars immediately to *procurement@labour.go.ke and P.O.BOX 40326-00100, NAIROBI* to facilitate any further clarification or addendum.

6. Tenders shall be quoted be in Kenya Shillings and shall include all taxes. Tenders shall remain valid for **156 days** from the date of opening of tenders.

7. All Tenders must be accompanied by a ***Tender Security*** *of Kshs. 932,000.00*

8. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

9. Completed tenders must be delivered to the address below on or before *(as indicated in tender advertisement).* Electronic Tenders ***will not*** be permitted.

10. Tenders will be opened immediately after the deadline date and time specified above or any dead line date and times pecified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.

11. Late tenders will be rejected.

12. The addresses referred to above are:

    PRINCIPAL SECRETARY,
    STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT,
    P.O. BOX 40326-00100 NAIROBI

A. Address for obtaining further information and for purchasing tender documents

(1) **Name of Procuring Entity:** PRINCIPAL SECRETARY, STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT

(2) **Postal Address:** P.O. BOX 40326-00100, NAIROBI
(3) **Physical address:** NSSF Building, Bishop Road, Block A Eastern Wing 14th Floor Room 1405
(4) **Email:** procurement@labour.go.ke, tenders.go.ke

As per Tender Advert

B. Address for Submission of Tenders.

(1) **Name of Procuring Entity:** PRINCIPAL SECRETARY, STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT

(2) **Postal Address:** P.O. BOX 40326-00100, NAIROBI

(3) **Physical address:** NSSF Building Block A Eastern Wing 14th Floor

C. Address for Opening of Tenders.

(1) **Name of Procuring Entity:** PRINCIPAL SECRETARY, STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT

(2) **Physical address:** NSSF Building Block A Eastern Wing 14th Floor

PRINCIPAL SECRETARY,
STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT

Name_____

(*Official of the Procuring Entity issuing the invitation)*

Designation _____

Signature _____

Date _____

PART1: TENDERING PROCEDURES

SECTION I - INSTRUCTIONS TO TENDERERS A

GENERAL PROVISIONS

1.0 Scope of tender

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

1.2 Throughout this tendering document:

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

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

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

2.0 Fraud and corruption

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

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

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

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

3.0 Eligible tenderers

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

3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.

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

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

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

c) Has the same legal representative as an other tenderer;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprisetoenableitcompetewithfirmsintheprivatesectoronanequalbasis.

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

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

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

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

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

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

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

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

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

4.0 Eligible goods, equipment, and services

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

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

5.0 Tenderer's responsibilities

5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender, and the Procuring Entity will in no case be responsible or liable for those costs.

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

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

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

B. CONTENTS OF TENDER DOCUMENTS

6.0 Sections of Tender Document

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

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

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

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

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents. Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of a pre-arranged site visit and those of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 10. Incase of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

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

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

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

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

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

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

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

8.0 Amendment of Tender Documents

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

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

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

C. PREPARATION OF TENDERS

9. Cost of Tendering

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

10.0 Language of Tender

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

11.0 Documents Comprising the Tender

11.1 The Tender shall comprise the following:

a) Form of Tender prepared in accordance with ITT 12;
b) Schedules including priced Bill of Quantities, completed in accordance with ITT 12 and ITT 14;
c) Tender Security or Tender-Securing Declaration, in accordance with ITT 19.1;
d) Alternative Tender, if permissible, in accordance with ITT 13;
e) ***Authorization:*** written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordancewithITT20.3;
f) *Qualifications:* documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to per form the Contract if its Tender is accepted;
g) *Conformity:* a technical proposal in accordance with ITT 16;
h) Any other document required in the **TDS.**

11.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a

Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed JV Agreement. Change of membership and conditions of the JV prior to contract signature will render the tenderliable for disqualification.

12.0 Form of Tender and Schedules

12.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant form*s* furnished in Section IV, Tendering Forms. The forms must be completed with out any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested. The Tenderer shall chronologically serialize all pages of the tender documents submitted.

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

13. Alternative Tenders

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

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

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

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

14.0 Tender Prices and Discounts

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

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

14.3 The price to be quoted in the Form of Tender, in accordance with ITT 12.1, shall be the total price of the Tender, including any discounts offered.

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

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

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

14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of Tenders, shall be included in the rates and prices and the total Tender Price submitted by the Tenderer.

15.0 Currencies of Tender and Payment

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

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

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

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

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

16.0 Documents Comprising the Technical Proposal

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

17.0 Documents Establishing the Eligibility and Qualifications of the Tenderer

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

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

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

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

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

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

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

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

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

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

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

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

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

18.0 Period of Validity of Tenders

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

18.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may requestTendererstoextendtheperiodofvalidityoftheirTenders.Therequestandtheresponsesshallbemadei n writing. If a Tender Security is requested in accordance with ITT 19, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting ther equest shall not be required or permitted to modify its Tender.

19.0 Tender Security

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

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

I) cash;

ii) a bank guarantee;

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

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

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

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

19.5 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the TDS. The Procuring

Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non-responsive or a bidder declines to extend tender validity period.

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

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

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

b) if the successful Tenderer fails to: -

i) signthe Contract in accordance with ITT47; or

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

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

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

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

20.0 Format and Signing of Tender

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

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

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

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

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

D. SUBMISSION AND OPENING OF TENDERS

21.0 Sealingand Marking of Tenders

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

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

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

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

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

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

The inner envelopes or packages or containers shall:

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

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

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

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

22.0 Deadline for Submission of Tenders

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

22.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the TenderDocumentsinaccordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall there after be subject to the deadline as extended.

23.0 Late Tenders

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

24.0 Withdrawal, Substitution, and Modification of Tenders

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

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

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

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

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

25. Tender Opening

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

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

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

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

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

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

opening committee attending the opening.

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

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

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

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

E. EVALUATION AND COMPARISON OF TENDERS

26. Confidentiality

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

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

26.3 Not withstanding ITT 26.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any matter related to the tendering process, it shall do so in writing.

27.0 Clarification of Tenders

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

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

28.0 Deviations, Reservations, and Omissions

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

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

29.0 Determination of Responsiveness

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

29.2 A substantially responsive Tender is one that meets the requirements of the Tender document withoutmaterial deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:

a) Affec tin any substantial way the scope, quality, or performance of the Works specified in the Contract;
b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract;
c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsivetenders.

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

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

material deviation, reservation, or omission.

30.0 Non-material Non-conformities

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

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

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

31.0 Arithmetical Errors

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

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

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

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

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

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

32.0 Conversion to Single Currency

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

33.0 Margin of Preference and Reservations

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

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

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

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

34.0 Nominated Subcontractors

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

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

34.3 Domestic subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works

unless their specialized parts of the Works were previously designated so by the Procuring Entity in the **TDS** a scan be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractorsproposed by the Tenderer may be added to the qualifications of the Tenderer.

35. Evaluation of Tenders

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

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

a) priceadjustment in accordance with ITT 31.1 (iii); excluding provisional sums and contingencies, if any, but including Daywork items, where priced competitively;
b) price adjustment due to discounts offered in accordance with ITT 14.4;
c) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 32;
d) pricea djustment due to quantifiable non materialnon-conformities in accordance with ITT 30.3; and
e) any additional evaluation factors specified in the **TDS** and Section III, Evaluation and Qualification Criteria.

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

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

36.0 Comparison of tenders

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

37.0 Abnormally low tenders and abnormally high tenders

Abnormally LowTenders

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

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

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

Abnormally high tenders

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

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

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring

Entity may accept or not a ccept the tender depending on the Procuring Entity's budget considerations.

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

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

38.0 Unbalanced and/ or front-loaded tenders

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

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

a) accept theTender;

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

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

d) reject the Tender,

39.0 Qualifications of the tenderer

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

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

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

40.0 Lowest evaluated tender

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

a) Mostresponsive to the Tender document; and

b) the lowest evaluated price.

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

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

F. AWARD OF CONTRACT

42.0 Award criteria

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

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

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

a) the name and address of the Tenderer submitting the successful tender;
b) the Contract price of the successful tender;
c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;
d) the expiry date of the Standstill Period; and
e) instruction son how to request a debriefing and/ or submit a complaint during the stand still period;
f)

44.0 Stand still Period

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

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

45.0 Debriefing by The Procuring Entity

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

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

46.0 Letter of Award

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

47.0 Signing of Contract

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

47.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and returnittotheProcuringEntity.

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

48.0 Performance Security

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

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

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

49.0 Publication of Procurement Contract

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

a) name and address of the Procuring Entity;
b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;
c) the name of the successful Tenderer, the final total contract price, the contract duration;
d) dates of signature, commencement and completion of contract;
e) names of all Tenderers that submitted Tenders, and their Tender prices as readout at Tender opening.

50.0 Procurement related Complaints and Administrative Review

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

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

Section II - Tender Data Sheet (TDS)

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

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
A. General	
ITT 1.1	The name of the contract is **PROPOSED COMPLETION OF NATIONAL EMPLOYMENT PROMOTION CENTRE AT KABETE- PHASE 2** The reference number of the Contract is **WP. ITEM NO. D114 NB/NB/2301 JOB NO. 1002B** The number and identification of lots (contracts) comprising this Tender are *[insert number and identification of lots (contracts)]*
ITT 2.4	The Information made available on competing firms is as follows: **As contained in this tender document.**
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: ***State Department For Public Works*** ***P. O. Box 30743-00100, Nairobi*** *The roles are defined as follows;* ***Project Manager – Works Secretary*** ***Architect - Chief Architect*** ***Quantity Surveyor - Chief Quantity Surveyor*** ***Civil/Structural Engineer - Chief Structural Engineer*** ***Mechanical Engineer - Chief Engineer Mechanical*** ***Electrical Engineer – Chief Electrical Engineer***
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: ***Not Applicable***
B. Contents of Tender Document	
ITT 7.1	(i) The Tenderer will submit any request for clarifications in writing at the Address: ***as indicated in the tender advertisement*** . to reach the Procuring Entity not later than ***as indicated in the tender advertisement*** . (ii) The Procuring Entity shall publish its response at the website www.labour.go.ke, www.tenders.go.ke,
ITT 7.2	(A) A pre-arranged pretender site visit *shall* take place at the following date, time and place: Date: _____ 19th March, 2024 Time: _____ ***11;00 am*** . Place: _____ ***as indicated in the tender advertisement*** . (B) Pre-Tender meeting *[insert "shall" or "shall not"]* take place at the following date, time and place: Date: _____ Time: _____ Place: _____
ITT 7.3	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than ***as indicated in the tender advertisement*** before the meeting.

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 7.5	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is ***www.labour.go.ke, www.tenders.go.ke.***
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: *THE PRINCIPAL SECRETARY,* *STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT* *P.O.BOX 40326 - 00100*
C. Preparation of Tenders	
ITT 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: *As listed under Section III-Evaluation and Qualification Criteria under the heading: Preliminary Examination for Determination of Responsiveness*
ITT 13.1	Alternative Tenders ***shall not*** *be* considered.
ITT 13.2	Alternative times for completion ***shall not*** *be* permitted.
ITT 13.4	Alternative technical solutions shall be permitted for the following parts of the Works: *Not applicable*
ITT 14.5	The prices quoted by the Tenderer shall be: _____ *[insert "subject to adjustment" or "fixed"]*
ITT 15.2 (a)	Foreign currency requirements are **not allowed.**
ITT 18.1	The Tender validity period shall be *156* **days from date of opening.**
ITT 18.3	(a) The Number of days beyond the expiry of the initial tender validity period will be **30 days.** (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By ____***(Not applicable)***_____% of t*he local currency portion of the Contract price adjusted to reflect local inflation during the period of extension,* *and* *(ii) By____**(Not applicable)**____% the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension.*
ITT 19.1	Tender shall provide **a Tender Security** The type of Tender security shall be in the amount of Kenya shillings **932,000.00**
ITT 20.1	In addition to the original of the Tender, the number of copies is: ***One (1No)***
ITT 20.3	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 22.1	(A) For Tender submission purposes only, the Procuring Entity's address is: **THE PRINCIPAL SECRETARY,**

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT, **P.O. BOX 40326-00100** (4) Date and time for submission of Tenders **as per the Tender Advertisement** (5) Tenders shall **shall not submit** tenders electronically.
ITT 25.1	The Tender opening shall take place at the time and the address for Opening of Tenders provided below: **7th Floor Conference Room, NSSF Building Block A, Eastern Wing,** **Bishop Road, Nairobi.** (3) Date and time for submission of Tenders **as per the Tender Advertisement**
ITT 25.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures specified below: ***Not Applicable***
E. Evaluation, and Comparison of Tenders	
ITT 30.3	The adjustment shall be based on the ***average*** price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
TT 32.1	The currency that shall be used for Tender evaluation and comparison purposes only to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: ***Kenya Shillings*** The source of exchange rate shall be: **The Central bank of Kenya** (mean rate) The date for the exchange rate shall be*:* **the deadline date for Submission of the Tenders.**
ITT 33.2	A margin of preference ***shall not*** *apply.*
ITT 33.4	The invitation to tender is extended to the following group that qualify for Reservations ***Not applicable***
ITT 34.1	At this time, the Procuring Entity ***does not intend*** to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 34.2	Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: 10 % of the total contract amount. Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 34.3	*The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows:* *1.* ***N/A***_____ For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.
ITT 35.2 (e)	Additional requirements apply. These are detailed in the evaluation criteria in **Section III, Evaluation and Qualification Criteria.**
ITT 48.1	Other documents required in addition to the Performance Security are 1. Program of Works / Progress Chart 2. Insurances (Contractors All Risk & WIBA)

Reference to ITC Clause	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 50.1	The procedures for making a Procurement-related Complaint are detailed in the "Notice of Intention to Award the Contract" herein and are also available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to: For the attention: **THE PRINCIPAL SECRETARY,** **STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT,** **P.O. BOX 40326-00100** Procuring Entity: **STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT** Email address: **procurement@labour.go.ke** In summary, a Procurement-related Complaint may challenge any of the following (among others): (i) the terms of the Tender Documents; and (ii) the Procuring Entity's decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1.0 GENERAL PROVISIONS

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

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

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

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

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

1.3 EVALUATION AND CONTRACT AWARD CRITERIA

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

2.0 PRELIMINARY EXAMINATION FOR DETERMINATION OF RESPONSIVENESS

Preliminary examination for Determination of Responsiveness

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

S/No	PRELIMINARY EVALUATION CRITERIA / MANDATORY REQUIREMENTS
MR1	Dully filled and signed form of tender prepared in accordance with ITT 12
MR2	Dully filled Schedules including priced Bill of Quantities, completed in accordance with **ITT 12** and **ITT 14;**
MR3	Provide proof of registration with the National Construction Authority **(NCA) category 2 and above** under Mechanical works with current annual contractors practicing license.
MR4	Must submit **one original** copy of the Tender Document and **one copy**. Submission of Original and Copy (all Volumes) in the format required by the procuring entity and all the tender document (all volumes) to be **TAPE BOUND**
MR5	Properly tape bound (perfect cover, hard cover or case bound), paginated, **serialized tender document** (each page of the tender submission must have a number and the numbers must be in chronological order). **For pagination, Arabic Numerals shall be used, i.e. 1,2,3,4,5,6,7,8,9,10…..n** (n being the last numerical page of the tender document)
MR6	Tender Security in accordance with ITT 19.1; of Bank Guarantee from a bank by Public Procurement Regulatory Authority (PPRA) or insurance company approved by Insurance Regulatory Authority (IRA) in the amount of **Kenya shillings 932,000.00.** The tender security shall be as per the form included in Section IV, Tender Forms.
MR7	Provide proof of power of attorney (of tender signatory if not director of the company/ partner, signed and stamped by Commissioner of Oaths)
MR8	Valid Copy of Certificate of Incorporation/ Registration. **(Certified by a Commissioner of Oaths)**

MR9	Valid Current Tax Compliance Certificate
MR10	Dully filled, signed and stamped Confidential Business Questionnaire
MR11	Valid Copy of Current Single Business permit
MR12	Submission of valid CR12 form showing the list of directors /shareholding (issued within the last 12months) or National Identity Card(s) for Sole Proprietorship/ Partnership
MR13	Letter of authority to seek references from the Tenderer's bankers.
MR14	Must fill and submit the Certificate of Independent Tender Determination in the format provided
MR15	Must fill and submit the Self-declaration form that the person/tenderer is not debarred in the matter of the Public Procurement and Asset Disposal Act 2015 in the format provided **- Form SD1.**
MR16	Must fill and submit the Self-declaration that the person/tenderer will not engage in any corrupt or fraudulent practice in the format provided **- Form SD2**
MR17	Must fill and submit Declaration and Commitment to The Code of Ethics in the format provided
MR18	Submit certified copies of audited accounts (Signed by the company Director(s) and Auditors who are Certified Public Accountants registered with Institute of Certified Public Accountants of Kenya (ICPAK)) for the last **three (3)** years **(2021,2022 and 2023) (Certified by a Commissioner of Oaths)**
MR19	Current certificate of Registration with National Construction Authority (NCA 2 and above) in Mechanical Service Works.
MR20	Current Annual NCA contractor's Practicing License(s)
MR21	Compliance with Technical Specifications

Note

On compliance with Technical Specifications, bidders shall supply equipment/items which comply with the technical specifications set out in the bid document. In this regard, the bidders will be required to submit relevant technical brochures/catalogues with the tender document, highlighting (using a mark-pen or highlighter) the Catalogue Number/model of the proposed items. Such brochures/catalogues should indicate comprehensive relevant data of the proposed equipment/items which should include but not limited to the following:

(i) Standards of manufacture;
(ii) Performance ratings/characteristics;
(iii) Material of manufacture;
(iv) Electrical power ratings; and
(v) All other requirements as indicated in the technical specifications of the bid.

The bid will then be analyzed, using the information in the technical brochures, to determine compliance with technical specifications for the works/items as indicated in the tender document. Bidders not complying with any of the technical specifications shall be adjudged to be technically non-responsive while those meeting all the technical specifications shall be adjudged to be technically responsive.

The tenderer shall also fill in the Technical Schedule as specified in the tender document for Equipment and Items indicating the Country of Origin, Model/Make/Manufacturer and catalogue numbers of the Items/Equipment they propose to supply.

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

Note: *bidders who do not satisfy any of the above requirements shall be considered non-Responsive and their tenders will not be evaluated further.*

30 TENDER EVALUATION (ITT 35)

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

a) Technical evaluation
b) Financial evaluation
c) Due diligence and recommendation for Award

TECHNICAL EVALUATION – Qualification Form

Item No.	Qualification Subject	Qualification Requirement	*Document To be Completed by Tenderer*	*For Procuring Entity's Use (Qualification met or Not Met)*
	1. ELIGIBILITY			
1.1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI - 1.1 and 1.2, with attachments	
1.2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by Kenya Revenue Authority in accordance with ITT 3.14.	Attachment	
1.3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
1.4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender	
1.5	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI - 1.1 and 1.2, with attachments	
1.6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI - 1.1 and 1.2, with attachments	
	2. HISTORICAL CONTRACT NON-PERFORMANCE			
2.1	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1st January 2020.	Form CON-2	
2.2	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
2.3	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	
2.4	Litigation History	No consistent history of court/arbitral award decisions against the tenderer since 1st January 2021	Form CON - 2	

1. Non performance, as decided by the Employer, shall include all contracts where (a) nonperformance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so

challenged but fully settled against the contractor. Non performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

2. This requirement also applies to contracts executed by the Bidder as JV member.

Qualification form cont'd

Item No.	Qualification Subject	Qualification Requirement	*Document To be Completed by Tenderer*	*For Procuring Entity's Use (Qualification met or Not Met)*
	3. FINANCIAL SITUATION AND PERFORMACE			
3.1	Financial Capabilities	The Tenderer shall submit the audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the Procuring Entity, for the last three (3) years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.	Form FIN - 3.1, with attachments	
3.2	Average Annual Construction Turnover	The Tenderer shall demonstrate that it has a minimum average annual construction turnover of Kenya Shillings 900,000,000.00, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last *3* years, divided by *3* years	Form FIN - 3.2 with attachments	
3.3	Financial Resources	The Tenderers shall demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) to meet the cash flow requirements estimated as Kenya Shillings 90,000,000.00 for works the subject contract(s) net of the Tenderer's other commitments.	Form FIN - 3.3 with attachments	

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. (*Tenderer to attach evidence such as copies of letter of award, Signed contract and copies of interim payment certificates*)	Form FIN - 3.4 with attachments	

Qualification form Cont'd

Item No.	Qualification Subject	Qualification Requirement	*Document To be Completed by Tenderer*	*For Procuring Entity's Use (Qualification met or Not Met)*
	4. EXPERIENCE			
4.1	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 *3* years, starting 1st January *2021*	4. Form EXP - 4.1 Experience	
4.2 (a)	Specific Construction & Contract Management Experience	A minimum number of *3* similar contracts[1] specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between 1st January *2021* and tender submission deadline i.e. Three (3) contracts, each of minimum value Kenya shillings 37,250,000.00 equivalent. Bidders shall attach copies of the following: a) Letters of Award or, b) Signed Contract and Completion Certificate for the respective projects. or	Form EXP 4.2(a)	

		c) If project is ongoing it must be at least 80% complete. Bidder to attach copies of interim payment certificates		

1. The similarity shall be based on the physical size, complexity, methods/technology and/or other characteristics described in the Bills of Quantities and Drawings. Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted.
2. Substantial completion shall be based on 80% or more works completed under the contract.
3. For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder's share, by value, shall be considered to meet this requirement.
4. In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

Qualification form Cont'd

Item No.	Qualification Subject	Qualification Requirement	*Document To be Completed by Tenderer*	*For Procuring Entity's Use (Qualification met or Not Met)*
	5. Equipment			
5.1	Contractors key equipment	Show evidence of ownership/access to essential construction machinery, equipment and plant. Notes • If the equipment is owned, must provide CLEAR copies of logbook or proof of ownership. • If equipment is hired or leased Provide a commitment letter from the lessor of the equipment addressed to the THE PRINCIPAL SECRETARY, STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT, P.O. BOX 40326-00100, indicating that the lessor shall avail the equipment upon award of the tender and submit a copy of a written agreement to lease between lessee and lessor indicating list of equipment and their corresponding copies of log books or proof of ownership by lessor; • The equipment listed shall be available on site when required	Form EQU: Equipment	

Item No.	Qualification Subject	Qualification Requirement	Document To be Completed by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
	6. Key Personnel			
6.1	Contractor's Representative and Key Personnel	a) Project Manager Minimum qualifications and technical experience 1. Bachelor's degree in Architecture, Engineering, Quantity Surveying, or Construction Management. 2. Registered Professional with the respective registration bodies with valid practicing licenses Board of Registration of Architects and Quantity Surveyors (BORAQS) for Architects and Quantity Sirveyors, Engineers Board of Kenya (EBK) for Engineers or a Construction Manager who is a professional member of Association of Construction Managers of Kenya (ACMK) and/or Association of Kenya (AAK)- Construction Project Managers Chapter and/or Institution of Construction Project Managers of Kenya (ICPMK) with current membership certificate. 3. General Experience –15 years. 4. Specific experience in Construction of building works – 10 years. b) Site Agent Minimum qualifications and technical experience 1. Higher Diploma in Building Construction or equivalent. 2. Specific experience in Construction of building works – 10 years. c) Foreman Minimum qualifications and technical experience 1. Certificate- Building Construction, Electrical, or Mechanical 2. Experience – 10 years d) Occupational Health and Safety Personnel Qualifications and technical experience 1. Certificate- Occupational Safety and Health 2. Experience – 8 years Note: Certified copies national Identity Cards and certificates to be provided as evidence.	Form PER -1 & Form PER -2	

Note: *Bidders who do not satisfy any of the above qualification requirements shall be considered non-Responsive and their tenders will not be evaluated further*

FINANCIAL EVALUATION

Upon completion of the technical evaluation a detailed financial evaluation shall follow.
The evaluation shall be in the following **three stages:**

a) Determination of Arithmetic errors
b) Comparison of Rates; and
c) Consistency of the Rates.

DUE DILIGENCE AND RECOMMENDATION FOR AWARD

Particulars of post qualification : The Client, ***STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT***, may inspect the premises and under due diligence to seek further clarification/confirmation if necessary, to confirm authenticity /compliance of any condition of the tender /qualifications of the tenderer in line with Section 83 of the Public Procurement and Asset Disposal Act ,2015

Award Criteria: The firm achieving the lowest evaluated price will be awarded the contract in line with Section 86 and Section 155(4) of the Public Procurement and Disposal Act,2015

SECTION IV - TENDERING FORMS

QUALIFICATION FORMS

1. FOREIGN TENDERERS 40%RULE

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

ITEM	Description of Work Item	Describe location of Source	COST in K. shillings	Comments, if any
A	Local Labor			
1				
2				
3				
4				
5				
B	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			
	PERCENTAGE OF CONTRACT PRICE			

2. FORMEQU: 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 fo ralternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current	Current location	
	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	
	Omit the following information for equipment owned by the Tenderer.	
Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

3. FORM PER -1

Contractor's Representative and Key Personnel Schedule

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

Contractor' Representative and Key Personnel

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

4. FORM PER - 2:

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

Name of Tenderer

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

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

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

Declaration

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

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

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

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

(a) be taken into consideration during Tender evaluation;
(b) result in my disqualification from participating in the Tender;
(c) result in my dismissal from the contract.

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

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

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

5.1 FORM ELI -1.1

Tenderer InformationForm

Date:_____

ITT No. and title:_____

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

5.2 FORM ELI -1.2

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

Date:_____

ITT No. andtitle:_____

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

53 FORM CON –2

Historical Contract Non-Performance, Pending Litigation and Litigation History

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

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

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

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

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

5.4 FORM FIN – 3.1:

Financial Situation and Performance

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

5.4.1. Financial Data

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

*Refer to ITT 15 for the exchange rate

5.4.2 Sources of Finance

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

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

5.4.3 Financial documents

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

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

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

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

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

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

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.

[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.

5.6 FORM FIN – 3.3:

Financial Resources

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

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

5.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

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

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

5.8 FORM EXP - 4.1

General Construction Experience

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

Page _____of _____pages

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

5.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

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

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

5.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

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

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

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

Specific Construction and Contract Management Experience (cont.)

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

5.10 FORM EXP - 4.2(b)

Construction Experience in Key Activities

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

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

1. Key Activity No One: _

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

[2] If applicable

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

2. Activity No. Two
3.

.....

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) Allitalicized text is to help Tenderer in preparing this form.

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

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

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

Date of thisTender submission: *[insert date (as day, month and year) of Tender submission]* **Request for Tender No.:** *[insert identification]* **Name and description of Tender** *[Insert as per ITT)* **Alternative No.:** *[insert identification No if this is a Tender for an alternative]*

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

Dear Sirs,

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

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

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

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

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

5. We, the under signed, further declare that:

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

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

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

[1] *This sum should be carried forward from the Summary of the Bills of Quantities.*

2[4] The percentage quoted above should not include provisional sums, and not more than two foreign currencies are allowed.

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

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

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

Option2, in case of multiple lots:

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

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

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

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

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

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

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

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

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

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

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

Name of Recipient	Address	Reason	Amount

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Date signed_____day of_____,_____

Notes
** In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer.*
***Person signing the Tender shall have the power of attorney given by the Tenderer to be attached with the Tender.*

(a) TENDERER'S ELIGIBILITY-CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

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

(a) Tenderer'sdetails

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

General and Specific Details

(b) Sole Proprietor, provide the following details.

Name in full_____Age_____
Nationality_____Country of Origin_____
Citizenship_____

(c) Partnership, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

(d) Registered Company, provide the following details.

I) Private or public Company _____

ii) State the nominal and issued capital of the Company_____

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

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

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

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

If yes, provide details as follows.

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

(i) Conflict of interest disclosure

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

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
	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.		

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_____

Titleor Designation_____

_____ _____

(Signature) *(Date)*

b) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

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

Icertify, on behalf of_____ *[NameofTenderer]*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. Iamthe 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. TheTenderer 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) theTenderer 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. Inparticular, 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 intentiono r 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 pursuan tto 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 toparagraph(5)(b) above;

8. Thetermsofthe 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, whichevercomesfirst, unless otherwise required byl aw or as specifically disclosed pursuant to paragraph (5)(b) above.

Name_____
Title_____
Date _____

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

(c) SELF- DECLARATION FORMS

FORM SD1

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

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

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

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

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

……	……	……
(Title)	(Signature)	(Date)

Bidder Official Stamp

FORM SD2

SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE.

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

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

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

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

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

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

6.

…… …… ……

(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 Procurementand Asset Disposal and my responsibilities under the Code.

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

Name of Authorized
signatory……

Sign……
…

Position……
……

Office address……

Telephone…… E-

mail……
……

Name of the Firm/Company……

Date……

(Company Seal/ Rubber Stamp where applicable)

Witness

Name……
……

Sign……

Date……

(d) APPENDIX 1 - FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

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

2. Requirements

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

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

2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;

3) Without limiting the generality of the subsection (1) and (2), the person shall be: -

   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or

   b) if a contract has already been entered into with the person, the contract shall be voidable;

4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;

5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity whohas a conflict of interest with respect to a procurement: -

   a) Shall not take part in the procurement proceedings;

   b) shall not, after a procurement contract has been entered in to, take part in any decision relating to the procurement or contract; and

   c) shall not be a subcontract or for the tender to whom was awarded contract, or a member of the group of tenderers to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflictofinteresttotheprocuringentity;

7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom

one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

3. In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:

a) Defines broadly, for the purposes of the above provisions, the terms setf orth below as follows:

i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

ii) "fraudulent practice" is any act or omission, including is representation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii) "collusive practice"is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
"coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

iv) "obstructive practice" is:

- Deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

- acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.

b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

"fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal processorthe exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.

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

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

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

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

[1] *For the avoidance of doubt, a party's in eligibility to be awarded a contract shall includee, without limitation, (i) applying for pre-qualification,*

expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

[2] *Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, suc has 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 copyor electronic format) deemed relevant for th einvestigation/audit, and making copies there of as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

FORM OF TENDER SECURITY-[Demand Bank Guarantee]

Beneficiary:_____

Request forTenders 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 onor before that date.

_____

[signature(s)]

FORM OF TENDER SECURITY (TENDER BOND)

[TheSuretyshallfillin this Tender Bond Form in accordance with the

instructions indicated.] BOND NO.__

1. BY THIS BOND *[name of tenderer]* as Principal (hereinafter called "the Principal"), and *[name, legal title,and address of surety],***authorized to transact business in** *[name of country of Purchaser],* as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of Purchaser]* as Obligee (hereinafter called "the Purchaser") in the sum of *[amount of Bond][amount in words]*,for the payment of which sum,well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and as signs, jointly and severally, firmly by these presents.

2. WHERE AS the Principal has submitted or will submit a written Tender to the Purchaser dated the__dayof _____, 20, for the supply of *[name of Contract]* (herein after called the "Tender").

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

   a) Has with drawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension there to provided by the Principal; or

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

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

4. The Surety here by agrees that its obligation will remain in full force and effect upto and including the date 30 days after the date of expiration of the Tender Validity Period set forth in the Principal's Letter of Tender or any extension thereto provided by the Principal.

5. IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this day of_____20.

Principal:_____ Surety:_____
Corporate Seal (where appropriate)

……	…….
(Signature)	*(Signature)*
(Printed name and title)	*(Printed name and title)*

FORM OF TENDER - SECURING DECLARATION

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

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

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

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

declare that:

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

2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of ourobligation(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 Iam /we are/ in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

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

or sole proprietor, etc.) ……..……

Name:…….. Duly authorized to sign

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

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

Appendix toTender

Schedule of Currency requirements

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

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

PART II - WORKS REQUIREMENTS

SECTION V - BILLS OF QUANTITIES

Bills of Quantities as annexed in the Tender Document

SECTION VI - SPECIFICATIONS

The specifications shall be in accordance with Ministry of Works General Specifications 1976 edition together with any amendments issued thereto.

If there is any discrepancy between the Drawings, Bills of Quantities and the General Specifications, the Project manager shall give direction

SECTION VII – DRAWINGS

DRAWING TITLE	DRAWING NO.
As issued by the Project Manager	

PART III - THE CONDITIONS OF CONTRACT AND CONTRACT

General Conditions of Contract

---

1. GENERALPROVISIONS

1.1 Definitions

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

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

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

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

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

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

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

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

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

"Contractor'sPersonnel" 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 timeby the Contractor who acts on behalf of the Contractor.

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

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

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

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

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

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

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

"Defects Notification Period" means the period for notifying defects in the Works oraSection(asthecasemaybe) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], whichextendsoverthedaysstated intheSpecialConditionsofContract.

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

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

"Final Statement" means the statement defined in Sub-Clause 14.11

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

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

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

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

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

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

"Local Currency" means the currency of Kenya.

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

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

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

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

"Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].

"Performance Certificate" means the certificate issued under Sub-Clause 11.9 [Performance Certificate].

"Performance Security" means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].

"Permanent Works" means the permanent works to be executed by the Contractor under the Contract.

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

operation of the Works.

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

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

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

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

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

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

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

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

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

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

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

"Specification" means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

"Start Date" or "Commencement Date"is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with the Site possession date(s).

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

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

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

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

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

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

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

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

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

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

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

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

1.2 Interpretation

In the Contract, except where the context requires otherwise:

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

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

1.3 Communications

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

a) In writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Special Conditions of Contract; and
b) delivered, sentor transmitted to the addressf or the recipient's communications as stated in the Special Conditions of Contract. However:

i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the addressfromwhichtherequestwasissued.

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

1.4 Law and Language

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

1.4.2 The ruling language ofthe Contract shall be **English.**

1.5 Priority of Documents

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

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

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

1.6 Contract Agreement

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

1.7 Assignment

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

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

1.8 Care and Supply of Documents

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

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

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

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

1.9 Timely provision of Drawings or Instructions

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

1.9.2 If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Architect to issue the

notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

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

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

1.10 Procuring Entity's Use of Contractor's Documents

1.10.1 Asagreed 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 Entityf or purposes other than those permitted under Sub-Clause 1.10.2.

1.11 Contractor's Use of Procuring Entity's Documents

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

1.12 Confidential Details

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

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

1.13 Compliance with Laws

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

a) The Procuring Entity shall have obtained (or shall obtain) the planning, zoning, building permitor 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 ofthe Procuring Entity's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of in eligibility pursuant to the Procuring Entity's prevailing sanctions procedures).

2 THE PROCURING ENTITY

2.1 Right of Access to the Site

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

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

2.1.3 If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Procuring Entity to give any such right or possession within such time, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause

8.4 [Extension of Time for Completion], and

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

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

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

2.2 Permits, Licenses or Approvals

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

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

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

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

2.3 Procuring Entity'sPersonnel

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

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

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

2.4 Procuring Entity's Financial Arrangements

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

3. THE ENGINEER

3.1 Engineer Duties and Authority

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

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

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

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

3.1.5 Except as otherwise stated in these Conditions:

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

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

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

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

3.1.6 The following provisions shall apply:

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

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

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

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

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

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

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

3.1.7 Not withstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forth with comply, despite the absence of approval of the Procuring Entity, with any such instruction of the Engineer. The Architect shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Procuring Entity.

3.2 Delegation by the Engineer

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

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

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

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

3.3 Instructions of the Engineer

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

3.3.2 The Contractor shall comply with the instructions given by the Architect or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Architec tor a delegated assistant:

a) Gives an oral instruction,

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

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

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

3.4 Replacement of the Engineer

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

3.5 Determinations

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

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

4 THE CONTRACTOR

4.1 Contractor's General Obligations

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

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

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

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

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

notified to the Engineer.

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

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

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

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

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

4.2 Performance Security

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

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

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

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

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

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

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

4.3 Contractor's Representative

4.3.1 The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract. The Contractor's Representative's

Name and Address shall be provided in the **Special Conditions of Contract.**

4.3.2 Unless the Contractor's Representative **is named in the Contract**, the Contractor shall, prior to the Commencement Date, submit to the Architect for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is with held 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 an other suitable person for such appointment.

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

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

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

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

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

4.4 Sub-contractors

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

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

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

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

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

4.5 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Procuring Entity, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Procuring Entity for the work carried out by the Subcontractor after the assignment takes effect.

4.6 Co-operation

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

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

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

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

4.7 Setting Out of the Works

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

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

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

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

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

4.8 Safety Procedures

The Contractor shall:

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

4.9 Quality Assurance

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

The Architect shall be entitledto audit any aspect of the system.

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

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

4.10 Site Data

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

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

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

4.11 Sufficiency of the Accepted Contract Amount

4.11.1 TheContractor shall be deemed to:

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

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

4.12 Unforeseeable Physical Conditions

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

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

4.12.3 This notice shal ldescribe the physical conditions, so that they can be inspected by the Architect and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Architect may give. If

an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

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

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

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

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

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

4.13 Rights of Way and Facilities

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

4.14 Avoidance of Interference

4.14.1 The Contractor shall not interfere unnecessarily or improperly with:

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

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

4.15 Access Route

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

4.15.2 Except as otherwise stated in these Conditions:

a) The Contractor shall (as be tween 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 a vailability of particular access routes; and

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

4.16 Transport of Goods

Unless otherwise stated in the Special Conditions:

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

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

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

4.17 Contractor's Equipment

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

4.18 Protection of the Environment

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

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

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

4.19 Electricity, Water and Gas

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

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

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

4.20 Procuring Entity's Equipment and Free-Issue Materials

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

stated in the Specification. Unless otherwise stated in the Specification:

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

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

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

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

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

4.21 Progress Reports

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

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

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

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

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

   i) commencement of manufacture,

   ii) Contractor's inspections,

   iii) tests, and

   iv) shipment and arrival at the Site;

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

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

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

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

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

4.22 Security of the Site

Unless otherwise stated in the Special Conditions:

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

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

4.23 Contractor's Operations on Site

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

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

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

4.24 Fossils

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

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

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

b) payment of any such Cost, which shall be included in the Contract Price.
After receiving this further notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

5. NOMINATED SUBCONTRACTORS

5.1 Definition of "nominated Subcontractor"

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

a) Who is nominated by the Procuring Entity, or

b) Contractor has nominated as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].

5.2 Objection to Nomination

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

a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;

b) the nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or

c) the nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:

i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge hisobligations and liabilities under the Contract;

ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities, and

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

5.3 Payments to nominated Subcontractors

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

5.4 Evidence of Payments

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

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

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

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

6. STAFF AND LABOR

6.1 Engagement of Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and 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 Labor

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 Entity's whose trade or industry is similar to that of theContractor.

6.2.2 The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in Kenya in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of Kenya for the time being in force, and the Contractor shall perform such

duties in regard to such deductions there of as may be imposed on him by such Laws.

6.3 Persons in the Service of Procuring Entity

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

6.4 Lab or Laws

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

6.5 Working Hours

Nowork shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the **Special Conditions of Contract**, unless:

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

6.6 Facilities for Staff and Labor

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

6.7 Health and Safety

6.7.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with loca lhealth 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 what ever is required by this person to exercise this responsibility and authority.

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

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

6.8 Contractor's Superintendence

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

6.8.2 Superintendence shall be given by a sufficient number of persons having adequate knowledge of the

language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

6.9 Contractor's Personnel

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

a) Persists in any misconduct or lack of care,
b) Carries out duties in competently or negligently,
c) fails to conform with any provisions of the Contract,
d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment, or
e) based on reasonable evidence, is determined to have engaged in Fraud and Corruption during the execution ofthe Works.

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

6.10 Records of Contractor's Personnel and Equipment

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

6.11 Disorderly Conduct

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

6.12 Foreign Personnel

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

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

6.13 Supply of Water

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

6.15 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of Kenya, onsite, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation,

sale, gift, barter or disposal there of by Contractor's Personnel.

6.16 Prohibition of Forced or Compulsory Labour

The Contractor shall not employ forced labor, 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 labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

6.17 Prohibition of Harmful Child Labor

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

6.18 Employment Records of Workers

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

6.19 Workers' Organizations

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

6.20 Non-Discrimination and Equal Opportunity

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

7. PLANT, MATERIALS AND WORKMANSHIP

7.1 Manner of Execution

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

a) In the manner (if any) specified in the Contract,
b) in a proper workman like and careful manner, in accordance with recognized good practice, and
c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

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

a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
b) additional samples instructed by the Architect as a Variation.

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

7.3 Inspection

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

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

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

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

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

7.4 Testing

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

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

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

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

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

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

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

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

7.4.7 The Contractor shall promptly forward to the Architect duly certified reports of the tests. When thespecified tests have be enpassed, the Architect shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Architect has not attended the tests, he shall be deemed to have accepted the readings as accurate.

7.5 Rejection

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

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

7.6 Remedial Work

7.6.1 Not withstanding any previous test or certification, the Architect may instruct the Contractorto:

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

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

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

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

7.7 Ownership of Plant and Materials

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

a) When it is in corporated 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) thedisposal of material from demolitions and excavations and of other surplus material (whether natural orman-made), except to the extent that disposal are as within the Site are specified in the Contract.

8 COMMENCEMENT, DELAYS AND SUSPENSION

8.1 Commencement of Works

8.1.1 Except as otherwise specified in the Special Conditions of Contract, the Commencement Date shall be the date at which the following precedent condition shave all been fulfilled and the Architect notification recording the agreement of both Parties on such fulfilment and instructing to commence the Work is received by the Contractor:

a) Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of Kenya;
b) except if otherwise specified in the Special Conditions of Contract, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works.
c) Receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor.

8.1.2 If the said Architect instruction is not received by the Contractor within 180 days from his receipt of

the Letter of Acceptance, the Contractor shall be entitled to terminate the Contract under Sub-Clause1 6.2 [Terminationby Contractor].

8.1.3 The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date and shal lthen proceed with the Works with due expedition and without delay.

8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

a) Achieving the passing of the Testson Completion, and

b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].

8.3 Programme

8.3.1 The Contractor shall submit a detailed time programme to the Architect within1 4 days after receiving the notice under Sub-Clause 8.1 [Commencement of Works]. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include:

a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,

b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),

c) the sequence and timing of inspections and tests specified in the Contract, and

d) a supporting report which includes:

   i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and

   ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage

8.3.2 Unless the Engineer, within 14 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Procuring Entity's Personnel shall be entitled to rely upon the programme when planning their activities.

8.3.3 The Contractor shall promptly give notice to the Architect of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works.

8.3.4 If, at anytime, the Architect gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contractor to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Architect in accordance with this Sub-Clause.

8.4 Extension of Time for Completion

8.4.1 The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:

a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,
b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,
c) exceptionally adverse climatic conditions,
d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or
e) any delay, impediment or prevention caused by or attributable to the Procuring Entity, the Procuring Entity's Personnel, or the Procuring Entity's other contractors.

8.4.2 If the Contractor considers itself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Architect in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Architec tshall 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 anytime:

a) Actual progress is too slow to complete within the Time for Completion, and/or
b) Progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme], other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Architect may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

8.6.2 Unless the Architect notifies otherwise, the Contractor shall adopt these revised methods, which mayrequire increases in the working hours and/or in the numbers of Contractor's Personnel and/or

Goods, at the risk and cost of the Contractor. If these revised methods cause the Procuring Entity to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay these costs to the Procuring Entity, in addition to delay damages (if any) under Sub-Clause 8.7 below.

8.6.3 Additional costs of revised methods including acceleration measures, instructed by the Architect to reduce delays resulting from causes listed under Sub-Clause 8.4 [Extension of Time for Completion] shall be paid by the Procuring Entity, without generating, however, any other additional payment benefit to the Contractor.

8.7 Delay Damages

8.7.1 If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Procuring Entity's Claims] pay delay damages to the Procuring Entity for this default. These delay damages shall be the sum stated in the **Special Conditions of Contract**, which shall be paid for everyday which shall elapse between the relevant Time for Completion and the date stated in the taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Special Conditions of Contract.

8.7.2 These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Procuring Entity] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

8.8 Suspension of Work

8.8.1 The Architect may at anytime instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works a gainst any deterioration, loss or damage.

8.8.2 The Architect may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.

8.9 Consequences of Suspension

8.9.1 If the Contractor suffers delay and/or incurs Cost from complying with the Architect instructions under Sub- Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

8.9.2 After receiving this notice, the Architect shall proceed in accordance with Sub-Clause3.5 [Determinations] to agree or determine these matters.

8.9.3 The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/ or Materials which have not been delivered to Site, if:

a) The work on Plant or delivery of Plant and/ or Materials has been suspended for more than 30 days, and

b) the Contractor has marked the Plant and/or Materials as the Procuring Entity's property in accordance with the Architect instructions.

8.11 ProlongedSuspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Architect permission to proceed. If the Architect does not give permission within 30 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Architect shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receivingf rom the Architec tan instruction to this effect under Clause 13 [Variations and Adjustments].

9. TESTS ON COMPLETION

9.1 Contractor's Obligations

9.1.1 The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].

9.1.2 The Contractor shall give to the Architect not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Architect shall instruct.

9.1.3 In considering the results of the Tests on Completion, the Architect shall make allowances for the effect of any use of the Works by the Procuring Entity on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the resultsof these Tests to the Engineer.

9.2 Delayed Tests

9.2.1 If the Tests on Completion are being unduly delayed by the Procuring Entity, Sub-Clause 7.4 [Testing] (fifth paragraph) and/ or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.

9.2.2 If the Tests on Completion are being unduly delayed by the Contractor, the Architect may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Testson such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

9.2.3 If the Contractor fails to carryout the Tests on Completion within the period of 21 days, the Procuring Entity's Personnel may proceed with the Test sat the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted asaccurate.

9.3 Retesting of related works

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Architect or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

9.4 Failure to Pass Tests on Completion

9.4.1 If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Architect shall be entitled to:

a) Order further repetition of Tests on Completion under Sub-Clause 9.3; or

b) if the failure deprives the Procuring Entity of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Procuring Entity shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause1 1.4 [Failure to Remedy Defects].

10. PROCURING ENTITY'S TAKING OVER

10.1 Taking Over of the Works and Sections

10.1.1 Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Procuring Entity when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

10.1.2 The Contractor may apply by notice to the Architect for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contract or may similarly apply for a Taking-Over Certificate for each Section.

10.1.3 The Architect shall, within 30 days after receiving the Contractor's application:

a) Issue the Taking-Over Certificate to the Contract or, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor out standing work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or

b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice undert his Sub-Clause.

10.1.4 If the Architect fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 30 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on thel ast day of that period.

10.2 Taking Over of Parts of the Works

10.2.1 The Architect may, at the sole discretion of the Procuring Entity, issue a Taking-Over Certificate for any part of the Permanent Works.

10.2.2 The Procuring Entity shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Architect has issued a Taking-Over Certificate for this part. However, if the Procuring Entity does use any part of the Works before the Taking-Over Certificate is issued:

a) The part which is used shall be deemed to have been taken over as from the date on which it is used,

b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Procuring Entity, and

c) if requested by the Contractor, the Architect shall issue a Taking-Over Certificate for this part.

10.2.3 After the Architect has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.

10.2.4 If the Contractor incurs Cost as a result of the Procuring Entity taking over and/or using a part of the Works, other than such use as is specified in the Contractor agreed by the Contractor, the Contractor shall (i) give notice to the Architect and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such accrued costs, which shall be included in the Contract Price. After receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this accrued cost.

10.2.5 If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages there after for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages] and shall not affect the maximum amount of these damages.

10.3 Interference with Tests on Completion

10.3.1 If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Procuring Entity is responsible, the Procuring Entity shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.

10.3.2 The Architect shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Architect shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.

10.3.3 If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

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

10.4 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

11. DEFECTS LIABILITY

11.1 Completion of Outstanding Work and Remedying Defects

11.1.1 In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fairwear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable there after, the Contractor shall:

a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and

b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Procuring Entity on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

11.1.2 If a defect appears or damage occurs, the Contractor shall be notified accordingly by the Engineer.

11.2 Cost of Remedying Defects

11.2.1 All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

a) Any design for which the Contractor is responsible,

b) Plant, Materials or workmanship not being in accordance with the Contract, or

c) Failure by the Contractor to comply with any other obligation.

11.2.2 If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Procuring Entity, and Sub-Clause 13.3 [Variation Procedure] shall apply.

11.3 Extension of Defects Notification Period

11.3.1 The Procuring Entity shall be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

11.3.2 If delivery and/ or erection of Plant and/ or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not appl yto any defectsor damage occurring more than two years after the Defects Notification Period for the Plant and/ or Materials would otherwise have expired.

11.4 Failure to Remedy Defects

11.4.1 If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by the Engineer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

11.4.2 If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2[Costo f Remedying Defects], the Procuring Entity may (at his option):

(a) Carry out the work itself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Procuring Entity's Claims] pay to the Procuring Entity the costs reasonably incurred by the Procuring Entity in remedying the defect or damage;

(b) Requirethe Architect to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or

(c) if the defect or damage deprives the Procuring Entity of substantially the whole benefit of the Works or any major part of the Works, terminate the Contractas a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contractor otherwise, the Procuring Entity shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

11.5 Removal of Defective Work

If the defector damage cannot be remedied expeditiously on the Site and the Procuring Entity gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

11.6 Further Tests

11.6.1 If the work of remedying of any defector damage may affect the performance of the Works, the Architect may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 14 days after the defect or damage is remedied.

11.6.2 These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

11.7 Right of Access

Unti lthe Completion Certificate has been issued, the Contractor shall have such right of access to the

Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Procuring Entity's reasonable security restrictions.

11.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defecton parts of the works that have already accepted, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Architect in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

11.9 Completion Certificate

11.9.1 Performance of the Contractor's obligations shall not be considered to have been completed until the Architect has issued the Completion Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

11.9.2 The Architect shall issue the Completion Certificate within 30days after the latest of the expiry dates of the Defects Liability Period, or as soon there after as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Completionn Certificate shall be issued to the Procuring Entity.

11.9.3 Only the Completion Certificate shall be deemed to constitute acceptance of the Works.

11.10 Unfulfilled Obligations

After the Completion Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

11.11 Clearance of Site

11.11.1 Upon receiving the Completion Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.

11.11.2 If all these items have not been removed within 30 days after receipt by the Contractor of the Completion Certificate, the Procuring Entity may sell or otherwise dispose of any remaining items. The Procuring Entity shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

11.11.3 Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Procuring Entity's costs, the Contractor shall pay the outstanding balance to the Procuring Entity.

12. MEASUREMENT AN DEVALUATION

12.1 Works to be Measured

12.1.1 The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractorshall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.

12.1.2 Whenever the Architect requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

a) promptly either attend or send another qualified representative to assist the Architect in making the measurement, and
b) supply any particulars requested by the Engineer.

12.1.3 If the Contractor fails to attend or send a representative, the measurement made by the Architect shall be accepted as accurate.

12.1.4 Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agreet her ecords with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

12.1.5 If the Contractor examines and disagrees the records, and/ or does not sign them as agreed, then the Contractor shall give notice to the Architect of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Architect shall review the records and either confirm or vary them and certify the paymentofthe undisputed part. If the Contractor does not so give notice to the Architect within 14 days after being requested to examine the records, they shall be accepted as accurate.

12.2 Method of Measurement

Except as otherwise stated in the Contract:

a) Measurement shall be made of the net actual quantity of each item of the Permanent Works, and
b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

12.3 Evaluation

12.3.1 Except as otherwise stated in the Contract, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of workd one by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

12.3.2 For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contractor, if there is no such item, specified for similar work.

12.3.3 Any item of work included in the Bill of Quantities for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.

12.3.4 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:

a) The work is instructed under Clause13 [Variations and Adjustments],
b) no rate or price is specified in the Contract for this item, and
c) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

12.3.5 Each new rate or price shall be derived from any relevant rates or prices in the Contract. If no rates or prices are relevant for the new item of work, it shall be derived from the reasonable Cost of executing such work, prevailing market rates, together with profit, taking account of any other relevant matters.

12.3.6 Until such time as an appropriate rate or price is agreed or determined, the Architect shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.3.7 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price– tender price)/ tender price X 100.*

12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

a) The Contractor will incur (or has incurred) cost which, if the work had not been omitted, wouldhavebeen deemed to be covered by a sum forming part of the Accepted Contract Amount;
b) The omission of the work will result (or has resulted) in this sum not forming part of the Contract

Price; and

c) this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Architect accordingly, with supporting particulars. Upon receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

13. VARIATIONS AND ADJUSTMENTS

13.1 Right to Vary

13.1.1 Variations may be initiated by the Architect at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. No Variation instructed by the Architect under this Clause shall in any way vitiate or in validate the Contract.

13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Architect stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Architect shall cancel, confirm or vary the instruction.

13.1.3 Each Variation may include:

a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),

b) changes to the quality and otherc haracteristics of any item of work,

c) changes to the levels, positions and/ or dimensions of any part of the Works,

d) omission of any work unless it is to be carried out by others,

e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or

f) changes to the sequence or timing of the execution of the Works.

13.1.4 The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Architect instructs after obtaining approval of the Procuring Entity.

13.2. Variation Order Procedure

13.2.1 Priortoany Variation Order under Sub-Clause 13.1.4 the Architect shall notify the Contractor of the nature and form of such variation. As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

a) A description of work, if any, to be performed and a programme for its execution, and

b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 8.3 or to any of the Contractor's obligations under the Contract, and

c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Architect shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out. If the Architect decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement.

If the Architect and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 13.2.2 shall apply.

13.2.2 Disagreement on Adjustment of the Contract Price

If the Contractor and the Architecture unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Bills of Quantities or Schedule of Daywork Prices. If the rates contained in the Bills of Quantities or Dayworks Prices are not directly applicable to the specific work in question, suitable rates shall be established by the Architect reflecting the level of pricing in the Dayworks Prices. Where rates are not contained in the said Prices, the amount shall be such as is in all the circumstances reasonable, reflecting a market price. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in

consequence of the variation. The Contractor shall also be entitled to be paid:

a) The cost of any partial execution of the Work srendered useless by any such variation,
b) Thecostof making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,
c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and
d) the net effect of the Contractor's financec osts, including interest, caused by the variation.

The Architect shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

13.2.3 Contractor to Proceed

On receipt of a Variation Order, the Contractor shall forth with proceed to carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract. The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause31.3.

13.3 Value Engineering

13.3.1 TheContractor may, at anytime, submit to the Architect written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Procuring Entity of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Procuring Entity of the completed Works, or
(iv) otherwise be of benefit to the Procuring Entity.

13.3.2 The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

13.2.3 If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

a) The Contractor shall design this part,
b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and
c) if this change results in a reduction in the contract value of this part, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall behalf (50%) of the difference between the following amounts:
   i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause
   13.8 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and
   ii) the reduction (if any) in the value to the Procuring Entity of the varied works, taking account of any improvement in quality, anticipated life or operational efficiencies.

13.3.4 However, if the amount established in item 13.2.3 (c) (i) is less than amount established in item 13.2.3 (c (ii), there shall not be a fee. However, if the if the amount established in item 13.2.3 (c) (i) is more than amount established in item 13.2.3 (c (ii), it shall result in a price variation to the Procuring Entity.

13.4 Variation Procedure for Value Engineering proposal

13.4.1 If the Architect requests a proposal, prior to instructing a Variation, the Contractor shall respond in writinga s soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

a) A description of the proposed work to be performed and a programme for its execution,
b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and
c) the Contractor's proposal for evaluation of the Variation.

13.4.2 The Architect shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Project Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst a waiting a response.

13.4.3 Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Architect to the Contractor, who shall acknowledge receipt.

13.4.4 Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Architect instructs or approves otherwise in accordance with this Clause.

13.5 Paymentin Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

13.6 Provisional Sums

13.6.1 Each Provisional Sum shall only be used, in whole or inpart, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include onlysuch amounts, for the work, supplies or services to which the Provisional Sum relates, as the Architect shall have instructed. For each Provisional Sum, the Architect May instruct:

a) Work to be executed (including Plant, Materialso r services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or

b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:

i) The actual amounts paid (or due to be paid) by the Contractor, and

ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in **the Special Conditions of Contract** shall be applied.

13.6.2 The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.7 Dayworks

13.7.1 For work of a minor or incidental nature, the Architect may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

13.7.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

13.7.3 Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall delive reach day to the Architect accurate statements induplicate which shall include the following details of the resources used in executing the previous day's work:

a) The names, occupations and time of Contractor's Personnel,
b) the identification, type and time of Contractor's Equipment and Temporary Works, and
c) the quantities and types of Plant and Materials used.

13.7.4 One copy of each statement will, if correct, or when agreed, be signed by the Architect and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

13.8 Adjustments for Changes in Legislation

13.8.1 The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from

a change in the Laws of Kenya (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.

13.8.2 If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

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

13.8.4 Not withstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

13.9 Adjustments for Changes in Cost

13.9.1 In this Sub-Clause, "table of adjustment data" means the completed table of adjustment data for local and foreign currencies included in the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.

13.9.2 If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of 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 a mounts to cover the contingency of other rises and falls in costs.

13.9.3 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

Price Adjustment Formula

Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

P = A + B Im/Io

where:

P is the adjustment factor for the portion of the Contract Price payable.

A and **B** a recoefficients **specified in the SCC,** representing then on adjustable and adjustable portions, respectively, of the Contract Price payable and

I m is the index prevailing at the end of the month being invoiced and **Io**c is the index prevailing 30 days before Bid opening for inputs payable.

NOTE: The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other nonadjustable components. The sum of the adjustments for each currency are added to the Contract Price.

13.9.4 The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, itshall be determined by the Engineer. Forth is purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table) for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

13.9.5 Incases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the Central Bank of Kenya, of this relevant currency on the above date for which the index is required to be applicable.

13.9.6 Until such time as each current cost index is available, the Architect shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

13.9.7 If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices there after shall be made using either (i) each index or price applicableo n 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.

13.9.8 The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or in applicable, as a result of Variations.

14. CONTRACT PRICE AND PAYMENT

14.1 The Contract Price

14.1.1 Unless otherwise stated in the Special Conditions:

a) The value of the payment certificate shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;

b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];

c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:

   i) of the Works which the Contractor is required to execute, or

   ii) for the purposes of Clause12 [Measurement and Evaluation]; and

d) the Contractor shall submit to the Engineer, within 30 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Architect may take account of the break down when preparing Payment Certificates but shall not be bound by it.

14.1.2 Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts there for, imported by the Contractor for the sole purpose of executing the Contract shall not be exempt from the payment of import duties and taxes upon importation.

14.2 Advance Payment

14.2.1 The Procuring Entity shall make an advance payment, as an interest-free loan for mobilization and cashflow support, when the Contractor submits a guarantee in accordance with this Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the **Special Conditions of Contract.**

14.2.2 Unless and until the Procuring Entity receives this guarantee, or if the total advance payment is not stated in the Special Conditions of Contract, this Sub-Clause shall not apply.

14.2.3 The Architect shall deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate for the advance payment or its first instalment after receiving a Statement (under Sub-

Clause 14.3 [Application for Interim Payment Certificates]) and after the Procuring Entity receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the a dvance payment. This guarantee shall be issued by a reputable bank or financial institutions elected by the Contractor and shall be in the form annexed to the Special Conditions or in another form approved by the Procuring Entity.

14.2.4 The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid, but its amount shall be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 30 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.

14.2.5 Unless stated otherwise in **the Special Conditions of Contract**, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Architect in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

a) Deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and

b) deductions shall be made at the amortization rate stated in the **Special Conditions of Contract** of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.

14.2.6 If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Procuring Entity], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as thec ase may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Procuring Entity], except for Sub-Clause 14.2.7 [Procuring Entity's Entitlement to Termination for Convenience], payable by the Contractor to the Procuring Entity.

14.3 Application for Interim Payment Certificates

14.3.1 The Contractor shall submit a Statement (in number of copies indicated in the **Special Conditions of Contract**) to the Architect after the end of each month, in aform approved by the Engineer, showing in detail the amounts to which the Contractor considers itself to be entitled, together with supporting documents which shall include there porton the progress during this month in accordance with Sub-Clause4.21 [Progress Reports].

14.3.2 The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);

b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];

c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in **the Special Conditions of Contract** to the total of the above amounts, until the amount so retained by the Procuring Entity reaches the limit of Retention Money (if any) stated **in the Special Conditions of Contract**;

d) any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];

e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];

f) any other additions or deductions which may have become due under the Contractor

otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and

g) the deduction of amounts certified in all previous Payment Certificates.

14.4 Schedule of Payments

14.4.1 I fthe Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

a) The instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];

b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and

c) If these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Architect may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.

14.4.2 If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

14.5 Plant and Materials intended for the Works

14.5.1 If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

14.5.2 If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules, this Sub-Clause shall not apply.

14.5.3 The Architect shall determine and certify each addition if the following conditions a resatisfied:

a) The Contractor has:

i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and

(ii) submitted statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

and either:

b) the relevant Plant and Materials:

i) are those listed in the Schedules for payment when shipped,

ii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and

iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Architect together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Procuring Entity in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or

c) the relevant Plant and Materials:

i) are those listed in the Schedules for payment when delivered to the Site, and

ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration and appear to be in accordance with the Contract.

14.5.4 The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Architect determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

14.5.5 The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

14.6.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Architect shall, within 30 days after receiving a Statement and supporting documents, deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate which shall state the amount which the Architect fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Architect on the Statemen tif any.

14.6.2 However, prior to issuing the Taking-Over Certificate for the Works, the Architect shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated **in the Special Conditions of Contract**. In this event, the Architect shall give notice to the Contractor accordingly.

14.6.3 An Interim Payment Certificate shall not be withheld for any other reason, although:

a) if anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or

b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

4.6.4 The Architect may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Architect acceptance, approval, consent or satisfaction.

14.7 Payment

14.7.1 The Procuring Entity shall pay to the Contractor:

a) The advance payment shall be paid within 60 days after signing of the contract by both parties or within 60 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub- Clause 14.2 [Advance Payment], which ever is later;

b) The amount certified in each Interim Payment Certificate within 60 days after the Architect Issues Interim Payment Certificate; and

c) the amount certified in the Final Payment Certificate within 60 days after the Procuring Entity Issues Interim Payment Certificate; or after determination of any disputed amount shown in the Final Statement in accordance with Sub-Clause 16.2 [Terminationby Contractor].

14.7.2 Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (forth is currency) specified in the Contract.

14.8 Delayed Payment

14.8.1 If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges (simple interest) monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b) of

the date on which any Interim Payment Certificate isissued.

14.8.2 These financing charges shall be calculated at the annual rate of three percentage points above the mean rate of the Central Bank in Kenya of the currency of payment, or if not available, the inter bank offered rate, and shall be paid in such currency.

14.8.3 The Contractor shall be entitled to this payment without formal notice and certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

14.9.1 When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

14.9.2 Promptly after the latest of the expiry dates of the Defects Liability Periods, the outstanding balance of the Retention Money shall be certified by the Architect for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall behalf (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.

14.9.3 However, if any work remains to be executed under Clause 11 [Defects Liability], the Architects hall be entitled to withhold certification of the estimated cost of this work until it has been executed.

14.9.4 When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause13.8 [Adjustments for Changes in Cost].

14.9.5 Unless otherwise stated in the Special Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a Retention Money Security guarantee, in the form annexed to the Special Conditions or in another form approved by the Procuring Entity and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money.

14.9.6 The Procuring Entity shall return the Retention Money Security guarantee to the Contractor within 14 days after receiving a copy of the Completion Certificate.

14.10 Statement at Completion

14.10.1 Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Architect three copies of a Statement at completion with supporting documents, in accordance with Sub- Clause 14.3 [Application for Interim Payment Certificates], showing:

a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,
b) any further sums which the Contractor considers to be due, and
c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

14.10.2 The Architect shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

14.11 Application for Final Payment Certificate

14.11.1 Within 60 days after receiving the Completion Certificate, the Contractor shall submit, to the

Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

a) The value of all work done in accordance with the Contract, and
b) Any further sums which the Contractor considers to be due to him under the Contractor otherwise.

14.11.2 If the Architect disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Architect may reasonably require within 30 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Architect the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".

14.11.3 However, if, following discussions between the Architect and the Contractor and any changes to the draft final statement which are agreed, it be comes evident that a dispute exists, the Architect shall deliver to the Procuring Entity (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Procuring Entity (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the out standing balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

14.13.1 Within 30days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall deliver, to the Procuring Entity and to the Contractor, the Final Payment Certificate which shall state:

a) The amount which he fairly determines is finally due, and
b) After giving credit to the Procuring Entity for all amounts previously paid by the Procuring Entity and for all sums to which the Procuring Entity is entitled, the balance (if any) due from the Procuring Entity to the Contractor or from the Contractor to the Procuring Entity, as the case may be.

14.13.2 If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Architect shall request theContractor to do so. If the Contractor fails to submit an application within a period of 30 days, the Architect shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Procuring Entity's Liability

14.14.1 The Procuring Entity shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

a) in the Final Statement and also,
b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

14.14.2 However, this Sub-Clause shall not limit the Procuring Entity's liability under his in demnification obligations, or the Procuring Entity's liability in any case of fraud, deliberate default or reckless

misconduct by the Procuring Entity.

14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

a) If the Accepted Contract Amount was expressed in Local Currency only:
   i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
   ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
   iii) otherpaymentsanddeductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub- paragraph (a) (i) above;
b) payment of the damages specified in the Special Conditions of Contract, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
c) other payments to the Procuring Entity by the Contractor shall be made in the currency in which the sum was expended by the Procuring Entity, or in such currency as may be agreed by both Parties;
d) if any amount payable by the Contractor to the Procuring Entity in a particular currency exceeds the sum payable by the Procuring Entity to the Contractor in that currency, the Procuring Entity may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and
e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the Central Bank of Kenya.

15. TERMINATION BY PROCURING ENTITY

15.1 Notice to correct any defects or failures

If the Contractor fails to carry out any obligation under the Contract, the Architect may by notice require the Contractor to make good the failure and to remedy it within 30 days.

15.2 Termination by Procuring Entity

15.2.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor breaches the contract based on following circumstances which shall include but not limited to:

a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],
b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,
c) without reasonable excuse fails:
   i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
   ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 30 days after receiving it,
d) subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,
e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of theseacts or events, or
f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an induce mentor reward:
i) for doing or for bearing to do any action in relation to the Contract, or

ii) for showing or for bearing to show 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 induce mentor reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination, or

g) If the contract or repeatedly fails to remedy delivers defective work,

h) based on reasonable evidence, has engaged in Fraud and Corruption as defined in paragraph 2.2 of the Appendix B to these General Conditions, incompeting for or in executing the Contract.

15.2.2 In any of these events or circumstances, the Procuring Entity may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub- paragraph (e) or (f) or (g) or (h), the Procuring Entity may by notice terminate the Contract immediately.

15.2.3 The Procuring Entity's election to terminate the Contract shall not prejudice any other rights of the Procuring Entity, under the Contractor otherwise.

15.2.4 The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

15.2.5 After termination, the Procuring Entity may complete the Works and/ or arrange for any other entities to do so. The Procuring Entity and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

15.2.6 The Procuring Entity shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Procuring Entity, these items may be sold by the Procuring Entity in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

15.3 Valuation at Date of Termination

Assoon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.

15.4 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Procuring Entity] has taken effect, the Procuring Entity may:

a) Proceed in accordance with Sub-Clause 2.5 [Procurin Entity's Claims],

b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Procuring Entity, have been established, and/ or

c) recover from the Contractor any losses and damages incurred by the Procuring Entity and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Procuring Entity shall pay any balance to the Contractor.

15.5 Procuring Entity's Entitlement to Termination for Convenience

The Procuring Entity shall be entitled to terminate the Contract, at any time at the Procuring Entity's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 30 days after the later of the dates on which the Contractor receives this notice or the Procuring Entity returns the Performance Security. The Procuring Entity shall not terminate the Contract under

this Sub-Clausein order to execute the Works itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor]. After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

15.6 Fraud and Corruption

The Contractor shall ensure compliance with the Kenya Government's Anti-Corruption Laws and its prevailing sanctions.

15.7 Corrupt gifts and payments of commission

15.7.1 The Contractor shall not;

a) Offer or give or agree to give to any person in the service of the Procuring Entity any gift or consideration of any kind as an inducement or reward for doing or for bearing to door for having done or for borne to do any act in relation to the obtaining or execution of this or any other Contract for the Procuring Entity or for showing or for bearing to show favor or disfavor to any person in relation to this or any other contract for the Procuring Entity.

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

15.7.2 Any breach of this Condition by the Contractor or by anyone employed by him or acting on his behalf (whether with or without the knowledge of the Contractor) shall be an offence under the provisions of the Public Procurement and Asset Disposal Act (2015) and the Anti-Corruption and Economic Crimes Act (2003) of the Laws of Kenya.

16. SUSPENSION AND TERMINATION BY CONTRACTOR

16.1 Contractor's Entitlement to Suspend Work

16.1.1 If the Architect fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or Sub-Clause 14.7 [Payment],or not receiving instructions that would enable the contractor to proceed with the works in accordance with the program, the Contractor may, after giving not less than 30 days' notice to the Procuring Entity, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may bea nd as described in the notice.

16.1.2 The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Terminationby Contractor].

16.1.3 If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

16.1.4 If the Contractor suffers delay and/ori ncurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

16.3 Termination by Contractor

16.3.1 The Contractor shall be entitled to terminate the Contract if:

a) the Architect fails, within 60 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,

b) the Contractor does not receive the amount due under an Interim Payment Certificate within 90 days after the expiry of the time stated in Sub-Clause1 4.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Procuring Entity's Claims]),

c) the Procuring Entity substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract,

d) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or

e) the Procuring Entity becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.

f) the Contractor does not receive the Architect instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

16.3.2 In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Procuring Entity, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

16.3.3 The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contractor otherwise.

16.4 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clause 15.5 [Procuring Entity's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

a) cease all further work, except for such work as may have been instructed by the Architect for the protection of life or property or for the safety of the Works,

b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and

c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.

16.5 PaymentonTermination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Procuring Entity shall promptly:

a) Return the Performance Security to the Contractor,

b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and

c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. RISK AND RESPONSIBILITY

17.1 Indemnities

17.1.1 The Contractor shall indemnify and hold harmless the Procuring Entity, the Procuring Entity's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

a) Bodily injury, sickness, disease or death, of any person what so ever arising outo for 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 actor breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, or any of their

respective agents, and

b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, willful act or breach of the Contract by the Procuring Entity, the Procuring Entity's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.1.2 The Procuring Entity shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, 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], unless and to the extent that any such damage or loss is attributable to any negligence, willful actor breach of the Contract by the contractor, the contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

17.2 Contractor's Care of the Works

17.2.1 The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Procuring Entity. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Procuring Entity.

17.2.2 After responsibility has accordingly passed to the Procuring Entity, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

17.2.3 If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractorisresponsiblefor their care, from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

17.2.4 The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Procuring Entity's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Procuring Entity's Risks] below, in so far as they directly affect the execution of the Works in Kenya, are:

a) War hostilities (whether war be declared or not),

b) rebellion, riot, commotion or disorder, terrorism, sabotage by persons other than the Contractor's Personnel,

c) explosive materials, ionizing gradiation 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 traveling at sonic or supersonic speeds,

e) use or occupation by the Procuring Entity of any part of the Permanent Works, except as may be specified in the Contract,

f) design of any part of the Works by the Procuring Entity's Personnel or by others for whom the Procuring Entity is responsible, and

g) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

17.4 Consequences of Procuring Entity's Risks

17.4.1 If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Architect and shall rectify this loss or damage to the extent required by the Engineer.

17.4.2 If the Contractor suffers delay and/ or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Architect and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

(b) paymentofany such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (e)and
(g) of Sub-Clause 17.3 [Procuring Entity's Risks], Accrued Costs shall be payable.

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

17.5 Intellectual and Industrial Property Rights

17.5.1 In this Sub-Clause, "infringement" shall refer to an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" shall refer to a claim (or proceedings pursuing a claim) alleging an infringement.

17.5.2 Whenever a Party does not give notice to the other Party of any claim within 30 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

17.5.3 The Procuring Entity shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

a) An un avoidable result of the Contractor's compliance with the Contract, or
b) A result of any Works be ingused by the Procuring Entity:
   i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
   ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

17.5.4 The Contractor shall indemnify and hold the Procuring Entity harmless again stand from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

17.5.5 IfaPartyisentitledtobeindemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

17.5.6 For operation and maintenance of any plan to requipment installed, the contractor shall grant a non-exclusive and non-transferable license to the Procuring Entity under the patent, utility models ,or other intellectual rights owned by the contractor or a third party from whom the contract or has received the rights to grant sub-licenses and shall also grant to the Procuring Entity a non-exclusive and non-transferable rights (without the rights to sub-license) to use the know how and other technical information disclosed to the contract or under the contract. Nothing contained here-in shall be construed as transferring ownership of any patent, utility model, trademark, design, copy right, know-how or other intellectual rights from the contractor or any other third party to the Procuring Entity.

17.6 Limitation of Liability

17.6.1 Neither Party shall be liable to the other Party for loss of use of anyW orks, loss of profit, loss of any contractor for any in director consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Procuring Entity's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

17.6.2 The total liability of the Contractor to the Procuring Entity, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Procuring Entity's Equipment and Free- Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in **the Special Conditions of Contract**, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.

17.6.3 This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

17.7 Use of Procuring Entity's Accommodation/Facilities

17.7.1 The Contractor shall take full responsibility for the care of the Procuring Entity provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

17.7.2 If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Procuring Entity is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

18. INSURANCE

18.1 General Requirements for Insurances

18.1.1 In this Clause, "insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

18.1.2 Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Procuring Entity. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.3 Wherever the Procuring Entity is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

18.1.4 If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Procuring Entity shall act for Procuring Entity's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

18.1.5 Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

18.1.6 The relevant insuring Party shall, within the respective periods stated in **the Special Conditions of Contract** (calculated from the Commencement Date), submit to the other Party:

a) Evidence that the insurances described in this Clause have been affected, and

b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].

18.1.7 When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

18.1.8 Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

18.1.9 Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or at tempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

18.1.10 If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contractor fails to provide satisfactory evidence and copies of policies in accordance with this Sub- Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

18.1.11 Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Procuring Entity, under the other terms of the Contractor otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Procuring Entity.

18.1.12 Procuring Entity in accordance with these obligations, liabilitieso r responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

18.1.13 Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Procuring Entity's Claims] or Sub- Clause 20.1 [Contractor's Claims], as applicable.

18.1.14 The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

18.2 Insurance for Works and Contractor's Equipment

18.2.1 The insuring Party shall insure the Works, Plant, Material sand Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

18.2.2 The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

18.2.3 The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

18.2.4 Unless otherwise stated in the Special Conditions, insurances under this Sub-Clause:

a) Shal lbe effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from

the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,

c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],

d) shall also cover, to the extent specifically required in the tendering documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Procuring Entity of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h)of Sub-Clause 17.3 [Procuring Entity's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated **in the Special Conditions** of Contract (if an amount is not so stated,t his sub-paragraph (d) shall not apply), and

e) may however exclude loss of, damage to, and reinstatement of:

i) a part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),

ii) apart of the Works which is lost or damaged inorder to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,

iii) apart of the Works which has been taken over by the Procuring Entity, except to the extent that the Contractor is liable for the loss or damage, and

iv) Goods while they are not in Kenya, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

18.2.5 If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Procuring Entity, with supporting particulars. The Procuring Entity shall then (i) be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to payment of an amount equivalent to such commercially reasonable terms asthe Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

18.3 Insurance against Injury to Persons and Damage to Property

18.3.1 The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

18.3.2 This insurance shall be for a limit per occurrence of not less than the amount stated in **the Special Conditions of Contract**, with no limit on the number of occurrences. If an amount is not stated in the **Special Conditions of Contract**, this Sub-Clause shall not apply.

18.3.3 Unless otherwise stated in the Special Conditions, the insurances specified in this Sub-Clause:

a) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties,

c) shall be extended to cover liability for all loss and damage to the Procuring Entity's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and

d) may however exclude liability to the extent that it arises from:

i) the Procuring Entity's right to have the Permanent Works executed on, over, under, in or

ii) through any land, and to occupy this land for the Permanent Works,

iii) damage which is an unavoidable result of the Contractor's obligations to execute the

iv) Works and remedy any defects, and

v) a cause listed in Sub-Clause 17.3 [Procuring Entity's Risks], except to the extent that cover is available at commercially reasonable terms.

18.4 Insurance for Contractor's Personnel

18.4.1 The Contractor shall effect and maintain insurance against liability for claims, damages, losses and

expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

18.4.2 The insurance shall cover the Procuring Entity and the Architect against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractoror any othe rof the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Procuring Entity or of the Procuring Entity's Personnel.

18.4.3 The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19. FORCE MAJEURE

19.1 Definition of Force Majeure

19.1.1 In this Clause, "Force Majeure" means an exceptional event or circumstance:

a) Which is beyond a Party's control,
b) Which such Party could not reasonably have provided against before entering into the Contract,
c) which, having arisen, such Party could not reasonably have avoided or over come, 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, s olong as conditions (a) to (d) above are satisfied:

a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,
c) riot, commotion, disorder, strike or lock out by persons other than the Contractor's Personnel,
d) munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as maybeattributabletotheContractor'suseofsuchmunitions, explosives, radiation or radio-activity, and
e) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure

19.2.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

19.2.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

19.2.3 Not withstanding 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- Clause18.2 [Insurance for Works and Contractor's Equipment].

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

19.5 Force Majeure Affecting Subcontractor

If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

19.6 Optional Termination, Payment and Release

19.6.1 If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

19.6.2 Upon such termination, the Architect shall determine the value of the work done and issue a Payment Certificate which shall include:

a) theamountspayableforanyworkcarriedoutforwhichapriceisstatedintheContract;
b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity'sdisposal;
c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and
e) the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

19.7 Release from Performance

Not withstanding 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 Partyofsucheventorcircumstance:

a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and
b) The sum payable by the Procuring Entity to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

20. SETTLEMENT OF CLAIMS AND DISPUTES

20.1 Contractor's Claims

20.1.1 If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.

20.1.2 If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

20.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

20.1.4 TheContractorshallkeepsuch contemporary records as may be necessary to substantiate any claim, either on the Site or at an other location acceptable to the Engineer. Without admitting the Procuring Entity's liability, the Architect may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/ or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Architect to inspect all these records and shall (if instructed) submit copies to the Engineer.

20.1.5 Within 42days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Architect fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/ or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

a) This fully detailed claim shall be considered as interim;

b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/ or amount claimed, and such further particulars as the Architect may reasonably require; and

c) The Contractor shall send a final claim within 30 days after the end of the effects resulting from the eventor circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

20.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Architect and approved by the Contractor, the Architect shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars but shall nevertheless give his response on the principles of the claim within the above defined time period.

20.1.7 Within the above defined period of 42 days, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

20.1.8 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract.Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

20.1.9 If the Architect does not respond within the time frame defined in this Clause, either Party may consider that the claim is rejected by the Architect and any of the Parties may refer the dispute for amicable settlement in accordance with Clause 20.3.

20.1.10 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/ or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 20.3.

20.2 Procuring Entity's Claims

20.2.1 If the Procuring Entity considers itself to be entitled to any payment under any Clause of these Conditionsor otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Procuring Entity or the Architect shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Procuring Entity's Equipment and Free-Issue Materials], or for other services requested by the Contractor.

20.2.2 The notice shall be given as soon as practicable and no longer than 30 days afte rthe Procuring Entity became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

20.2.3 The particulars shall specify the Clause or other basis of the claim and shall include substantiation of the amount and/or extension to which the Procuring Entity considers itself to be entitled in connection with the Contract. The Architect shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Procuring Entity is entitled to be paid by the Contractor, and/ or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].

20.2.4 This amount may be included as a deduction in the Contract Price and Payment Certificates. The Procuring Entity shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

20.3 Amicable Settlement

Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 20.1 above should move to commence arbitrationa fter 60 days from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

20.4 Matters that may be referred to arbitration

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

a) Whether or not the issue of an instruction by the Architect is empowered by these Conditions.
b) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
c) Any dispute arising in respect risks arising from matters referred to in Clause 17.3 and Clause 19.
e) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

20.5 Arbitration

20.5.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.3 shall be finally settled by arbitration.

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

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

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

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

20.5.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Architect from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

20.5.7 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

20.5.7 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Architect shall not be altered by reason of any arbitration being conducted during the progress of the Works.

20.5.8 Thetermsofthere muneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

20.6 Arbitration with National Contractors

20.6.1 If the Contractis with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws ofKenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

i) Architectural Association of Kenya
ii) Institute of Quantity Surveyors of Kenya
iii) Association of Consulting Engineers of Kenya
iv) Chartered Institute of Arbitrators (Kenya Branch)
v) Institution of Engineers of Kenya

20.6.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

20.7 Arbitration with Foreign Contractors

20.7.1 Arbitration with foreign contractors shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.

20.7.2 The place of arbitration shall be a location specified in the **SCC;** and the arbitration shall be conducted in the language for communications defined in Sub-Clause1.4 [Law and Language].

20.8 Alternative Arbitration Proceedings

Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with

commitment to providing institutional support to the arbitral process.

20.9 Failureto Comply with Arbitrator's Decision

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 In the even tthat a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

20.10 Contract operations to continue

Notwithstanding any reference to arbitration herein,

1.1.1 the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

1.1.2 the Procuring Entity shall pay the Contractor any monies due the Contractor.

Section IX - Special Conditions of Contract

The following Special Conditions shall supplement the GCC. Whenever there is a conflict, the provisions here in shall prevail over those in the GCC.

Conditions	Sub-Clause	Data
Part A - Contract Data		
Procuring Entity's name and address	Heading	*THE THE PRINCIPAL SECRETARY,* *STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT,* *P.O. BOX 40326-00100*
Name and Reference No. of the Contract	Heading and 1.1	*WP ITEM NO. D114 NB/NB/2301 JOB NO. 10002B*
Engineers Name and address	Heading and 3.1.1	*The Works Secretary, State Department for Public Works of P.O.Box 30743-00100*
Contractor's Representative's name	4.3.1	*[insert the name of the Contractor's Representative agreed by the Procuring Entity prior to Contract signature]*
Time for Completion	1.1.	56 weeks
Defects Notification Period	1.1	Not applicable
Sections	1.1	26 weeks
Electronic transmission systems	1.3	To be agreed with the Engineer
Time for the Parties entering into a Contract Agreement	1.6	Within 14 Days after receiving the contract agreement by the contractor and before expiry of the tender validity period.
Commencement Date	8.1.1	To be agreed with the Engineer
Time for access to the Site	2.1.1	To be agreed with the Engineer
Engineer's Duties and Authority	3.1.6 (b) (ii)	Variations that exceed the accepted contract Amount shall require approval from the procurement entity
Performance Security	4.2.1	The performance security will be in the form of a performance bank guarantee in the amount of 5% of the accepted Amount in the same currency(ies) of the accepted contract amount
Delay damages for the Works	8.7 & 14.15(b)	0.025 % of the Contract price per day
Maximum amount of delay damages	8.7.1	5% of the final contract price
Provisional Sums	13.6. (b)(ii)	As determined by the Engineer
Adjustments for Changes in Cost	13.9	Cost indices as published by the Kenya National Bureau of Statistics
Total advance payment	14.2.1	Not applicable
Repayment amortization rate of advance payment	14.2.5 (b)	Not applicable
Percentage of Retention	14.3.2 (c)	10%
Limit of Retention Money	14.3.2 (c)	5 % of the Accepted Contract Amount
Plant and Materials	14.5.3(b)(i)	If Sub-Clause 14.5 applies: Plant and Materials for payment Free on Board _____ [Not Applicable].
	14.5.3(c)(i)	Plant and Materials for payment when delivered to the Site : Plant and materials to be incorporated into permanent works

Conditions	Sub-Clause	Data
Minimum Amount of Interim Payment Certificates	14.6.2	As per valuation of the work done and materials on site
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	Central Bank of Kenya average rate for base lending prevailing plus 3%
Maximum total liability of the Contractor to the Procuring Entity	17.6.2	As per applicable laws
Periods for submission of insurance: a. evidence of insurance. b. relevant policies	18.1.6	 14 days 14 days
Maximum amount of deductibles for insurance of the Procuring Entity's risks	18.2.4 (d)	As per applicable laws
Minimum amount of third-party insurance	18.3.2	As per applicable laws
The place of arbitration	20.7.2	To be agreed upon
Key Personnel names	6.9.1	To be agreed with the Engineer

SECTION X - CONTRACT FORMS

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM NO. 2 – REQUEST FOR REVIEW

FORM No. 3-LETTEROF AWARD

FORM No. 4 - CONTRACT AGREEMENT

FORM No. 5 - PERFORMANCE SECURITY [Option 1 - Unconditional Demand Bank Guarantee]

FORM No. 6- PERFORMANCE SECURITY [Option 2– Performance Bond]

FORM No. 7 - ADVANCE PAYMENT SECURITY

FORM No. 8 - RETENTION MONEY SECURITY

FORM No. 9 - BENEFICIAL OWNERSHIP DISCLOSURE FORM

FORM No 1: NOTIFICATION OF INTENTION TOAWARD OF CONTRACT

This Notification of Award shall be sent to each Tenderer that submitted a Tender and was not successful. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative

   i) Name: *[insert Authorized Representative's name]*

   ii) Address: *[insert Authorized Representative's Address]*

   iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*

   iv) Email Address: *[insert Authorized Representative's email address]*

   [IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: [*email*] on [*date*] (local time)

   This Notification is sent by (*Name and designation*) _____

3. Notification of Award

   i) Procuring Entity: *[insert the name of the ProcuringEntity]*

   ii) Project: *[insert name ofproject]*

   iii) Contract title: *[insert the name of thecontract]*

   iv) ITT No: *[insert ITT reference number from ProcurementPlan]*

   This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender by submitting a Procurement-related Complaint in relation to the decision to award the contracts.

   a) The successful tenderers

   i) Name of successful Tender _____

   ii) Address of the successful Tender _____

   _____

   iii) Contract price of the successful Tender Kenya Shillings _____

   (in words _____)

   b) The reasons for your tender being unsuccessful are as follows:

   c) OtherTenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

a) DEADLINE: The dead line to request a debriefing expires at midnight on [*insert date*] (*local time*).

b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.

c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:

i) Attention: [*insert full name of person, if applicable*]
ii) Title/position: [*insert title/position*]
iii) Agency: [*insert name of Procuring Entity*]
iv) Email address: [*insert email address*]

d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receip tof 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 a vailable from the Website www.ppra.go.ke.

You should read these documents before preparing and submitting your complaint.

e) There are four essential requirements:
   i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process and is the recipient of a Notification of Intention to Award.
   ii) The complaint can only challenge the decision to award the contract.
   iii) You must submit the complaint within the period stated above.
   iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____

Name: _____

Title/position: _____

_____

Telephone: _____

FORM NO. 2- REQUEST FOR REVIEW

FORM FOR REVIEW (r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO……OF……20……..

BETWEEN

……APPLICANT

AND

……RESPONDENT (Procuring Entity)

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

REQUEST FOR REVIEW

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

1.

2.

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

1.

2.

SIGNED ……(Applicant) Dated on……day of ……/…20……

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

SIGNED

Board Secretary

FORM NO 3: LETTER OF AWARD

letterhead paper of the Procuring Entity]

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amoun tin numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is here by accepted by…… *(name of Procuring Entity).*

You are requested to furnish the Performance Security within in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Procuring Entity: .....

Attachment: *Contract Agreement:* .....

FORM NO 4: CONTRACT AGREEMENT

THIS AGREEMENT made the day of…… 20……., between……. ……...of……. (hereinafter "the Procuring Entity"), of the one part, and_____of _____(hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Worksknownas_____should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Worksand 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) theNotification of Award
   b) the Form of Tender
   c) the addenda Nos_____(if any)
   d) the Special Conditions of Contract
   e) the General Conditions of Contract;
   f) the Specifications
   g) the Drawings*;* and
   h) the completed Schedules and any other documents forming part of the contract.

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor here by covenants with the Procuring Entity to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

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

   INWITNESS where of the parties here to have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

   Signeda nd 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 informedthat_____(hereinafter called "the Contractor") has entered into Contract No._____dated_____with (*name of Procuring Entity*)_____(the Procuring Entity as the Beneficiary), for the execution of _____(hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. Atthe request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of (*in words*),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand it self or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

4. This guarantee shall expire, no later than the……..Day of……,2……[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]*, inresponse tot he Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee." .....

[Name of Authorized Official, signature(s) and seals/stamps]

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

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM No. 6- PERFORMANCE SECURITY

[Option 2– Performance Bond]

*[**Note:** Procuring Entities a readvised to use Performance Security – Unconditiona lDemand Bank Guarantee in stead of Performance Bond due to difficulties involved in calling Bond holder to action]*

[Guarantor letterhead or SWIFT identifier code]

Beneficiary:

*[insertnameandAddressof*ProcuringEntity*]* **Date:**

_____*[Insert date of issue]*

PERFORMANCE BONDNo.:_____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond_____ as Principal (hereinafter called "the Contractor") and_____] as Surety (hereinafter called "the Surety"),are held and firmly bound unto_____] as Obligee (hereinafter called "the Procuring Entity") in the amount of__for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the _____day of_____,20_____, for_____in accordance with the documents, plans, specifications, and amendments there to, which to the extent here in provided for, are by reference made part here of and are here in after referred to as the Contract.

3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:
   a) Complete the Contract in accordance with its terms and conditions; or
   b) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make a vailable as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
   c) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions upto a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly at tested by the signature of his legal representative, this day _____of_____20____.

SIGNED ON_____on behalf of_____

By_____in the capacity of_____

In the presence of_____

SIGNED ON_____on behalf of_____

By_____in the capacity of_____

In the presence of_____

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]
[Guarantor letterhead]

Beneficiary:_____*[Insert name and Address of*

ProcuringEntity*]* **Date:**_____*[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____(hereinafter called "the Contractor") has entered into Contract No._____*dated*_____with the Beneficiary, for the execution of_____ (hereinafter called" the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____(*in words*_____) is to be made against an advance payment guarantee.

3. At the request of the Contractor, we as Guarantor, here by irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(*in words*_____)[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
   a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) Has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number_____at_____.

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, oronthe_____dayof_____,2_,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

_____

[Name of Authorized Official, signature(s) and seals/stamps]

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

---

[1] *The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance paymen tas specified in the Contract.*

[2] *Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM NO. 8 – RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary:_____*[Insert name and Address of* Procuring Entity*]*

Date:_____*[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____*[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____*[insert reference number of the contract]* dated_____with the Beneficiary, for the executionof_____*[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 upto the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[*insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]*___ (*[insert amount in words*_____*])*[1] upon receipt by us of the Beneficiary's complying demands upported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifyingthedemand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or showgrounds for your demand or the sum specified there in.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number_at_ *[insert name and address ofApplicant's bank]*.

5. This guarantee shall expire no later than the.....Day of.....2.....[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

_____

[Name of Authorized Official, signature(s) and seals/stamps]

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

[1] *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.*

[2] *Insert a date that is twenty-eight days after the expiry of retention period after the actua lcompletion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.*

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the Tenderer by meeting one or more of the following conditions:

- *Directly or indirectly holding 25% or more of the shares.*
- *Directly or in directly holding 25% or more of the voting rights.*
- *Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

Tender Reference No.:_____[*insert identification no*] Name of the Assignment:_____*[insert name of the assignment]*

to:_____*[insert complete name of Procuring Entity]*

In response to your notification of award dated_____*[insert date of notification of award]* to furnish additional information on beneficial ownership:_____*[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.

Details of Beneficial ownership

	Details of all Beneficial Owners		**% of shares a person holds in the company Directly or indirectly**	**% of voting rights a person holds in the company**	**Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)**	**Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)**
1.	Full Name		Directly--------- % of shares Indirectly--------- % of shares	Directly…….%% of voting rights Indirectly----------% of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right	1. Exercises significant influence or control over the Company body of the Company (tenderer) Yes -----No----
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality					

	Details of all Beneficial Owners		% of shares a person holds in the company Directly or indirectly	% of voting rights a person holds in the company	Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)	Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)
	Date of birth *[dd/mm/yyyy]*				held directly or indirectly?: Direct…… …	2. Is this influence or control exercised directly or indirectly? Direct……..
	Postal address					
	Residential address					
	Telephone number					
	Email address				Indirect…… ……	Indirect……
	Occupation or profession					
2.	Full Name		Directly---- ------- % of shares Indirectly-- -------- % of shares	Directly…… …….% of voting rights Indirectly------- ---% of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right held directly or indirectly?: Direct……	1. Exercises significant influence or control over the Company body of the Company (tenderer) Yes -----No---- 2. Is this influence or control exercised directly or indirectly?
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality(ies)					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					

	Details of all Beneficial Owners		% of shares a person holds in the company Directly or indirectly	% of voting rights a person holds in the company	Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer (Yes / No)	Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)
	Telephone number				…	Direct……..
	Email address					
	Occupation or profession				Indirect…… …...	Indirect……
3.						
e. t.c						

II) Am fully aware that beneficial ownership information above shall be reported to the Public Procurement Regulatory Authority together with other details in relation to contract awards and shall be maintained in the Government Portal, published and made publicly available pursuant to Regulation 13(5) of the Companies (Beneficial Ownership Information) Regulations, 2020.(Notwithstanding this paragraph Personally Identifiable Information in line with the Data Protection Act shall not be published or made public). *Note that Personally Identifiable Information (PII) is defined as any information that can be used to distinguish one person from another and can be used to deanonymize previously anonymous data. This information includes National identity card number or Passport number, Personal Identification Number, Date of birth, Residential address, email address and Telephone number.*

III) In determining who meets the threshold of who a beneficial owner is, the Tenderer must consider a natural person who in relation to the company:

(a) holds at least ten percent of the issued shares in the company either directly or indirectly;

(b) exercises at least ten percent of the voting rights in the company either directly or indirectly;

(c) holds a right, directly or indirectly, to appoint or remove a director of the company; or

(d) exercises significant influence or control, directly or indirectly, over the company.

IV) What is stated to herein above is true to the best of my knowledge, information and belief.

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]

Bidder Official Stamp

ANNEX 1

SPECIFICATIONS AND BILLS OF QUANTITIES

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GENERAL MECHANICAL SPECIFICATIONS

GENERAL MECHANICAL SPECIFICATION

CLAUSE	DESCRIPTION	PAGE
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GENERAL MECHANICAL SPECIFICATIONS

1.01 General

This section specifies the general requirement for plant, equipment and materials forming part of the Sub-contract Works and shall apply except where specifically stated elsewhere in the Specification or on the Contract Drawings.

1.02 Quality of Materials

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

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

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

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

Defective equipment or that damaged in the course of installation or tests shall be replaced as required to the approval of the Engineer.

1.03 Regulations and Standards

The Sub-contract Works shall comply with the current editions of the following:

a) The Kenya Government Regulations.

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

1.04 **Electrical Requirements**

Plant and equipment supplied under this Sub-contract shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied, they shall be complete with a main isolator. The supply power up to and including local isolators shall be provided and installed by the Electrical Sub-contractor. All other wiring and connections to equipment shall form part of this Sub-contract and be the responsibility of the Sub-contractor.

The Sub-contractor shall supply three copies of all schematic, cabling and wiring diagrams for the Engineer's approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents described in the Kenya Power and Lighting Company (KPLC) By-laws.

All electrical plant and equipment supplied by the Sub-contractor shall be rated for the supply voltage and frequency obtained in Kenya, that is 415 Volts, 50Hz, 3-Phase or 240Volts, 50Hz, 1-phase.

Any equipment that is not rated for the above voltages and frequencies shall be rejected by the Engineer.

1.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimise the possibility of damage and to prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.
Adequate measures shall be taken by the Sub-contractor to ensure that plant and equipment do not suffer any deterioration during storage.

Prior to installation all piping and equipment shall be thoroughly cleaned.

If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation, the Sub-contractor shall replace this equipment at his own cost.

1.06 **Site Supervision**

The Sub-contractor shall ensure that there is an English-speaking supervisor on the site at all times during normal working hours.

1.07 **Installation**

Installation of all special plant and equipment shall be carried out by the Subcontractor under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent in accordance with the best standards of modern practice and to the relevant regulations and standards described under Clause 2.03 of this Section.

1.08 **Testing**

1.08.1 General

The Sub-contractor's attention is drawn to Part 'C' Clause 1.38 of the "Preliminaries and General Conditions".

1.08.2 Material Tests

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

For materials where no B.S. Specification exists, tests are to be made in accordance with the best modern commercial methods to the approval of the Engineer, having regard to the particular type of the materials concerned.
The Sub-contractor shall prepare specimens and performance tests and analyses to demonstrate conformance of the various materials with the applicable standards.

If stock material, which has not been specially manufactured for the plant and equipment specified is used, then the Sub-contractor shall submit satisfactory evidence to the Engineer that such materials conform to the requirements stated herein in which case tests of material may be partially or completely waived.

Certified mill test reports of plates, piping and other materials shall be deemed acceptable.

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.

The Sub-contractor shall give two weeks' notice to the Engineer of the manufacturer's intention to carry out such tests and inspections.
The Engineer or his representative shall be entitled to witness such tests and inspections. The cost of such tests and inspections shall be borne by the Subcontractor.
Six copies of all test and inspection certificates and performance graphs shall be submitted to the Engineer for his approval as soon as possible after the completion of such tests and inspections.

Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Sub-contractor's own risk and should the test and inspection certificates not be approved; new tests may be ordered by the Engineer at the Sub-contractor's expense.

1.08.4 Pressure Testing

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

Any pipe work that is buried or concealed before witnessed pressure tests have been carried out shall be exposed at the expense of the Sub-contractor and the specified tests shall then be applied.

The Sub-contractor shall prepare test certificates for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

1.09 Colour Coding

Unless stated otherwise in the Particular Specification all pipe work shall be color coded in accordance with the latest edition of B.S 1710 and to the approval of the Engineer or Architect.

1.10 Welding

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 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:

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

b) General Welding
All welding of mild steel components other than pipework shall comply with the general requirements of B.S. 1856.

1.10.4 Welders Qualifications

Any welder employed on this Sub-contractor shall have passed the trade tests as laid down by the Government of Kenya.

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

PARTICULAR MECHANICAL SPECIFICATIONS

PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

1.1 GENERAL

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

1.2 MATERIALS AND STANDARDS

1.2.1 Pipework and Fittings

Pipework materials are to be used as follows:

a) **Galvanized Steel Pipework**

Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with B.S. 1387 Medium Grade, with tapered pipe threads in accordance with B.S. 21. All fittings shall be malleable iron and manufactured in accordance with B.S. 143.

Pipe joints shall be screwed and socketed and sufficient coupling unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

Galvanized steel pipe work, 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant. All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter under Section 'C' of the Specification.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and B.S. 143 respectively.

b) **Copper Tubing**

All copper tubing shall be manufactured in accordance with B.S. 2871 from C.160 'Phosphorous De-oxidized Non-Arsenical Copper' in accordance with B.S. 1172.
Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be with compression fittings manufactured in accordance with B.S. 864.

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

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

c) **P.V.C. (Hard) Pressure Pipes and Fittings**

All P.V.C. pipes and fittings shall be manufactured in accordance with B.S. 3505: 1968.

Jointing

The method of jointing to be employed shall be that of solvent welding, using the pipe and manufacturer's approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion.

Testing

Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure of the class of pipe used. Testing shall be carried out as soon as practical after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipe slowly to avoid risk of damage due to surge.

d) A.B.S. Waste System

Where indicated on the Drawings and Schedules, the Sub-contractor shall supply and fix A.B.S. waste pipes and fittings.
The pipes, traps and fittings shall be in accordance with the relevant British Standards, including B.S. 3943, and fixed generally in accordance with manufacturer's instructions and B.S. 5572: 1978.
Jointing of pipes shall be carried out by means of solvent welding, the manufacturer's instructions and B.S. 5572: 1978.
Jointing of pipes shall be carried out by means of solvent welding. The manufacturer's recommended method of joint preparation and fixing shall be followed.

Standard brackets, as supplied for use with this system, shall be used wherever possible. Where the building structure renders this impracticable the Sub-contractor shall provide purpose made supports, centers of which shall not exceed one meter.

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

e) PVC Soil System

The Sub-contractor shall supply and fix PVC soil pipes and fittings as indicated on the Drawings and Schedules.

Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer's instructions and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer whose fixing instructions shall be strictly adhere to.
Connections to WC pans shall be effected by the use of a WC connector, gasket and cover, fixed to suit pan outlet.

Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres.

The Sub-contractor shall be responsible for the joint into the Gully Trap on Drain as indicated on the Drawings.

1.2.2 Valves

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

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

b) Gate Valves

All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.
All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.
The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

c) Globe Valves

All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061.
The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

1.2.3 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 Littles Hampton, Sussex, England.
The trade name for traps manufactured by this company is 'Grevak'.

1.2.4 Pipe Supports

a) General

This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.
The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.
The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) Steel and Copper Pipes and Tubes

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

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

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

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

c) Expansion Joints and Anchors

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification. Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The Sub-contractor when arranging his piping shall ensure that no expansion movements are transmitted directly to connections and flanges on pumps or other items of plant.

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

1.2.5 Sanitary Appliances

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

1.2.6 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.

1.3 INSTALLATION

1.3.1 General

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The Sub-contractor shall be responsible to the Main Contractor for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

1.3.2 Above Ground Installation

a) Water Services

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

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

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

Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided. Screwed piping shall be installed with sufficient number of unions to facilitate easy removal of valves and fittings, and to enable alterations of pipework to be carried out without the need to cut the pipe.

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

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

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

b) Sanitary Services

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

The Sub-contractor shall be responsible for ensuring that all ground waste fittings are discharged to a gully trap before passing to the sewer via a manhole.

The Sub-contractor shall provide all necessary rodding and inspection facilities within the draining system in positions where easy accessibility is available.

Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available.
The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The Sub-contractor shall be responsible for sealing the roof after installation of the stacks.
The open end of each stack shall be fitted with a plastic coated or galvanised steel wire guard. Access for rodding and testing shall be provided at the foot of each stack.

c) Sanitary Appliances

All sanitary appliances associated with the Sub-contract works shall be installed in accordance with the best standard of modern practice as described in C.P. 305 to the approval of the Engineer.

1.4 TESTING AND INSPECTION

1.4.1 Site Tests – Pipework Systems

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.
If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.
During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

The Sub-contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced at the Sub-contractor's expenses.

b) Above Ground Soil Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.
Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted.
Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.
In all respects, tests shall comply with the requirements of B.S. 5572.

1.4.2 Site Test – Performance

Following satisfactory pressure test on the pipework system operational tests shall be carried out in accordance with the relevant B. S. Code of practice on the systems as a whole to establish that special valves, gauges, control, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer.
All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe "sweating", due to condensation will cause nuisance.

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

i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.

ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

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

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

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

Pressure gauges should be recalibrated before the tests.

The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

1.5: STERILISATION OF COLD WATER SYSTEM

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

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

PARTICULAR SPECIFICATION FOR FIRE DETECTION AND SUPPRESSION INSTALLATIONS: PORTABLE FIRE EXTINGUISHERS, HOSE REEL AND IG-55 AUTOMATIC FIRE SUPPRESSION INSTALLATIONS

I. PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER INSTALLATIONS

1.1 GENERAL

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers and Boosted Hose Reel System. The Subcontractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the Sub-contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

1.2 SCOPE OF WORKS

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

1.3 PORTABLE WATER FIRE EXTINGUISHERS

These shall be 9-litre water filled cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

a) Method of operation.
b) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.
c) Name and address of the manufacturer or responsible vendor.
d) The nominal charge of the liquid in imperial gallons and litres.
e) The liquid level to which the extinguisher is to be charged.
f) The year of manufacture.
g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 psi.).
h) The number of British Standard 'B.S' 1382 or B.S. 5423: 1977.

1.4 PORTABLE CARBON DIOXIDE (CO_2) FIRE EXTINGUISHERS

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 3326: 1960 and B.S. 5423: 1977.
The body of extinguisher shall be a seamless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.

The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of 206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers: -

a) The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.
b) Method of operation.
c) The words "Re-charge immediately after use".
d) Instructions for periodic checking.
e) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
f) The manufacturers name or identification markings

1.5 PORTABLE DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470: 1972 and shall be suitably protected against corrosion. The dry powder charge shall be not-toxic and retain it s free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.
The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant. Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information:

a) The word "Dry Powder Fire Extinguisher"
b) Method of operation in prominent letters.
c) The working pressure and the weight of the powder charge in Kilogramme.
d) Manufacturers name or identification mark
e) The words "RECHARGE AFTER USE" if rechargeable type.
f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.
g) The year of manufacture.
h) The Pressure to which the extinguisher was tested.
i) The number of this British Standard BS 3465 or BS 5423: 1977.
j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be supplied with the refill.

1.6: PORTABLE AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications: -

Cylinder: to B.S. 1449
Necking: to be 76mm outside diameter steel EN 3A $2^3/_4$ X 8TPI female thread.
Head cap: to be plastic moulding acetyl resin.
CO_2 Cylinder: to be 75gm P.V.C coated.
Internal Finish: to be polythene lining on phosphate coating.
External finish: To be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

1.7: FIRE BLANKET

The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm and shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket.

II. BOOSTED HOSE REEL SYSTEM

1.8.1: General

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

1.8.2: Hose Reel Pumps

The fire hose reel pumps shall consist of a duplicate set of multi-line centrifugal pumps from approved manufacturers. The pumps shall be capable of delivering 2.27 lit/sec at a running pressure of 2 bars.
The pump casing shall be of cast iron construction with the impeller shaft of stainless steel with mechanical seal.

1.8.3: Control Panel

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

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

(a) 'On' push button for setting the control panel to live. **G-3**
(b) Green indicator light for indicating control panel live.
(c) Duty / Stand-by pump auto change over.
(d) Duty pump run green indicator light.
(e) Stand-by pump run green indicator light.
(f) Duty pump fail red indicator light.
(g) Stand-by pump fail red indicator light.
(h) Low water condition pump cut-out with red indicator light.

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

1.8.4: Hose Reel

The hose reel to the installation shall consist of a recessed, swing-type hose reel as Angus Fire Armour Model III or from other approved manufacturers.
The hose reel shall comply with B.S. 5274: 1975 and B.S 3161: 1970 and is to be installed to the requirements of C.P. 5306 Part 1: 1976.

The hose reel shall be supplied and installed complete with a first-aid Non-kinking hose 30 meters long with a nylon spray / jet / shut-off nozzle fitted. A screw down chrome - plated globe valve to B.S 1010 to the inlet to the reel is to be supplied.
The orifice to the nozzle is to be not less than 4.8mm to maintain a minimum flow of 0.4 lit / sec to jet.

The hose reels shall be installed complete with electro-galvanised cabinet recessed on the wall.
The hose reels shall be installed at 1.5 metres centre above the finished floor level in locations shown in the contract drawings.

1.8.5 Pipe Work

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

1.8.6 Pipe Fittings

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

1.8.7 Non-return Valves

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

1.8.8 Gate Valves

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

1.8.9 Sleeves

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

1.8.10 Earthing

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

1.8.11 Finish Painting

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

1.8.12 Testing and Commissioning

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

1.8.13: Instruction Period

The Sub-contractor shall allow in his contract sum for instructing of the use of the equipment to the Client's maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.
The period of time required shall be stipulated by the Client but will not exceed two days in which time the Client's staff shall be instructed on the operation and maintenance of the equipment.

1.8.14: Signage-Fire Instruction /Fire Exit

1.8.14.1 Fire Instruction Notice

Print fire instruction on the Perspex plates with White Colour
Background measuring 510mm length x 380mm width x 4mm thick as follows;

FIRE INSTRUCTION NOTICE
In the event of fire;
1. Raise the alarm by actuating the nearest alarm system point, Sound Siren /gong or **Shout Fire** 2. Attack fire using the nearest available equipment 3. Call nearest fire Brigade or Police 999 and inform your switchboard (PABX) Operator 4. Ensure that all personnel not involved in fire fighting evacuation to safety outside the building. 5. Close but **DO NOT LOCK** doors behind as you leave. 6. Evacuate the building using stairs or fire escapes. Do not use Lifts/Escalators. Walk calmly. Avoid panic. Do not stop or return for personal belongings. 7. Assemble as per floor outside the building for roll call.

1.8.14.2 Fire Exit Sign

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

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

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

1.8.14.3 Hose Reel Label

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

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

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

III. PARTICULAR SPECIFICATIONS FOR IG-55 AUTOMATIC FIRE SUPPRESSION SYSTEMS

Note: To all Bidders

ALTERNATIVE OFFERS FOR FIRE SUPPRESSION GASES OTHER THAN IG-55 PROPOSED BY ENGINEER SHALL BE ANALYSED FOR COMPLIANCE.

Bidders **MUST** give schematics and technical compliance documents along with their bids as this will be evaluated as part of the Technical Evaluation on page ME/2.

PARTICULAR SPECIFICATIONS FOR IG-55 FIRE SUPPRESSION SYSTEM

1.1 General

The IG-55 shall be used to extinguish fires in the SERVER ROOMS, all as specified herein and as shown on contract drawings. Each store measures approximately 4 * 4 * 3 m high. It shall be the responsibility of the bidder to confirm these dimensions at site before tendering.

The gas shall be stored under pressure in liquefied form inside cylinders and piped to fire protected areas. Each IG-55 system in a given zone shall be supplied complete with its control Unit that shall receive the signal from smoke detector or break glass and automatically release the gas after switching off the Ventilation system and sounding an alarm bell. The fire detection system in all areas where IG-55 gas pipe is not installed shall be supplied and installed by the Electrical Sub-Contractor but the Sub-Contractor shall liaise with him and extend detection signal outputs into the Master Alarm Control Panel in the Security Office.

1.1.1 The Design and installation shall be made in accordance with these specifications, drawings, all applicable National Fire Protection Association Standards and the requirements of the local authority having jurisdiction.

1.1.2 The fire suppression systems shall be designed by competent personnel who are trained and authorized by the equipment manufacturer for design of total flooding IG-55systems and the integrated detection systems.

Working Drawings shall be in sufficient detail to indicate the type, size, and arrangement of component materials and devices; and the dimensions needed for installations and correlation with other materials and equipment.

All Working Drawings shall be submitted for review and approval prior to installation.

1.1.3 The Sub-Contractor shall furnish detailed literature outlining the operation, recharge and service of the system. Maintenance procedures for the owner shall be outlined. In addition, the Sub-contractor shall furnish the equipment manufacturer's recommended spare parts lists with information regarding availability and ordering instructions.

1.1.4. The sub-contractor shall utilize an equipment manufacturer that will provide a 12 month warranty against false discharges when all conditions of the equipment manufacturer are fulfilled for this type of warranty. Details of this warranty be furnished upon request.

1.2 SYSTEM ARRANGEMENT

1.2.1. IG-55 fire suppression system shall be of the engineered, permanently piped, fixed nozzle type wit all pertinent components of the same manufacturer. The system shall have one common bank of cylinders to discharge into either of the two rooms at a time through the use of selector valves. All agent storage containers shall be centrally located as vertical, free-standing cylinders with wall mounted retaining brackets. Where multiple cylinders are required for the same hazard, a common manifold should be employed.

Manifolded cylinders shall employ a flexible discharge hose to facilitate installation and system maintenance.Each cylinder on a manifold shall also include an agent check valve installed to the manifold inlet.

1.2.2 Detection system shall be of the engineered type, suitable for direct interface with the IG-55 fire suppression system. All pertinent components shall be of the same manufacturer or approved for use with the control/release panel.

Detection network shall be cross-zoned or counting zone for positive and accurate response to fire condition.

For each hazard, both Ionization and Photoelectric type smoke detectors shall be used to provide automatic input to the control panel.
In addition, manual pull station(s) shall be provided for the direct electric release of the IG-55 Fire Suppression System.

The sequence of operation for the control panel shall be as follows:-

i) Activation and annunciations of general alarms.
ii) Activation of shutdown and / or startup of auxiliary function.
iii) Activation and annunciation of the time delay
iv) Release of agent.

Alarm bells shall be used for general alarm for visual/ audible signal of system discharge.
An adjustable time delay shall be used prior to IG-55 release (with) manual abort capability.

1.3 DESIGN PARAMETERS – IG-55

1.3.1 Design of the total flooding IG-55 system shall be based upon the enclosure being sufficiently tight against agent leakage with all ventilation shut down and / or fire dampered or provide for static air condition upon discharge.

Agent quantity calculations shall be determined from dimension furnished on the construction drawings and in this specification for a design concentration of 38 % at the minimum anticipated hazard temperature of 20 ^{0} C.

Calculation for the maximum design concentration shall be based upon maximum anticipated hazard temperature of _____ ^{0} F (_____ ^{0} C).

When applicable, agent quantity shall be adjusted for:

i) Altitudes of more than (915m) above sea level.

ii) Non-flooded false ceiling volume. iii) Multiple hazards from a common agent supply. iv) Manufacturer standard tanks and fill increments

v) Duct volume for HVAC system.

The system shall be designed to discharge the calculated agent quantity in a nominal 60 second period.

5.3.2 Nozzle spacing shall be in accordance with the listed approved coverage for each nozzle type.

Maximum nozzle coverage shall be:-

i) 90 0 Pattern (1 orifice): (95.12m 2) ii) 180* Pattern (2 orifice) : (190.25m 2)

iii) 360 0 Pattern (4 orifice : 380.51m 2)

In all cases, the need for additional nozzle shall be considered based upon site conditions and manufacturer's recommendations.

1.3.4 Hydraulic calculations for each system shall be used upon two-phase flow equations for unbalanced systems as defined by NFPA –2001 regardless if a single nozzle or blanced piping network is used.

When IG-55 system serves separate multiple hazards, the following design considerations shall be followed.

i) IG-55 agent flow splitting shall be done in horizontal plane.

ii) In a multiple nozzle system, the ration of the system flow rate to the flow rate at any nozzle shall not be greater than 30: 1.

iii) Thru tee/side tee arrangements, flow in the thru direction shall be a maximum of 90% and a minimum of 66%. Flow in the side direction shall be maximum of 33% and a minimum of 10%.

iv) Bullhead tee configuration shall maintain the flow split between 33% and 55% in each flow direction.

Computerized verification of hydraulic calculations shall be submitted for each IG-55 system and include the following data as a minimum.

a) Quantity if Agent a Per Nozzle.
b) Tyoe of Nozzle.
c) Pressure at Nozzle (bar)
d) Nozzle Body Nominal Size (mm).
e) Nozzle Drill Size (64'/inch).
f) Numnber and size of Tanks.
g) Tank Fill Weight.
h) Tank Filling Density.
i) Total Agent Weight.
j) Pipe Size Per Pipe Section.
k) Pipe schedule Per Pipe Section.
l) Number, Size and Type of Fitting Per Pipe Section
m) Actual Length Per Pipe Section (m).
n) Equivalent Length Per Section (m).
o) Elevation Change Per Pipe Section (m).
p) Piping Volume (m^3).
q) Discharge Time (sec).
r) Percent of Agent in Pipe.
s) Pressure at Start of Network (bar)
t) Pressure Available at the Start and End of Each Pipe Section (bar).
u) Density at the Start and End of Pipe Section (kg/m^3).
v) Flow rate Per Pipe Section (litres/sec.).
w) Pressure Drop Per Pipe Section (N/m^2)
x) Y and Z Factors at the Start and End of Each Pipe Section.

1.3.5 The contractor shall provide data to indicate the free venting area required per NFPA2001 for each hazard volume.

1.3.6 DESIGN PARAMETERS – DETECTION

1.3.6.1 The design of the detection/control system shall be based on a clean, vibration free, electrical non-hazardous environment

1.3.6.2 As a minimum detector spacing shall be based upon NFPA recommended practices for ceiling construction, air flow and manufacturer recommendations.
At least one smoke detector of each type (ionization and photoelectric) shall be used in each protected area.
Where multiple detectors are sued, detection shall alternate such that ionization are adjacent to photoelectric.

1.3.6.3 Unless otherwise stated on the drawings manual pull station(s) shallbe located at all points of aggress from the protected area.
otherwise stated on the drawings at least one alarm device shall be located within the protected area for the general alarm function.

Battery capacity shall be sufficient to permit normal non-alarm condition for 24 hours with subsequent general alarm for 5 minutes after loss of primary line power.

1.3.7 EQUIPMENT AND MATERIAL

1.3.7.1 General

All materials and equipment furnished by the contractor shall be of new, unused , and undamaged condition in strict accordance with the requirement of this section.Equipment shall be required to meet the following standards;ISO 14520,UNE 23575, NFPA 2001 AND CEA 4008.

Where items are specified to a nationally recognized standard of manufacture , any component meeting this standard will be considered equal.

Manufacturer's equipment other than as specified shall be bid as an alternate with the base as an alternate with the base bid furnished as specified.

All equipment and materials shall only be used for their intended application, in locations for which they were designed, and installed in accordance with the manufacturer's instructions and /or recognized standard trade practice.

1.3.7.2. Pipe Material – IG-55bar System.

IG-55 system piping shall be of non –combustible materials having physical and chemical characteristics such that its integrity under stress can be predicted with reliability. Materials other than listed below , such as stainless steel or nonferrous piping or tubing , may be used if the materials satisfy the applicable requirements of NFPA-2001.

As a minimum, piping materials shall be black galvanized seamless steel pipe conforming To BS specifications and capable of 65 bar operating pressure (ASTM Grade A-106B). Under no conditions shall ordinary cast iron pipe, steel pipe or non- metallic pipe be used.

IG-55 system piping joints shall be suitable for the design conditions and shall be selected with consideration of joint tightness and mechanical strength.

As a minimum, fittings shall be black galvanized ANSI 300lb. Class malleable iron, ASTM A197,m ANSI 300lb. Class ductible iron, ASTM A-395; or steel ASTM A-234.
Ordinary cast iron fittings shall not be permitted. Piping shall be installed accordance with good commercial practice to the appropriate codes, securely supported with Listed hangers, and arranged with close attention to the design layout since deviations may alter the design flow performance as hydraulically calculated.

All Piping must be reamed, blown clear, and swabbed with appropriate solvent to remove mill varnish and cutting oils before assembly. The piping shall also finished off with two coats of red paint after testing.

Muilti- outlet fittings other than tees shall not be permitted.

Assembly of all joints shall conform to the appropriate sandards. Threaded pipe joints shall utilize Teflon tape applied to male thread s only.

1.3.7.3 Agent Storage Tank

IG-55 agent storage containers shall be of welded steel construction in accordance with D.O.T Specification 4BW500 OR 4ba500 and finished in (baked red enamel) (red epoxy) paint.

Tank assemblies shall be filled with IG-55 pressurized to 200 bar at (21 ^{0}C).

Filling of the tank assembly shall be by a factory authorized U.L listed filing station. Initial filling and recharge shall be done in accordance with the manufacturer's established procedures and shall not require replacements components foe normal service.

The size and fill weights of all cylinders shall le based on computer verified system design requirements and shall be of the following nominal sizes:_ i) 67 kg ,ii) 80 kg iii) 140kg

iv) Nominal 270kg tank assembly shall be equipped with an internal liquid level measuring rod, marked in ¼ inch increments to allow direct reading of the liquid level and conversation to the weight of IG-55 within the tank.

Tank assembles shall be vertical, free standing modules employing suitable wall mounted retaining brackets. Tank assemblies shall be listed or approved to perform in the temperature range of – 650F tp 1300F (-540C to 540C).

Aluminium name plates indicating manufacturer's name and part number , agent fill weight, total charged weight date of fill, and U.L. Listed fill station case shall be permanently bonded to each tank.

Each tank assembly shall have the means to accommodate lifting devices to facilitate weighing removal and replacing.

Tank assembly shall include a low pressure switch that operates at approximately 225 (1551kpa) to facilitate continuous supervisions of tank pressure.

1.3.7.4 Tank Valve

Agent storage tank assemblies shall include an integral, high flow valve assembly connected to the tank by a machined thread and sealed by an 0-ring.

Valve outlet sizes shall be based on the nominal tank capacity with a a one inch size for 18,33,54 and 72 pound assemblies, and three inch for 600 pound assemblies.

The valve design shall be of the differential pressure type which utilizes tank pressure to seal the valve assembly. The valve shall be compatible with separate, removable, stackable type actuators for electric, pneumatic, and/or manual actuation.

Operation of the valve by the stackable type actuator shall be such actuation. Operation of the valve by the stackable type actuator shall be such that pressure is relieved from the upper chamber of the valve causing the valve to open. Valves shall be forged brass construction with an O-ring sealed brass spool incorporating the main elastomeric seal surface.

The valve assembly shall include recessed pressure gauge 0 to 250 bar, overpressure safety relief disc assembly, normally pressurized connection port for an optional low pressure switch, normally unpressurized connection port used as pneumatic source for a salve cylinder valve actuation, and brass shipping caps on exposed thread connection.

When pneumatically operated main/reserve systems are used, pilot valves shall be equipped with actuation isolators. All 3 inch valve assemblies shall be equipped with a removable pressure gauge feature. This gauge shall be capable of being removed from the valve assembly when the tank is pressurized.

1.3.7.5 Tanks Brackets

Each IG-55 tank shall be furnished with a stainless steel, two part, strap type retaining bracket designed foe installation with standard 15/8n continuous slotted channel.

1.3.7.6 Valve Actuators

IG-55 valve actuators shall be of brass construction stackable design, with swivel connections to allow removal of actuators for maintenance or testing.

Operation of actuators shall nor require replacement of components. No electro-explosive devices may be used to actuate the valve assembly.

Electric actuators shall be of the continuous duty solenoid type with a maximum power requirement of 7 watts for 24VDC operation.

Pneumatic actuators shall be designed to operate from either IG-55 tank pressure with appropriate interconnections or by nitrogen pressure from a separate listed or approves source.

Manual override actuators shall be designed to attach to electric actuator or directly to the valve assembly and permit manual operation of the pilot IG-55 tank assembly. This actuator shall incorporate a detent action with a red phenolic palm bottom and safety ring pin.

Where actuation hose (s) are required stainless steel braid covered types shall be used. All actuators shall be U.L. Listed or F .M Approved for use with the High Flow IG-55 Valve .

1.3.7.7 Discharge Hose/Check Valve

When manifolding, all tank assemblies shall include a flexible discharge hose and check valve for connection to manifold inlet.

Nominal one and two inch hosed shall be elastomeric with standard NPT male threads and be compatible with a the manufacturer's check valve.

Nominal three inch hosed shall be braided stainless construction and incorporate and intergral check valve provising a 1 ½ inch height adjustment to compensate for the height variance between cylinder and manifold connection.

A swivel connection at valve outlet shall be provided on all tank installation to facilitate removal for service and testing.

All Hose/Check Valves shall be U.L Listed or F.M Approved for use with the High Flow IG-55 "Valve .

1.3.7.9 Discharge Nozzles

IG-55 discharge nozzles shall be of one piece (brass) construction sized to provide flow rates in accordance with system design hydraulics.

Orifice (s) shall be machined in the nozzle body to provide a horizontal discharge in

90 ^{0}, 180 ^{0}, or 360 ^{0} patterns based upon the approved coverage arrangements. Separate, interchangeable orifice plates are not acceptable.

Nozzles shall be permanently marked with the manufacturer's part number, number of orifice and orifice code. The nozzle shall be threaded directly to the discharge piping without the use of special adaptors.

Nozzles shall be U.L Listed or F.M Approved.

1.3.7.10 Warning Signs

Etched aluminium Warning Signs shall be provided at all Entrance and Exits of the protected area.

Entrance sign shall read: **"WARNING \DO NOT ENTRE ROOM WHEN ALARM SOUNDS, IG-55 BEING RELEASED."**

Exit sign shall read: **" WHEN ALARM SOUNDS, VACATE AT AONCE, IG-55 BEING RELEASED.."**

1.3.8 EQUIPEMENT AND MATERIAL –ELECTRICAL

1.3.8.1 General Materials

All electrical trunkings and conduits shall be employed in accordance with applicable codes and intended use and contain only those electrical circuits associated with the fire detection and control system and shall not contain any circuit that is unrelated to the system.

Unless specifically provided otherwise in each case, all conductors shall be enclosed in steel conduit, rigid or thin walled as conditions dictate, except in computer room where they shall be PVC conduit concealed in building fabrics electrically hazardous classification shall be observed and any equipment for materials installed shall be must meet or exceed the requirements of service.

All wiring shall be of the proper size to conduct the circuit current shall not smaller than No.18 AWG unless other wise specified for a given purpose . Wire that has scrapes nicks, gouges, or crushed insulation shall not be used.

The use of aluminium wire is strictly prohibited.

Splicing of circuits shall be kept to a minimum and are only to be found in an electrical device suited for the purpose.

Wire spliced together shall have the same colour insulation. Wire splices shall be made with appropriate devices suited foe the purposes.

All wire terminations shall be made with crimp terminals unless the device at the termination is designed foe bare wire termination.

All electrical circuits shall be numerically tagged with suitable devices at its terminating point and/ or splice. All circuits numbers shall correspond with the installation drawings.

The use of coloured wires is encouraged. White coloured wire shall be used exclusively for the identification of the neutral conductor of an alternating current circuit.

Green coloured wire shall be used exclusively for the identification of the earth ground conductor of an AC and DC circuit.

1.3.8.2 Control Panels – General

All control panels shall be F.M Approved and be utilized with listed or approved operating devices ans shall be capable of the following features:

i) Ground Fault Indication
ii) Supervised Detection Circuits (s).
iii) Supervised Alarm Circuit
iv) Supervised Release Circuit
v) Supervised Manual Pull Circuit
vi) Supervised Line Power Circuit
vii) Alarm Overrides Trouble Logic.
viii) Battery Standby
ix) Front Panel Indicating Lamps
x) Key Lock Steel Enclosure
xi) Programmable Time Delay
xii) Programmable Detection Logic
xiii) Prioritized Trouble Logic
xiv) Solid State Integrated circuitry

1.3.8.3 Control Panel – Dual Zone Unit

In addition to the general requirements foe control panels, dual zone control units shall meet the requirements of this section.

The control unit shall consist of power supply, programmable zone actuation, five supervised circuits and six auxiliary relays.

The internal power supply shall operate from 240V 50Hz A.C power supply.

The control unit shall provide provisions foe housing its own set of "on-line" float charged emergency batteries within the enclosure.;

The control unit shall provide two supervised detection (input circuits) programmable for:

i) Independent Zoning

ii) Priority Zoning

iii) Cross-Zoning

A supervised dedicated manual pull circuit designated for immediate operation of the release circuit shall be provided.

Abort function (if used) shall be programmed for (immediate Release) (timed release) after abort.

A programmable time delay of 0.60 seconds in 5 seconds increments shall be provided between verification of a fire situation and suppression system release.

A fused polarity reversing , 1 amp, 24VDC supervised dedicated release circuit for use with approved fire suppression system releasing devices shall be provided.

Battery supervision shall be provided for condition and placement of the batteries.

An auxiliary trouble circuit for supervision of other normally closed accessory devices shall be provided.

Six plug in relays shallbe provided for auxiliary function. Each of the following actions shall cause one of the six relays to transfer:

i) System Discharge
ii) Zone 1 Alarm
iii) Zone 2 Alarm
iv) Pre-Discharge Alarms
v) General Alarm
vi) System Trouble

LED indicators shall be provided on the front door to annunciate the following conditions:

i) Power – (Green)

ii) Sytem Trouble - (Red)

iii) iii) Zone 1 Alarm – (Red)

iv) iv) Zone 2 Alarm-(Red)

v) Pre-Discharge Alarm – (Red) vi) System Fired – (Red)

A prioritized LED troubleshooting code shall be provided in oder to restore the control unit to normal condition as quickly as possible.

The control unit shall be housed in steel cabinet of approved type with conduit knockouts in a (red) (beige) enemel finish.

The door shall have a continuous hinge a 180 ^{0} swing . Wiring connections shall be screw terminal blocks.

A trim ring shall be supplied for semi-flush installations. When two dual zone control units are required, they shall be available in a single enclosure, if this feature simplifies the installation and system arrangement.
The control unit shall be F.M Approved as an alarm/releasing control unit

1.3.8.4 Smoke Detector - Ionization

Ionization type smoke detector shall be dual chamber type and compatible with the control unit. The detector shall have an LED in its base which is illuminated in a steady "on" mode when in alarm. Reset of the detecto0r shall be performed by the control init reset se\witch.

The design of the ionization detector compensating circuits shall provide stable operation with regard to minor changes in temperature, humidity, and atmosphere conditions.

The sensitivity voltage shall be factory ser per U.L 268. A special locking screw shall be provided to lock the head to the base, The head to base connection shall be by use of bifurcated contracts. Terminal connections to the base shall be of the screw type.

Where specifically identified on the contract drawings, detector vases shall incorporate a relay with Form C contacts rated at 1 amp 120 VAC or 28VDC for remote LED alarm annuciation of the detector.

The detector shall be F.M Approved.

1.3.8.5 Smoke Detector - Photoelectric

Photoelectric detector shall be a solid-state sensing chamber unit providing stable operations (sensitivity) and compatible with the control unit. The detector shall utilize a light sensing photodiode and a pulse signal processor to measure the density of the combustion products within

the sensing chamber. The detector head shall have a stainless steel mesh to prevent foreign objects from entering the sensising chamber.

The sensitivity voltage shall be factory set.
A special locking screw shall be provided to lock the head to the base. The head to base connection shall be by use of bifurcarted cont\acts. Terminal connections to the base shall be of the screw type.

Where specifically indentified on the contract drawings , detector bases shall incorporate a relay with Form C contacts rated at 1 amp 120VAC or 28VDC for remote LED alarm annunciation of thee detector.

The detector shall be U.L. Listed or F.M Approved.

1.3.8.6 Alarm Bells

The vibrating Alarm Bell shall be approved foe use with the listed control unit. The polarized alarm bell shallobe rated at 24VDC and draw no more than .063 amps and shall contain a series diode foe use in supervised systems. It shall have a dB level of 86 – 90 at 3 metres.

The bell shallbe constructed of high quality materials to ensure reliability and long life and have a baked red enamel finish.

The device shall be F.M Approved.

1.3.8.7 Manual Pull Stations (Fire man's switch)
The Manual Pull Station shall be provided for the release (electrical) of the IG-55 in case of an emergency. The unit shall be contained within a metal body having a (single) (double) pole switch.

The device shall be that approved by Fire Authority.]

1.3.8.8 Abort Switch

The abort switch shall be used where an investigation delay is desired between detection and actuation of the IG-55 System.

This switch shall be a momentary contact "dead-man" type switch requiring constant pressure to transfer one set of normally open and one set of normally closed contacts on each contacts on each contact block. Clear operating instruction shall be provided at the abort switch.

The terminal connections shall be of the screw type.

The device shall be U.L listed of F.M Approved for a delay switch.

1.3.8.9 Pressure Switch

This pneumatically actuated switch shall be used to give positive identification of release of IG-55 in the piping system. The switch shall have one set of normally open and one set of normally closed contacts.

1.3.8.10 Selector Switch – Key Operated

The key operated selector switch shall be approved foe use with the listed control unit and provide an electrical means of transferring the release circuit signal to the IG-55 system from the main supply to the reserve supply.

The switch contracts shall provide a set of normally open and normally closed contacts.

1.4 SYSTEM INSPECTION AND TESTING

The completed installation shall be inspected by authorized personnel and shall include a full operational test of all components per the equipment's manufacturer recommendation including agent discharge.

This shall be done in the presence of the owner's representative and other insuring authority having jurisdiction.

All mechanical and electrical components shall be tested according to the manufacturer's recommended procedure to verify system integrity.

An inspection shall be provided by the contractor. Inspection shall include a complete checkout of the electronic system, and certification of weight and cylinder pressure. A written report shall be filed with the owner.

Two copies of drawings shall be provided by the Sub-Contractor indicating the installed details. All routing or piping and electrical conduit and accessories shall be noted.

Equipment, Installation and Maintenance Manuals shall be provided in additions to the as-built drawings.

Prior to final acceptance, the contractor shall provide operational training in all concepts of this system to the owner's key personnel. Training shall consist of :-

i) System Control Unit Operation ii) Trouble Procedures iii) Abort Procedures iv) Emergency Procedures v) Safety Requirements

vi) A functional test shall be completed prior to the concentration test consisting of detection, release alarm, accessories related to system, control unit, and a review of the tanks, piping, fittings, hangers and cylinder pressure.

Concentration test shall be provided under the supervision of the contractor's authorized personnel in the presence of the owner's representative, local authorities and any other insuring authority.

IG-55 test procedures shall be recommended by equipment manufacturer and the IG-55 supplier.

The contractor shall provide a 3 chart thermal conductivity gas analyzer capable of automatically recording three sampling points. Concentration recording shall continue until authorities are satisfied with hazard integrity or 10 minutes have elapsed.

The sampling points shall be located at strategic areas but no higher than the highest combustible contents. If the tests results indicate that the design concentration was not achieved and/or held, the contractor shall determine the cause of failure.

After determination of cause, the system should be recharged and again placed in operation. The contractor shall only be responsible to retest based on equipment failure.

PARTICULAR SPECIFICATIONS FOR PIPES AND ASSOCIATED ACCESSOIRES

PARTICULAR SPECIFICATIONS FOR PIPES AND ASSOCIATED ACCESSOIRES

1.1: Polypropylene Pipes –Random copolymer (PP-R) Type 3

PP-R pipework shall be manufactured in accordance with ISO 15874-1 or manufactured in accordance with DIN 8077 and DIN 8078.

1.1.1: Jointing

The method of jointing to be employed shall be that of fusion welding using the pipe and manufacturer's approved equipment.
And fittings to be in accordance DIN 16962.
The threaded connections shall conform to BS EN 10226-1 or ISO 7-1.
Dimensions and quality of PP-R Pipes shall be as follows:

Nominal Diameter	Approx. Wall Thickness (Minimum and Maximum)				Inner Diameter (mm)	
	SDR 7.4		SDR 6		SDR 7.4	SDR 6
	PN 16		PN 20		PN 16	PN 20
DN (OD)	Min	Max	Min	Max		
20	2.80	3.30	3.40	4.00	13.90	12.60
25	3.50	4.10	4.20	4.90	17.40	15.90
32	4.40	5.10	5.40	6.20	22.50	20.40
40	5.50	6.30	6.70	7.60	28.20	25.70
50	6.90	7.80	8.30	9.40	35.30	32.30
63	8.60	9.70	10.50	11.80	44.70	40.70
75	10.30	11.60	12.50	14.00	53.10	48.50
90	12.30	13.80	15.00	16.70	63.90	58.30
110	15.10	16.90	18.30	20.40	78.00	71.30
125	17.10	19.10	20.80	23.10	88.80	81.10
140	19.20	21.40	23.30	25.90	99.40	90.80
160	21.90	24.30	26.60	29.50	113.80	103.90

Fusion guideline shall be as follows:

Pipe Diameter(mm)	Minimum wall thickness (mm)	Insert depth (mm)	Heating time (sec)	Jointing time (sec)	Cooling time (sec)
20	3, 4	14	6	4	2
25	4, 2	16	7	4	3
32	5, 4	18	8	6	4
40	6, 7	20	12	6	4
50	8, 4	23	18	6	5
63	10, 5	26	25	8	6
75	12, 5	28	30	8	8
90	15, 0	31	40	10	8
110	18, 4	33	50	10	8

1.2: Galvanised Mild Steel Pipe Work and Associated Accessories

Galvanized steel pipework up to 65mm nominal bore shall be manufactured in accordance with KS 06.366, EN 10255, Class B/Medium, with tapered pipe threads in accordance with BS EN 10226-1 or ISO 7-1.

All fittings shall be made of galvanised malleable iron and manufactured in accordance with KS 06-885:1995 or EN 10255.

Galvanized steel pipe work from 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.

Specifications for galvanized mild steel pipe work to be as follows:

Nominal bore		Outside diameter	Thickness		Mass	
		Medium/ Heavy	Medium	Heavy	Medium	Heavy
in	mm	mm	mm	mm	kg/m	kg/m
1/4	8	13.90	2.30	2.90	0.641	0.765
3/8	10	17.40	2.30	2.90	0.839	1.020
1/2	15	21.70	2.60	3.20	1.210	1.440
3/4	20	27.20	2.60	3.20	1.560	1.870
1	25	34.20	3.20	4.00	2.410	2.940
1 1/4	32	42.90	3.20	4.00	3.100	3.800
1 1/2	40	48.80	3.20	4.00	3.570	4.380
2	50	60.80	3.60	4.50	5.030	6.190
2 1/2	65	76.60	3.60	4.50	6.430	7.930
3	80	89.50	4.00	5.00	8.370	10.300
4	100	114.90	4.50	5.40	12.200	14.500
5	125	140.60	5.00	5.40	16.600	17.900
6	150	166.10	5.00	5.40	19.700	21.300

1.3: Poly-vinyl Chloride (CPVC) Pipes and Fittings

All CPVC pressure pipes and fittings shall be as manufactured in accordance with ASTM F 441/F441M or DIN 8079/8080 or EN ISO 15877, KS06-478-2:1993 (B.S. 3505: 1968).

1.3.1: 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. This shall be in accordance to ASTM F438 and ASTMF439 The threaded connections shall conform to ASTM F437 or BS EN 10226-1 or ISO 7-1.

The specification for chlorinated polyvinyl chloride (CPVC) pipe made for water distribution shall be as follows:

ASTM F441/F441M

Nominal Size	Mean Outside Diameter (mm)		WALL THICKNESS (MM) & PRESSURE RATING (PSI)							
			Schedule 40				Schedule 80			
inch	Min	Max	Min	Max	PSI		Min	Max	PSI	
					23°C	82°C			23°C	82°C
1/2	21.20	21.20	2.77	3.28	600	150	3.73	4.24	850	210
3/4	26.60	26.60	2.87	3.28	480	120	3.91	4.42	690	170
1	33.27	33.27	3.38	3.89	450	110	4.55	5.08	630	155
11/4	42.07	42.07	3.56	4.06	370	90	4.85	5.44	520	130
11/2	48.15	48.15	3.68	4.19	330	80	5.08	5.69	470	155
2	60.15	60.15	3.91	4.42	280	70	5.54	6.20	400	100
21/2	72.82	72.82	5.91	5.77	300	75	7.01	7.85	420	105
3	88.70	88.70	5.49	6.15	260	65	7.85	8.53	370	90
4	114.07	114.07	6.02	6.73	220	55	8.56	9.58	320	80
6	168.02	168.02	7.11	7.97	180	45	10.97	12.29	280	70
8	218.62	218.62	8.18	9.17	160	40	12.7	14.22	250	60

DIN 8079/8080

Nominal Size	Mean Outside Diameter (mm)		WALL THICKNESS (MM) & PRESSURE RATING (BAR)			
			SDR 13.6		SDR 11	
mm	Min	Max	(16 Bar)/PN 16		(20 Bar)/PN 20	
			Min	Max	Min	Max
20	20.0	20.2	1.5	1.9	1.9	2.3
25	25.0	54.2	1.9	2.3	2.3	2.8
32	32.0	32.2	2.4	2.9	2.9	3.4
40	40.0	40.2	3.0	3.5	3.7	4.3
50	50.0	50.2	3.7	4.3	4.6	5.3
63	63.0	63.2	4.7	5.4	5.8	6.6
75	75.0	75.3	5.6	6.4	6.8	7.7
90	90.0	90.3	6.7	7.6	8.2	9.3
110	110.0	110.3	8.1	9.2	10.0	11.2
125	125.0	125.3	9.2	10.4	11.4	12.8
140	140.0	140.4	10.3	11.6	12.7	14.2
160	160.0	160.4	11.8	13.2	14.6	16.3

The pipe to be made out high quality material with high impact resistance, chemical resistance, good thermal qualities, low flame spread and low smoke generation.

PARTICULAR SPECIFICATIONS FOR MECHANICAL VENTILATION AND AIR CONDITIONING

PARTICULAR SPECIFICATIONS FOR MECHANICAL VENTILATION AND AIR CONDITIONING

I. PARTICULAR SPECIFICATIONS FOR MECHANICAL VENTILATION

1.1 SCOPE OF WORK

The scope of the works comprises Installation, Testing, and Commissioning of Mechanical Ventilation and Air Conditioning systems in accordance with Specifications and drawings.

All the necessary elements and details for complete system are to be included. Excluded from the specifications are the following:-

- All concrete works
- All block work
- Electrical wiring, isolators and switch boards, except internal wiring for control system from a local isolator.

1.2 SYSTEM COMPONENTS

Dimensions and capacities of ducts and fans are calculated and based on a specific requirements of air, and on an assumed resistance through grilles, silencers etc. However the installer shall be responsible for the correct functioning of the system. Subsequently it is therefore his duty to size the systems' components with consideration to his offered equipment.

1.3 DRAWINGS

The Engineer's drawings show the main layout and principles for the Ventilation and Air Conditioning Systems. If need for further detailing is required in order to carry out the work, working drawings and details shall be produced for approval by the Engineer before the work is executed.

In preparation of the working drawings are care should be taken to coordinate the Ventilation and Air Conditioning works with other services involved and avoid any interference with these.

1.4 MATERIALS AND WORKMANSHIP

In the specification, equipment is generally described according to capacities and a given standard in order to aid in identification of the particular equipment to satisfy specifications. The equipment selected shall be of reputable manufacture with adequate Back-Up service.

If the Engineer finds it necessary, samples of the materials will be submitted for approval before placing an order. The Engineer shall reject any materials which he finds to be of unsatisfactory quality.

Works shall be carried out by competent workmen under experienced supervision. The Engineer shall have the authority to have any substandard work or equipment redone and/or equipment replaced.

1.5 DUCTWORK

1.5.1 General Ductwork

All seams, joints and connections to plant shall be so made as to reduced air leakage to a minimum. Internal roughness and obstructions to airflow will not be accepted. Sharp edges or corners on the outside of ductwork, flanges, supports, etc, will not be accepted. Any part of galvanized ductwork where the galvanizing is damaged during manufacture or erection shall be painted with two coats of aluminium, zinc or other corrosion – resisting paint to the approval of the Engineer.

Where ducts pass through roofs (and external walls where applicable) these shall be fitted with angle flanges and weather cravats to ensure a weather-proof fitting to the building structure.

Connections to equipment shall be made with angle flanged joints. Ductwork which may have to be moved to enable plant to be removed shall incorporate angle flanged joints. For long duct runs, angle flanged joints shall be included at intervals to facilitate any subsequent alternations.

Bends and offsets shall have a minimum throat radius equal to the width of the duct. Where short radius elbows are indicated or agreed by the Engineer as necessary due to site limitations the dimensions and internal vane (s) shall be in accordance with HVCA publication DW/121.

Ductwork shall be constructed by galvanized, cold rolled, close annealed patent flattened sheets. Tests holes shall be provided in branch ducts from grilles and there shall be three or four tests holes on side of duct according to duct depth at each test position. At branch positions there shall be one test hole. Air tight swivel type metal covers shall be fitted over the test holes in such a manner that they shall be readily removed as required.

1.5.2 Rectangular ductwork

Construction of ductwork shall be as per the following

Guidelines: Up to 300mm longer side – 22 S.W.G.

- over 300mm and up to 460mm longer size – 20 S.W.G.
- over 460mm and up to 900mm longer side 18 S.W.G (stiffening to be 25mm x 25mm x 3mm. M.S angle at slip joints at 180mm spacing)
- Over 900mm and up to 1370mm. longer side 16 S.W.G. (stiffening to be 30mm x 30mm x 3mm M.S angle at 900mm spacing).
- Over 1370mm longer side – 14 S.W.G. (Stiffening to be 40mm x 40mm x 5mm M.S angle at 900mm. spacing).

Ductwork constructed from 22 and 20 S.W.G sheet shall have folded locked seams and ductwork constructed from 18, 16 and 14 S.W.G. sheets shall have riveted seam with 8 S.W.G rivets at 2" pitch.

Joints for ductwork having a side greater in width than 610mm shall be flanged by means of 30mm x 30mm x 3mm mild steel angles. Mild steel used as flanges or stiffeners shall be riveted to the ductwork, with 8 S.W.G rivets at 2" pitch. The joint faces of flanges shall be drilled for 10mm bolts at 75mm pitch.

Air tight access doors shall be provided on the ductwork wherever indicated on the drawings. The access doors, of sufficiently heavy construction to avoid distortion, complete with handles, shall be secured by brass wing nuts screwed into studs provided, on galvanized mild steel stiffening frames riveted, or bolted to the ductwork. The access doors shall be provided with felt or rubber gaskets to ensure that when closed they are perfectly tight.

The ductwork shall be installed with all joints air tight and adequately stiffened and braced shall have the largest radius possible with a minimum throat radius of one diameter if possible. Square or miter elbows will only be allowed where shown on the drawings. Turning vanes shall be fitted in square or miter elbows.
Transformer pieces except where situated on fan suction shall be constructed so that the angle on any side does not exceed 15° to the axis of the duct where possible.

Branch ducts shall enter main ducts expansion sections where possible. Where branch ducts occur, at taper or transformation pieces, the length of such pieces in the main duct shall be symmetrical about the axis of the branch.

1.6 BRACKETS AND SUPPORTS

Supports and brackets for ductworks shall be made adjustable for height, spaced to ensure support and where practicable shall be fitted at each joint of the ductwork. Vertical ductwork shall be supported at each floor level, horizontal ducts at intervals not exceeding 2280mm and adjacent to fans, canvas joints and other equipment. All members of supports in contact with metal ductwork shall be galvanized after fabrication.

Socketed joints shall have a minimum overlap of 50mm in the direction of flow. The joint shall be made with an approved type jointing compound with bolts or rivets at centres not exceeding 50mm. wherever access cannot be made for riveting or bolting self tapping screw of the shortest length which will give a satisfactory joint shall be used in lieu of the rivets or bolts, on size or diameters up to 530mm. All slip joints on circular ductwork are to have a spigot carefully swaged damper leaves shall be multi leaf type. The quadrants shall be of robust construction and securely fixed to the ductwork. The leaves shall be linked with a connecting rod and the ends of the spindle shall be housed in bearings. Dampers are to indicate the full and closed positions and are to be marked and then locked after air Volume has been set.

1.7 JOINTS

1.7.1 Flexible Joints

Flexible joints shall be provided on fan inlet and outlet connections and elsewhere on the ductwork where indicated. They shall be over the full cross-sectional area of the mating fan inlet or outlet section. The ends of the duct and fan connections shall be in line.

Flexible joints shall consist of, or be protected by, material having a fire penetrating time of at least fifteen minutes when tested in accordance with BS 476 Part 1 Section 3. The material shall be of the glass fibre cloth type, canvas or other approved material. The width of joints from metal edge to metal edge shall not be less than 80mm and more than 250mm.

All flexible joints other than fan inlet connections shall be between flanged ends. The flexible material flange shall be backed by an angle or flat iron flange and the flexible joint flat iron bar used with fan inlets shall not be less than 5mm thick.

1.7.2 Flexible Connections.

Where flexible connections are indicated or required between rigid ductwork and particular components or items of equipment, the internal diameter of the flexible duct shall be equal to the external diameter of the rigid ductwork and of the spigot type. The use of flexible duct between rigid sections of sheet metal ductwork to change direction or plane will not be permitted except where indicated or expressly authorized by the Engineer.

The flexible duct shall have a liner a cover of tough tea-resistant fabric equal in durability and flexibility to glass fibre shall be impregnated and coated with plastics. It shall be reinforced with a bonded galvanized spring steel wire helix or glass fibre cord or equal and shall be bonded to cover to ensure regular convolutions.

Alternatively the flexible duct shall consist of flexible corrugated metal tubing of stainless steel, aluminium, tinplated steel or aluminium coated steel. The metal may be lined on the inside or the outside or both with plastics materials.
The joints to rigid spigots shall be sealed with a brush coat of pipe jointing paste or mastic compound. Ducts up to 150mm diameter shall be secured with a worm drive type hose clip complying with BS 3628. Ducts over 150mm diameter shall be secured with band clip.

The frictional resistance to air flow per unit length of the flexible duct shall not exceed 50% more than the frictional resistance per unit length of galvanized steel ducts of equivalent diameter. The radius ratio R/D for bends shall not be less than 2, where R is the centre line radius and D is the diameter of the flexible duct.

Flexible ducts shall be suitable for an operating temperature range of 18oC to 120oC and shall comply with BS 476 Part 1, Section 2, Clause 7 (Clause 1; surface of very low flame spread).

1.8 FINISH PAINTING

Upon completion of the installation and after all tests have been carried out to the satisfactory of the Engineer, the plant, equipment, supports, etc. shall be examined and all priming coats damaged during erection made good.

Any plant or equipment, ductwork, etc., which is to be insulated, shall have had the priming paint protection made good before the application of the insulation. After the above procedures have been carried out to the satisfaction of the

Project Manager, the various surface shall be given the necessary preparation as recommended by the paint and insulation manufacturers and finish painted in colours to be agreed between the Sub-Contractor and Project Manager, at a later date.

For the purposed of the Specification, however, it shall be deemed that the sub-contractor's tender price was based on the identification requirements for the various services detailed in Code of Practice DW/161 Identification of Ductwork as published by the H.V.A.

1.9 AIR INTAKES AND OUTLETS

Unless otherwise indicated fixed louvers on external walls will be fitted at air intake and outlet positions. A galvanized steel wire mesh screen of 20mm diamond mesh and at 2mm diameter wire and complete with a frame of galvanized steel rod with securing lugs or of flat iron shall also be fitted on the inner side of the louvers.

1.10 FANS

1.10.1 General

Fans shall capable of giving the specified performance when tested in accordance with BS 848. Although estimated values of the resistance to airflow of items of equipment may be indicated, this does not relieve the Contractor to the responsibility for providing fans capable of delivering the required air volume flow through the system.

The make and design of fans shall be approved by the Engineer and evidence supporting noise levels and fan efficiencies shall be provided. Where fans are supplied with noise attenuations, full details of the attenuations shall be given.

Belt driven fans shall be fitted with pulleys suitable for V-belts; pulleys of the taper lock type may be used for drivers up to 30KW output. Alternatively, and in any case above 30KW output, pulleys shall be secured to the fan and the motor shafts by keys fitted into machined keyways. Pulleys shall be keyed to the fan shaft in the overhung position. Keys shall be easily accessible so that they can be withdrawn or tightened and they shall be accurately fitted so that the gib head does not protrude beyond the end of the shaft.

Machined bolts, nuts and washers only shall be used for the assembly of fans; all bearing surfaces for the heads of bolts or washers shall be count faced. Holding down bolts for fans and meters shall be square section under the head or be fitted with snugs to prevent them tuning in the fan base plate when the nuts are tightened.

Any fan which is too large or too heavy for safe manhandling shall be provided with eyebolts or other lifting facilities to enable mechanical lifting equipment to be used.

1.10.2 Axial Flow Fans

Axial flow fans shall be of either the single stage type or the multi-stage contra-rotating type with each impeller mounted on an independent motor. Casings shall be rigidly constructed of mild steel stiffened and braced to obviate drumming and vibration. Cast iron of fabricated steel feet shall be provided where necessary for bolting to the base or supports. Inlet and outlet ducts shall terminate in flanged rings for easy removal. The length of the fan (s) and motors(s) shall also terminate in flanges in order that the complete section may be removed without disturbing adjacent ductwork. Electrical connections to the motor(s) shall be through an external terminal box secured to the casing. Impellers shall be of steel or aluminium, the blades shall be secured to the hub or the blades and the hub shall be formed in one piece. The hub shall be keyed to a substantial mild steel shaft and the whole statically balanced. Blades shall be of aerofoil section. Shafts shall be carried in two bearings which may be ball roller or sleeve type. Lubricators shall be extended to the outside of the casing.

Where axial flow fans are driven by a motor external to the casing the requirements for pulleys and for V-belt drives and guards shall be met. Unless otherwise indicated a guard is not required for any part of a drive which is within the fan casing. An access door of adequate size shall be provided.

Where axial flow fans of the bifurcated type are indicated the motors shall be out of the air stream. Motors may be placed between the two halves of the casing in the external air or may be placed within the fan casing provided that effective ventilation is given to the motor. Where hot gases or vapours are beings handled the motor and the bearings shall be suitable for operation at the temperature they may experience.

1.11 DAMPERS

1.11.1 General

Sufficient dampers shall be provided to regulate and balance the system. Dampers on grills or diffusers shall be used for fine or secondary control. All dampers shall be sufficiently rigid to prevent fluttering. Unless otherwise indicated, the air leakage past dampers in the fully closed position shall not exceed 5% of maximum design air flow in the duct. All duct dampers except fire dampers and self-closing flaps shall be fitted with locking devices and position indicators. Dampers shall be generally in accordance with the appropriate HVCA Specification.

Each Primary control damper shall be fitted with a non-corrodible label stating the actual air flow in M3/S and the cross-sectional area. Alternatively, these figures shall be painted in a visible position on the adjoining ductwork or insulation. The position of a damper as set after final regulation and balancing be indelibly marked on the damper quadrant

1.11.2 Butterfly dampers

Butterfly dampers shall each consist of two plate's edge seamed, and of the same thickness of material as that from which the associated duct is made, and rigidly fixed to each side of a mild steel operating spindle, the ends of which shall be turned and housed in non-ferrous bearings.

1.11.3 Bifurcating dampers

Bifurcating dampers shall be of 2mm thick sheet for sizes up to 450mm square. For larger sizes, the thickness shall be as indicated. Damper plates shall be rigidly fixed to square section mild steel spindles the ends of which shall be turned and housed in non-ferrous bearings.

1.11.4 Multi-leaf dampers

Multi – leaf dampers shall consist of two plates of material of the same thickness as the associated duct and rigidly fixed to each side of an operating spindle, the ends of which shall be housed in brass, nylon, oil impregnated sintered metal, PTFE impregnated or ball bearings. The ends of the spindles shall be linked such that one movement of the operating handled shall move each leaf an equal amount. An inspection door shall be provided adjacent to each multi-leaf damper.

On low velocity systems only, multi-leaf damper blades may be of a single plate, at least 1.6mm thick and suitably stiffened, and the blade linkages may be within the duct. Those dampers shall have bearings and inspection doors as specified above.

1.11.5 Damper Quadrants and Operating Handles

Quadrants and Operating handles shall be of die-cast aluminium with the words "OPEN" and "SHUT" cast on the Quadrants. Quadrants shall be securely fixed to the damper spindles and shall be close-fitting in the quadrants hubs to prevent any damper movement when the damper levers are locked.

1.11.6 Self-closing dampers

Self-closing dampers shall be designed so as to present the minimum of resistance to airflow under running conditions, to take up a firm, non-fluctuating position under running conditions and to give a tight shut-off when closed. They shall incorporate rubber stops to prevent rattling and to give a tight shut-off when closed. They shall incorporate rubber stops to prevent rattling.

1.11.7 Sliding Dampers

Sliding dampers shall be provided only where indicated. They shall be of 2mm. thick sheet steel for size up to 450mm square. For larger sizes the thickness shall be as indicated. They shall run in guides lined with felt.

1.11.8 Iris type dampers.

Iris type dampers may be used in ducting up to 600mm, dia. Or 450mm square. The control shall be on the outside of the damper. The design shall be such that the leaves of the damper can be easily moved for adjustment.

1.12 GRILLES

1.12.1 Supply & Return Registers

Supply registers shall be manufactured from high grade, extruded Aluminium sections with lacquered finish and fixing shall be 32mm with bevelled edges.

The registers shall have a front set of blades parallel to the long dimension, of rear set of blades parallel to the short dimension, the blades being at 17mm centres and individually adjustable with opposed blade dampers.

1.12.2 Extract grilles

Extract grilles shall be similar to the Supply Registers described above with the exception that they have only one set of blades parallel to the long dimension.

1.12.3 Fresh Air Grilles

These shall be manufactured from sheet steel with steel fixing flanges and shall be galvanized after manufacture. An insect screen shall be fixed downstream.

1.12.4 Diffusers

These shall be manufactured from high grade extruded sections with lacquered finish, bevelled flanges and removable core. Fixing shall be by self-tapping screws through the duct into neck of the diffuser.

1.12.5 Louvers

Discharge and Fresh air Intake louvers shall be manufactured from mild steel and be galvanized after manufacture. A screen shall be fixed to the back of the louvers

1.13.0 ATTENUATORS

1.13.1 General

Purpose made attenuators and sound absorbing material shall be designed to air flow, have adequate strength and cohesion to resist erosion by air flow and do not produce dust. They shall be free of odour and proof against rot, damp and vermin and shall comply with the requirements as to fire and smoke hazards. Adhesives shall be compatible with the sound absorbent material and should preferably be non-flammable.

Where sound absorbent material and /or special attenuators are indicated they shall either reduce the sound level in the space, due to the equipment, to the specified value or shall give the specified sound level attenuation over the specified range of frequencies. Purpose made attenuators shall be tested in accordance with HVRA Laboratory Report No. 55 (Code for the measurement of the performance of unit silencers). The insertion loss and generated noise level for each octave band and the pressure loss of the silencer shall be stated.

Attenuators shall be suitable for internal air pressure of 100N/m2, air stream temperatures of up to 40oc and free from air stream erosion for velocities up to 25m/s. The mineral wool lining shall be rot, vermin and fire-proof. Attenuator casing shall be pre-galvanized sheet steel with galvanized pre-drilled flanges.

1.13.2 Rectangular Attenuators

These shall be rectangular in section with splitters forming air passages in parallel. The mineral wool lining shall be resin bonded.

1.13.3 Circular Attenuators

Circular section attenuators will have a central pod. The mineral wool lining shall be retained by expanded steel. The end flanges shall be match drilled to suit the fan which they are fixed to.

1.13.4 Acoustic lining

Where indicated on the contract drawings, the ductwork shall be acoustically lined. The lining shall consist of resin bonded mineral wool 25mm, thick fixed to the ductwork by a suitable adhesive.

1.14.0 INSTRUMENTS

1.14.1 General

The instruments, gauges etc, detailed in this section shall be provided in addition to those associated with specific items of plate and detailed elsewhere, they shall be mounted in accessible positions and shall be easily read.

1.14.2 System Static Pressure Gauge

A system static pressure gauge shall be provided for the system. It shall consist of a small inclined manometer gauge similar to a filter gauge. The edge of the gauge shall be connected to the system and the other end shall be left open to the plant room but where fluctuation of the static pressure in the plant room may occur the gauge shall be connected across the main fan. Such fluctuations may be caused by wind pressure affecting large open air intakes to the plant room.

1.15.0 VIBRATION, NOISE AND SOUND INSULATION

1.15.1 Anti-Vibration Mountings

Fans, compressors, motors and any other vibration-inducing equipment shall be isolated from the building structure by anti-vibration mountings which shall be compressed machinery cork, spring or rubber dampers or rubber/metal bearers as indicated.

1.15.2 Noise

The noise produced by the installation in the spaces served, in any adjacent buildings and in the open air surrounding plant rooms shall be kept as low as possible. This shall be specially considered in the selection of fan motors, grilles and the internal finish and arrangements of extraction ducting.

Noise level information for fans based on octave analysis data, shall be stated. The reference level and the testing technique shall be stated.

The sound level in the spaces served, due to the equipment shall comply with the recommended design criteria given in the IHVE Guide (Table 13.1 of 1965 Edition). The maximum sound pressure level due to ventilation system must not exceed value mentioned below measured by a reference value of $2 \times 10 \times 10^{-5}$ N/m^2 transferred to a logarithmic scale, and measured at any point 1.5 meters above the floor and 1.0 meters from the walls.

The maximum sound pressure level measured at any point 4 metres from the extract point must not exceed 55dB.

The maximum sound pressure level measured at any point 4 metres from fans must not exceed 60dB.

1.16 THERMAL INSULATION

1.16.1 General Description

All heated, cooled, and re-circulated air ductwork shall be insulated.

Insulation shall be of 25mm thick expanded polystyrene sheet, or spray applied polyurethane foam to a uniform thickness of 25mm. Polystyrene shall be fixed so that the edges butt closely without gap and the insulation shall overlap at corners by the thickness of the insulation. The sheet shall be fixed by means of a suitable adhesive and plastic impingement pines attached to the ductwork.

1.16.2 Ductwork in Plant Room

The insulation described above in Clause 5.1 above shall be finished by the application of a 15mm thick layer of hard setting finish. Insulation shall bevelled thick to angle of 45o at all connecting flanges, access hatches and all other places where operation or maintenance is likely to cause the breaking of the insulation.

The insulation shall then be given a vapour sealing by the application of two coats of anticondensation paint.

1.16.3 Ductwork External to plant Rooms

The insulation described in Clause 5.1 above shall finish by the application of two coats of bitumastic.

1.17 ELECTRICAL EQUIPMENT AND WIRING

1.17.1 Scope

The responsibility for electrical equipment and wiring shall be as defined as below-:

An on-off starter shall be provided and placed in the appropriate position for connection of the fans required for the installation and within a time agreed with the Engineer fully detailed wiring diagrams for all connections to them shall be availed.

The Installer shall be responsible for the accuracy of all wiring diagrams provided by him and for the correct internal wiring of all pre-wired equipment supplied. The Installer shall reimburse the full cost of abortive or remedial work arising from any error in these aspects.

1.17.2 General

Unless otherwise indicated all electrical equipment and installation shall be suitable for use in ambient temperatures up to 40°C and relative humidity up to 90%. For tropical climates, electrical equipment shall be suitable for use in the temperature and humidity as indicated; it shall be proof against atmospheric corrosion, including that of saline air where relevant, and materials shall not be susceptible to mould growth or attack by termite and similar hazards.

1.17.3 Electrical Motors

Electrical motors shall comply with BS 170 2048 or with BS 2613 and BS 3979 as appropriate. All motors shall have Class E insulation (BS2757) and can be continuously rated.

They shall be screen protected (BS2817) unless otherwise indicated under all normal conditions, without being overloaded. All motors larger than 0.75kw output shall be three phase, for motors above 15kw output the type of motor and method of starting shall be such as to limit the starting and run-up currents to three times the rated full load current unless otherwise indicated. No motor shall run faster than 25rev/s unless otherwise indicated.

1.18 INSPECTION, COMMISSION AND TESTING

1.18.1 General

Unless otherwise indicated tests shall be carried out in accordance with the appropriate BS or CP. Test certificates for works tests, site tests and tests required by BS shall be submitted in duplicate to the Engineer.

1.18.2 Testing

Where an individual inspection or tests take place at outside the site of the works representatives of the Engineer will be required to be present.

Unless otherwise indicated the contract shall include the cost of all tests, necessary instruments, plant supervision and labour both at work and on site. The accuracy of the instruments shall be demonstrated where so directed by the Engineer.

The site test shall be of at least six hours duration. Any defects or workmanship, materials and performance maladjustments or other irregularities which become apparent during the tests shall be rectified by the supplier at his expense and the tests shall be repeated at his expense to the satisfaction of the Engineer.

The Supplier/Installer's representative present at the site tests shall be fully conversant with the operation of the thermostatic controls and shall be expected to explain the operation and safety controls forming part of the installation to the employer's representatives.

1.18.2.1 Site Tests

The Installer shall supply all instruments and equipment necessary to carry out site tests and shall arrange with other parties for the testing of associated equipment which may affect the performance of the plants installed under these works.

1.18.2.2 Site Tests-Fans

All fans shall be charged with suitable lubricant and shall be tested upon completion of the auxiliary system erection to ascertain that the performance of each fan complies with the requirements of the specification.

1.18.2.3 Completion of Works – Balancing and Commissioning

Following the site tests and prior to handover, Mechanical Ventilation or Air-Conditioning systems shall be balanced by means of grills, dampers and other special controls installed so to give the required air flow rates and where applicable the required temperatures, pressures and humidity conditions in all areas served by the said systems.

The complete system shall be balanced and commissioned as a whole. Sectional balancing and commissioning on any part of the system where this excludes, final complete system balancing and commissioning shall not be accepted.

Test volumes within ducts shall be within +5% of the design volumes, and volumes at grills and diffusers shall be within +10% of the design volumes.

When the system has been balanced to the satisfaction of the project manager, it shall be run under complete automatic control for 72 hours continuous operation to ascertain any faults in operation before acceptance and handover. Any faults discovered during this time shall be corrected and another test or tests of 72 hours duration shall be carried out to ensure satisfactory operation, all at the expense of the Supplier/Installer..

During this phase, particular attention shall be paid to:

- The maintenance of cleanliness of all plant and extraction systems during construction and ensuring that extraction systems are cleaned through as part of commissioning.
- The protection of plant, particularly sensitive or fragile items, from the activities of other trades during construction and from dirt and mal operation during commissioning.
- The protection of electrical of electrical equipment from damp during construction and commissioning.

1.19 CONTROL SYSTEM

Particular attention shall be paid to the following features:

- Satisfactory operation of any automatic or manually operated sequence to be used in the event of fire.
- Safety in the event of failure and of sudden resumption of electricity supply.
- Satisfactory operation of safety interlocks designed for the protection of personnel, such as those associated with the high voltage electrically operated plant.

The following items shall be checked and/or tested and recorded on the site Test Certificate:-

- Set devised value of all control devices
- Satisfactory operation of equipment protection devices.
- Satisfactory operation of all sequencing operations and alternate working selections and automatic or manual change-over of duplicate plant.

1.20 NOISE AND SOUND CONTROL

Sound level reading shall be taken with a simple sound level meter using the 'A' scale weighting network. The spaces in which readings shall be taken shall be as agreed with the Engineer but will in general be the following:-

- Plant rooms
- Occupied rooms adjacent to plant rooms
- Outside plant rooms facing air intakes and exhaust to assess possible nuisance to adjacent accommodation. If the adjacent accommodation is private residential building tests may be required at night.
- In the space served by the first grille or diffuser after a fan outlet.
- In any space where, by the addition of special silencing material or techniques of by classification of use, a low level of noise is clearly required.

Alternatively, sound level reading shall be taken using a sound analyser to give an octave band analysis of the ground spectrum and to pinpoint the frequency values of peak sound levels. The spaces in which readings shall be taken shall be as agreed with the Engineer but will in general be as detailed in paragraph above.

1.21 OPERATING AND MAINTENANCE INSTRUCTION

The Supplier/Installer shall demonstrate and explain the plant and the method of starting, running and stopping to such staff as the Engineer shall nominate.

He shall provide three sets of operating and maintenance instructions which shall be enclosed in durable covers. The operating and maintenance instructions shall include;- □ A brief outline of the operation of the plant.

- Instructions on how to start and stop the plant, noting any safety and / or sequencing arrangements.
- Details of required maintenance with suggested frequency of action
- Details of all lubricating oils and greases required and filter replacement
- Details of each item of plant including the name and address of the manufacturer, type and model, serial number, duty and rating.

The operating and maintenance instructions shall be handed to the Engineer not later than at the end of the commissioning period.

1.22 SPARE PARTS

The Installer shall submit a priced list of any extra materials which he recommends should be purchased for the Ventilating and Air Conditioning Plants and all associated equipment and control gear and extras not supplied as standard. He shall be required to give a guarantee that he will hold sufficient running stock of spare parts for the maintenance of the equipment.

II. PARTICULAR SPECIFICATIONS FOR THE AIR CONDITIONING SYSTEM

2.0 SCOPE OF WORKS

The works to be carried out comprises of the supply, delivery, installation, setting to work, testing and commissioning of all Air Conditioning systems in accordance with Specifications and contract drawings.

The tenderer shall include for all appurtenances and appliances not particularly called for in this specification or on the contract drawings but which are necessary for the completion and satisfactory functioning of the system.

No claim for extra payment shall be accepted from the contractor for non-compliance with the above requirements.
If in the opinion of the tenderer there exists difference between the specification and the contract drawings, the tenderer shall clarify the difference with the engineer before tendering.

The Works to be installed under the contract shall comply with the MoLPWH&UD requirements for contract works under "GENERAL MECHANICAL SPECIFICATIONS".

2.1 CLIMATIC CONDITIONS

The following climatic conditions apply at the sites of the works and all materials and equipment used shall be suitable for these conditions:-

PARAMETERS	CONDITIONS (NAIROBI)
Maximum mean outdoor dry bulb temperature, t_o	30.4 °C
Minimum mean outdoor dry bulb Temperature	13.7 °C
Relative Humidity	70%
Altitude	1,650m ASL
Longitude	1°09'S 36 39" E
Latitude	1° 27'S.37 °06E
Max. solar radiation occurs during the month of February	846 w/m^2

2.2 SYSTEMS DESIGN DATA

The air-conditioning systems are based on the following conditions (ISO 15042)

- Cooling Temperature: Indoor Temperature 27°C Dry Bulb (DB)/ 19°C Wet Bulb (WB)
  Outdoor Temperature 35°C DB/24°C
- Heating Temperature: Indoor 20°C DB / 15°C WB
  Outdoor 7°C(44.6°F) DB / 6°C(42.8°F) WB

The equipment described here under covers the specific requirements of equipment to be used for this contractor work and shall be used in conjunction with the accompanying contract drawings.

It shall be deemed that the tenderer has based his tender on plant and equipment which is equal in performance to that stated within the specification.

3.0 DUCTED AIR CONDITIONING SYSTEM

3.1 Packaged Air Handling Units

The air conditioning unit shall be ducted and self-contained with nominal cooling load as described in the bills of quantities, with reversible heating. The unit shall be air cooled with vertical discharge. The system shall run on non-ozone depleting refrigerant such as R410A

The unit shall be encased in galvanized steel casing with polyester paint finish & shall be installed on a plinth provided by others, but the sub-contractor shall mark in advance the exact dimensioned position to the approval of the services engineer. The unit shall be finished with corrosive resistant paint and shall be suitable for marine conditions

The whole system shall be complete with the following as will be required:

- Hermetic compressor with crankcase heater and anti-recycle timer
- Centrifugal fans with variable pulley-belt drive
- Expansion valve
- Washable filters
- Filter dryers
- Reversing valve
- Unit circuit breaker
- High & Low pressure cut-out
- Direct expansion blower unit
- Discharge plenum
- Air inlet protective grille

The sub-contractor shall also be responsible for the ducting work of the rooms as described in particular specification for mechanical ventilation, drainage of condensed water from the drain pan and provision of anti-vibration mountings. The units shall be as manufactured by Trane or approved equivalent

3.2 ELECTRICAL WORKS

The tenderer shall include for supply, installation and commissioning of all starters, control apparatus, control panels and interconnecting wiring and conduits for equipment that the tenderer is supplying.
Power points shall be provided within 5 metres of the equipment installation point and the tenderer shall connect his equipment from this point.

3.3 BUILDERS WORKS

The tenderers shall allow for perforation of holes, hacking of walls etc. All disturbed surfaces shall thereafter be made good by the tenderer upon satisfactory completion of the works.

3.4 AS-BUILT-DRAWINGS AND MAINTENANCE MANUALS

Once the air conditioning system has been tested and commissioned, drawings and maintenance manuals shall be provided. They shall be a true and accurate representation of what has been commissioned.

3.5 TRAINING

Adequate personnel shall be trained to perform normal operations and routine maintenance of the air conditioning system. The number of personnel to be trained shall be specified for particular pool.

3.6 TESTING & COMMISSIONING

The system shall be balanced to the satisfaction of the project engineer. It shall be run under complete automatic controls for 72 hours continuous operation to ascertain any faults in operation before acceptance and handover.

Any faults discovered during this time shall be corrected and a further test or tests of 72 hours duration shall be carried out to ensure satisfactory operation, all at the expenses of the contractor.
All accessories/equipment have to be tested for capacity, efficiency, leakages and other human errors and shall meet standards and specifications.

All the pipe work and connections herein described shall be tested in the presence of the Engineer and to the hydraulic pressure the Engineer deems satisfactory and for a minimum period of 1 hour.

These tests must be before any insulation work is undertaken or any pipe work is finally enclosed in any ducts, etc. and due allowance is to be made in the tender for these tests.

The tenderer is to include for providing for all the testing equipment, temporary plugging and refilling etc.

4.5 Electrical Works

The tenderer shall include for supply, installation and commissioning of all starters, control apparatus, control panels and interconnecting wiring and conduits for equipment that the tenderer is supplying.

Power points shall be provided within 5 metres of the equipment installation point and the tenderer shall connect his equipment from this point.

4.6 Builders Works

The tenderers shall allow for perforation of holes, hacking of walls etc. All disturbed surfaces shall thereafter be made good by the tenderer upon satisfactory completion of the works.

PARTICULAR SPECIFICATIONS FOR DESIGN, SUPPLY AND ERECTION OF WATER STORAGE TANKS AND BOOSTER PUMPS

1.0: PARTICULAR SPECIFICATION FOR DESIGN, SUPPLY AND ERECTION OF WATER STORAGE TANKS AND BOOSTER PUMPS

1.01.0: DESCRIPTION OF SITE

The contractor is deemed to have visited the site and if unable to locate it or its details apply to the Principal Secretary, State Department for Public Works, Ngong Road, Nairobi.

No claims will be allowed for the traveling or other expenses, which may be incurred by the sub-contractor's works. However, the sub-contractor may allow that he may have to, during contract time, do part of the works and therefore three visits may be catered for.

1.01.1: SCOPE OF CONTRACT

The work to be carried out under, this sub-contract comprises the designs, manufacture, supply, delivery, erection, together with testing and commissioning of water tanks as here-in specified and shown on the contract drawings.

All work shall be performed in straightforward manner by competent workmen under skilled supervision to the entire satisfaction of the project manager.

1.01.2: COMPLIANCE WITH REGULATIONS.

The sub-contractor shall comply in all respects to the provisional and regulations of the By-laws of the Local Authority, Kenya Building Code, as 449 Part B5 1964. BS 4211, CP2 chapters V part 1 and 2 MOPW Structural steel work specification (1973) code of practice for design and construction of buildings and structures in Relation to Earthquake (1972) wherever applicable to the contract works.

The State Department of Public Works are responsible for the design of the foundation subject to giving approval of the sub-contractor's design of the tower and due allowance should be given for this work to be carried out in sub-contractor programmed of works. The main contractor is responsible for the construction of the foundation in accordance to approved designs.

1.01.3: STRUCTURAL DRAWINGS AND CALCULATIONS

2 No. copies of general arrangement and fabrication drawings properly dimensioned and detailed showing the whole tower and its accessories together with **2 No. copies** of the structural calculations complying with all the relevant BS and CP are to be submitted for approval prior to the commencement of the work.

The calculation is to indicate the maximum downward and upward loads on the foundations for the Ministry of Roads and Public Works Structural Department to design the foundation.

1.02. STEEL WATER TANKS

a) The tanks shall be pressed steel sectional tanks complying in all respects to BS 1564 Types 1 or 2. The jointing materials shall be non-toxic and non-insulable to water and the tank cover shall be joined throughout the tank top ensuring that the joint is both water proof and dust proof.

b) Cover framing and members shall be designed to withstand supper-imposed loading complying with the requirement complying with the requirements of CP2 Chapter V part 1 and BS 149 Part 2.

c) All internal stays are to be provided as required by the tank manufacture and the Sub-contractor shall be responsible for ensuring the stays are adequate in number and position and properly tightened. These are to be manufactured from steel to BS 4360, Grade 43 A.

d) All Bolts, nuts and washers used in the construction should comply with BS 4190. The contractor to allow in his pricing, for a complete set of spanners, spare bolts and Washers for maintenance purposes.

e) Access manhole with hinged cover together with a filtered vent outlet shall be installed.

f) The Sub-contractor is to notify the Project Manager of the type of panel he is proposing to use and the manufacturer who is to be approved.

g) The inflow and outflow connection shall be as shown on the drawing.

h) The outflow supply pipe shall be at least 50mm above the tank bottom while the inflow pipe shall be 200mm below the tank rim. The overflow pipe shall be about 1000mm long, away from the tank. The drain pipe shall be at the lowest part of the tank.

1.02.2.: HIGH LEVEL TANK

- Tank Capacity: **30,000Litres**
- Preferred dimensions: **5000mm * 3000mm * 2000mm (L*W*H)**
- Height from ground level to the underside of the tank will be 15 metres. The tank to be supported by a steel tower.
- The pressed steel tank sections shall be made of hydraulically pressed hot dipped **galvanised** steel sheets.
- The tank tower shall be made of **galvanised** steel. The bidder to price for a structurally sound tower with enough structural capacity to bear the tank.
- Tank to be supplied with:
    - **inflow connection of 100 mm diameter pipe**
    - **outflow connections of 100 mm diameter pipe**
    - **washout pipe of 100 mm diameter pipe**
    - **overflow pipe 100 mm diameter pipe**
    - **cover and manhole**
    - **secure it not to fall when empty**
    - **internal ladder**
    - **external ladder**

The Structural Department will give details of foundations for the high level tank.

The contractor shall provide detailed drawings of the low level and high level tanks, the tower and their accessories for approval by the project manager before installation. A pre-inspection factory visit must be done in liaison with the project manager, failure to which the works will be rejected.

1.03: PIPEWORK

The sub-contractor shall supply and fix all pipe work and fitting up to ground level as detailed on the drawing or in this specification. Al pipe work shall be adequately supported and secured to the tank structure. The washout pipe will have a bend leading to a reasonable place where the drainage will not interfere with the structure.

The inflow outflow and washout pipes shall be fixed against the tower structure so as to facilitate fixing and good support.
All pipe work shall be medium grade galvanized steel and must conform with BS 1987 1967 class 'B'.

The sub-contractor shall provide high pressure ball valve capable of coping with the maximum area's local water supply pressure.

1.04: ACCESS LADDER

Internal ladder shall be supplied for the tank and shall be fixed adjacent at the manhole but easily removable for cleaning the inside of the tank (i.e. hooked connection).
The tanks shall be provided with an external ladder leading to the manhole and complying to BS 4211.

The stringers shall be parallel, minimum width 15 inches apart and of flat bar of minimum dimensions 1½" by 2/8 inches. The rugs shall be of round bars not less than ¾ inches diameter and the distance between centers shall be 9 – 10 inches. The external ladder shall be fitted with safety hoofs made to conform with BS 4211.

1.05: PLATFORM

The tower is to have a periphery walkway at tank level having minimum width of 600mm clear between the edge of the tank and the inside of the protective safety handrail. The platform is to be provided with a steel chequered place floor of similar approved and to be completely sealed so as not to allow anybody or items such as bolts and spanners to fall on persons on the ground.

All loading for the design of such platform are to be provided in the structural calculations.

1.06: PAINTING

The tank shall be painted inside with one coat of bituminous non-toxic paint (or any other equivalent and approved) and on the outside with coat of primer before erection. After erection, the tank inside shall be painted with two coats of aluminium paint. The other structures shall be cleaned and painted one coat lead oxide or red lead before erection and two coats of aluminium paints after erection.
All the painting shall be approved by the Engineer.

1.07: ERECTION

The sub-contractor shall erect the tank complete, on foundation prepared and designed by others and with all necessary pipes, ladders, tower etc. as listed herein and shown on the drawing.

The main contractor shall prepare the foundation to the sub-contractor's and State Department of Public Works Structural Department's details. The main contractor shall also concrete or grount in the HD bolts to the sub-contractor's requirements.

1.08: BOOSTER PUMPS

Each of the set of pumps shall be directly driven by a three-phase motor, the pump motor being mounted on a common base.
Pump casing shall be manufactured from good quality cat iron and impellers, shafts and other material in contract with water shall be of corrosion resistant metal. The pumps shall be suitable for pumping filtered water treated for human consumption.

The motor shall be completed protected against possible damage due to entry of water, dust etc. they shall be fitted with glands for the entry of PVC armored cables with overall PVC sheath. The completed cable connection to the motor terminal box shall be proof against ingress of water or dust.

The pump shall be mounted on concrete plinth which shall be constructed by the main contractor in accordance with specifications form the sub-contractor.
Holes for holding down bolts shall be left in concrete and after the concrete has cured the pumps shall be placed in position and bolts grounded into position. A grout shall be floated under pump motor base to ensure an even surface for the pump to rest upon.

1.09: ELECTRICAL WORKS

It shall be the responsibility of the sub-contractor to provide all electrical wiring between all items of his sub-contract works to ensure the correct functioning of his equipment. The sub-contractor's electric works shall start from nearest electrical isolator.

1.10: CONTROL PANEL

The sub-contractor shall provide an electric control panel and shall be responsible for its fixing and satisfactory operation. The panel shall be fabricated from minimum thickness. 1.2mm steel sheet and finished grey stoved enamel.

The panel shall be wall mounted with a removable hinged front access panel. Motor control switch gear shall be of approved type. The panel shall have an integral isolator. Pump changeover shall be automatic alternating after each duty cycle. A green 'running' red 'trip' lamp shall be provided for each pump. The control system (float switches etc) shall be energized when a pump is started.

The motor system shall be wired so that they operate only automatically as called for by the switches except that starter push button shall be connected so as to enable the pumps to be started and run and cease to run when the push button is allowed to its normal position.

An emergency stop button shall be located adjacent to each pump.

The level regulator shall be wired and set in such a manner that the duty pumps shall be called to start when the high-level tank is full.

The electrode in the low-level tank shall override instructions form high level regulator and stop when the water is approximately 600mm high.

Where a three-phase motor is used, a single phasing protector shall be provided if the motor does not have one.
A phase failure relay shall be installed in 3 phase – operated pumps.

1.11: TESTING

Testing shall be done by filling the tank with water after erection. The water will be from the local supply and the main contractor shall apply from the Authority for connection.

In cases where water is already on site and being used by the client, the contractor will make necessary arrangements and reimburse the client amount equivalent to volume of water used.

Testing shall be witnessed by the Project Manager or his representative.

1.12: GUARANTEE

The sub-contractor shall guarantee the tanks against leaks, and the tower for a period of (12) months form the testing date. Any damage incurred due to bad workmanship shall be made good by the contractor.

1.13: SCHEDULES

Introduction

The tenderer shall complete all schedules. The schedules shall be read in conjunction with the specifications. The GRAND TOTAL of prices in the main summary of prices schedule shall be deemed to have been included in the Bill of Quantities for Mechanical Works.

Note: -

The list of recommended initial spare parts prices is to be submitted separately on tenderer's own paper. The spares prices are not to be included in the GRAND TOTAL or prices as the spares are an extra item only to be purchased if and when convenient to the Government of Kenya.

All prices shall be in Kenya shillings and shall be inclusive of all taxes and duties current at the time of tendering. Prices shall be quoted in US dollars if and when required in the bid document.

PARTICULAR SPECIFICATIONS FOR DRILLING & CONSTRUCTION OF BOREHOLES

1. PARTICULAR SPECIFICATIONS FOR DRILLING & CONSTRUCTION OF BOREHOLES

1 GENERAL PROVISIONS

1.1 Scope and Application

The work includes drilling borehole, installation of casings and screens; provision of gravel packing; development of the borehole; test pumping; obtaining rock and water samples; water quality analysis; platform casting and pump installation; as specified hereinafter and as directed by the **Engineer**.

1.2 Requirements of Specifications, Standards, Brand Names

a). The **Contract** should refer to recognised national industry standards or their international equivalent.

b). **BS 879 1985 Part 1 Steel Casings**. This specifies the diameter and minimum wall thickness of steel casings to use in boreholes.
All casings including temporary casings to be in good condition. (Alternatively API Specification 5L Grade B with minimum wall thickness as in **BS 879**).

c). **BS 3416: Type II Coating materials Clause 11**.
Permanent steel casings to be protected both externally and internally with suitable coating material.

d). **BS 879 Part 2 (1988). Thermoplastic Casing and Screen**.
This specifies the diameter and minimum wall thickness of thermoplastic liners and screens to use in boreholes. Where a geotextile wrap is specified then the micron size, layering and method of fixing (steel banding or preferably heat sealing) should be stated.

e). **BS 12 1991 Specification for Portland Cement.**
When grouting below the standing water level this should be carried out by a tremmie pipe inserted to the full depth of the borehole and progressively withdrawn as any temporary casing is extracted.

The minimum grout annulus should be 50mm and the grout mix specified (generally one part water to two parts ordinary Portland cement by weight).
Adequate setting period for the grout to be stated (generally 24 hours if drilling is to continue in the borehole after grout is placed).

f). **BS 14686; 2003. Test pumping of Water Wells.**
The Environment Agency Consent or SEPA licence document details the period of test pumping and the frequency of water level reading before and after testing for relevant boreholes.
Flow rates should be measured using at least one recently calibrated flowmeter.

1.3 Contractor's Work Programme

A Programme for the performance of the works as a whole and showing the proposed construction shall be submitted by each Tenderer with his quotation.

The Contractor shall, within 7 days after acceptance of the Contract, draw up the Work Programme, showing in detail the order in which the various parts of the Works are to be constructed, with dates of commencement and completion and where necessary, intermediate stages of works and the dates thereof.
The Programme must, where required by the **Engineer,** be accompanied by sketches showing in plan and sections the different stages of the Programme.
After approval by the **Engineer**, the Work Programme shall be binding on the Contractor. The contractor may make changes in the Programme only after prior approval has been obtained from the **Engineer,** which approval shall not be unreasonably withheld.

The Programme shall fully take into account and allow for the need to coordinate procedures of other Contracts in a methodical manner.

The **Engineer** shall be entitled at any time to demand changes in the Work Programme as he deems necessary for the proper and expedient performance of the Works.

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2. Classification of Formations & Drilling processes

Borehole drilling logs shall be classified as **soft, medium** and **hard** formations defined as below:

Soft - shall mean unconsolidated materials. Grain size range between clay cobble/and highly weathered rock.

Medium - shall mean unconsolidated materials. Grain size greater than cobble size/and moderately weathered rocks.

Hard- shall mean all undulated rocks. Degree of weathering from fresh to slightly weathered.

2.1 Site Details

2.1.1 General

The areas within the Site of the Works on which the **Contractor** shall be permitted to do his work, to assemble his equipment and tools, to erect his stores as well as the rights-of-way for access to the said areas mentioned herein will be provided by the Employer.

2.1.2 Royalties

Any royalties payable by the **Contractor** in respect of soils or rocks excavated, or land outside that made available free under the Contract, for the construction of permanent works, shall be reimbursed.

2.1.3 Access to Well Sites

The **Contractor** shall make good of and perform all work necessary for access to site.

2.1.4 Clearing up of Site

During the progress and on completion of the works, the **Contractor** shall clear up and remove from the surface of the ground all temporary buildings as per the **Engineer's** instructions.

The Contractor shall clear from the site plant, material, and debris resulting from demolitions, litter, rubbish, and surplus soil, which may be left on the ground or in and about the works or land temporarily occupied by the **Contractor.**
After completion of the Works the **Contractor** shall clean up the entire site and shall leave it in a neat and clean condition to the satisfaction of the **Engineer**.

2.2 Construction of the Borehole

2.2.1 General

All materials and workmanship shall be of the best quality throughout and shall comply with the relevant **latest edition** of American Petroleum Institute **(API)** or with equivalent **ISO** or **British Standards.**
All materials to be permanently built-in shall be new and shall be accompanied by **manufacturer's Certificates**, stating their compliance with this Specification and the standards mentioned therein and the name of the inspection authority.

2.2.2 Borehole Construction

The Contractor shall drill to the total appropriate depth depending on the geological formation and to a diameter that shall allow minimum borehole nominal diameter bore of **4 inches (103mm)** at the completion of the borehole, including casing installation.

It is anticipated that the borehole(s) shall be drilled to depth(s) up to ……. meters and shall consist of the following principal items:

a) Drilling in 12-inch diameter up to 10 meters, which will enable placing of 12-inch surface steel casing.

b) Drilling in 10-inch diameter up to 350 meters which will enable the placing of blind and slotted 8-inch steel casing.

Gravel pack may be required depending on site findings and only on written detailed instruction by the **Engineer**.
(A provisional sum has been included in the bill of quantities incase gravel pack is needed.)

The accurate placing of the screen (slotted casing) will be decided after running an electrical receptivity log.

Observation pipe of galvanized iron of ¾" diameter shall be installed in the annual space.
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2.2.3 Drilling Equipment

The Drilling rigs shall be capable of drilling to the **specified** depths and diameters and carrying out all subsequent operations required in this specification to render the borehole complete.

The **Contractor** shall permit the **Engineer** to inspect the rigs and the equipment at his disposal at the time of tendering.

2.2.4 Drilling Procedure

After the Contractor shall be assumed to have acquainted himself with the specific conditions of the sites to be drilled, and before the beginning of work, shall submit his detailed Programme of work.
The following is only a general description of the work to be carried out and specific details will be determined while drilling is in progress and more information is at hand about the geological formations.

The Contractor shall select the initial diameter of drilling in accordance with the equipment at his disposition and approved by the **Engineer.**

Whenever the nature of the geological formation is such that it is necessary to ensure the stability of the borehole, and/or that deposits are likely to fall in and/or be washed into the borehole, then the **Contractor** shall line the borehole to the satisfaction of the **Engineer** with suitable temporary casing.

The Contractor shall notify the **Engineer** in advance of each and every decrease in diameter of drilling.

The following shall apply to drilling with conventional drilling rigs:
The equipment shall be of the proper type and shall be in good condition so that the work can be done without any interruption. Drill collars of sufficient size and length shall be installed to maintain **verticality**.

Circulation of drilling fluid shall proceed continuously on a 24-hour-a-day basis whenever required. No unnecessary delays and work stoppages due to negligence or faulty operations on the part of the **Contractor** will be permitted. The **Contractor** shall be held responsible and payment shall be withheld for damage done to the well by negligence or faulty operation.

Foaming additives can be used in DTH drilling method. The selection, supply and use of drilling additives shall be the sole responsibility of the **Contractor**. Toxic or dangerous substances that may adversely affect the quality of the water shall not be added to the drilling fluid.
The **Contractor** shall be responsible for maintaining the quality of the drilling fluid to assure protection of water beading and potential aquiferous formations exposed in the well, good representative samples of the formation material should be recovered.

2.3 Casing for Permanent Use

2.3.1 General

Casing to be used for the conductor pipe shall be of the specified diameter. The casing pipe may be of the longitudinal screw type. However, different types of casing may be used subject to the Engineer's approval.
Casing to be used for the permanent inner casing and as permanent part of the borehole shall have the specified diameter (i.e. 12 inch for the surface casing and 8-inch Steel for the production line. The type and grade of casing shall be in accordance with API or ISO Standards.

2.3.2 Temporary Casings

Temporary casings under this specification are defined as temporary units or outer casings, which may be withdrawn when the permanent casing and screen are placed. The temporary outer casings intended for construction purpose only, shall be of such weight and design as necessary to prevent entrance of fine material, to be reasonably watertight, and to permit its installation without distortion or rupture to the specified depth and dimension.

2.3.3 Well Screens

Well screens of 6-inch steel or nominal diameter shall be provided for the boreholes as directed by the **Engineer.**

The length of active screen shall be determined in relation to the thickness of water-bearing strata and according to the driller's log and electrical log.

The screen shall be designed to produce a minimum loss of head or draw down between the water bearing strata, and the well and shall be of a standard manufactured type.

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The type of screen to be used shall be slotted type. Screen opening as approved by the **Engineer** shall preferably be V shaped, widening inward to permit fine particles to pass through without clogging during development of the borehole.

The total open area of the screens shall be at least 10% of the total pipe area.

2.4 Engineer's Approval for the Construction and Completion of Borehole

2.4.1 General

The **Contractor** shall present for the **Engineer's** approval his proposed material and construction methods for the completion of the borehole with regard to the following subjects:

a). completion of the borehole by natural development,

b). details of the screen including type and technical specification.

The **Contractor** shall construct the borehole as aforesaid on data and analysis of samples taken from the boreholes and other information obtained during drilling operations and to the **Engineer's** satisfaction.

In no case should the **Contractor** undertake the completion of a borehole prior to obtaining the **Engineer's** approval.

2.4.2 Grouting

The annular space between the surface casing and the wall of the drilled hole shall be filled with cement grout.

2.4.3 Withdrawal of Temporary Outer Casing

Temporary casings shall be gradually and carefully extracted to expose the screen completely in the water bearing formation.

The Contractor may leave the temporary casing in the borehole above the screen but no payment will be made for such temporary casing left in the borehole.

2.4.4 Testing for Verticality and Alignment

Verticality and alignment shall be tested by lowering into the housing line below ground surface a section of pipe **13m long** or a cylindrical dummy of the same length.

The outer diameter of the pipe used for this test (the plumb) shall be 12mm smaller than the diameter of that part of the casing or hole being tested, if a dummy is used, it shall consist of a 10 or 13m long galvanized rolled sheet metal.

Should the plumb or dummy fail to move freely throughout the length or the casing or hole to the bottom of the housing line or should the borehole very from the vertical in excess of 100mm per 30m of depth, or beyond limitations of this test, the plumpness and alignment of the borehole shall be corrected by the **Contractor** at his own expense.

Should the **Contractor** fail to correct such faulty alignment or verticality the **Engineer** may refuse to accept the borehole. The **Engineer** may waive the requirements of this paragraph for verticality if, in his judgment:
a). the contractor has exercised all possible care in constructing the borehole and the defect is due to circumstances beyond his control.
b). the usefulness of the completed borehole will not be materially affected.
c). the contractor shall, after completion of the test, prepare and submit to the **Engineer** a graph showing the verticality and alignment, or deviations there from for every 3m from ground level up to the bottom of the housing line.

2.5 Development of Boreholes

2.5.1 General

The Contractor shall furnish all necessary pumps, compressors, surge plungers, jets, bailers, and other needed equipment as well as equipment of approved size and type for measuring the water discharge and shall develop the well by such approved methods as shall be necessary to give the maximum yield of water per meter of draw down and extract form the water-bearing formation the maximum practical yield.

The developing process shall start immediately after the construction of the well and will be considered as completed when the borehole produces entirely clear water to the satisfaction of the **Engineer.**
The water shall be considered sand free when no samples taken during the pumping test contain more than 5 parts per million of sand size particles by weight. The **Engineer** may require additional development work aimed to further improve the specific capacity of the well.
Testing should not commence until complete development is achieved. Development process shall be carried out in the presence of the **Engineer** who will issue detailed instructions as the work proceeds. The **Contractor** shall advise the **Engineer** in sufficient time before starting the development of the borehole.

2.5.2 Airlift Development

Development by air compressor shall start immediately after well construction is completed and no elapsed time period shall be permitted. The airlift shall proceed systematically, from top to bottom until the discharge will be composed of load free clear water.
Changing to further development methods such as the usage of surge plunger, jetty tool and pump development shall be subject to the **Engineer's** approval.

2.5.3 Pumping Development:

Pumping Development shall consist of the following:
a). Pumping shall be carried out by pumping equipment shall be started with a lowest discharge rate and be continued until the water is clear of sand and the water level steady; it shall then be increased gradually and continued as above, and so on, in steps until the maximum discharge is reached. The pump shall be installed at the appropriate position of the housing line, along with a ¾" observation pipe connected to the rising main.

b). If during pumping in stages as above, the water level for a certain discharge steadies at a large drawdown without yielding clear water, then pumping shall be interrupted and resumed periodically (jerking method).

Observation records, **sampling observations** and **data to be recorded** and samples to be taken shall include the following:
i). Discharge-every hour.

ii). Water levels – Before pumping is started and thereafter at given time intervals coordinated with the Engineer while pumping proceeds.

iii). Samples for water analysis and for load content:

iv). Electrical Conductivity (EC) measurement and load test before and after every change of discharge and at every hour during the testing period. Water samples for chemical analysis at the end of the test and if any change in EC occurs shall be collected for laboratory analysis.

v). All observations including the date and hour shall be recorded clearly in a field notebook.

2.6 Testing for Yield and Draw Down

2.6.1 General:

After the well has been constructed and developed the **Contractor** shall notify the **Engineer** to that effect and shall make the necessary arrangements for conducting the final pumping tests.
Pumping tests shall follow immediately after the completion of the Development Works.

Besides these final tests the **Engineer** may order the **Contractor** to carry out such additional tests during and after construction, as he may deem necessary.

All tests shall be run with similar equipment and in a manner like that hereinafter described.
The **Contractor** shall furnish all labour, materials, equipment and supplies required and shall operate the pumping unit at such rates of discharge and for such periods of time as required for the execution of the tests.

2.6.2 Step Draw down Tests:

The following requirements shall apply to step drawdown and step recovery tests:
Before the test commences, a deep-meter, a stopwatch, and graph paper pad and pencil shall be on hand. The deep-meter shall be checked by lowering into the casing and a trial measurement shall be performed.

Once the equipment has been checked, at least three readings of the water level shall be taken during the half hour immediately preceding the test at ten-minute intervals to obtain the trend of the water level. If two of these are identical, it is possible to proceed with the test. If variations occur, the readings must continue for some time until a definite pattern is obtained.

The test shall cover at least four or five steps. During successive steps, the discharge shall be increased and water levels subsequently measured.
Discharges shall preferably, but not necessarily, be increased in steps of $0.2x\ Q_{max}$. The Q_{max} will be known approximately from the pumping development stage.
The test shall commence with the lowest envisaged discharge rate.

Water levels shall be recorded during this time at intervals as follows for each of the steps:

Every 1 Minute	From 1- 10 Minutes of Pumping
" 2 "	" 10-20 "
" 5 "	" 20-50 "
" 10 "	" 50-100 "
" 20 "	" 100- 180 "
" 30 "	" 180 – 360 "
" 60 "	After more than 6 hours

During this time the discharge rate shall be kept constant and recorded periodically.

The duration of each step shall be in no case less than 90 minutes, and if necessary longer, until a stable dynamic water level has been achieved.

At successive steps, the procedure for recording water levels and rates of discharge shall be repeated. The discharge rates of each subsequent step shall be increased by at least 50% of the of the preceding step until the maximum discharge is attained.
A similar procedure shall be followed when a reverse step test is carried out.

At the start of a reverse step test pumping from the borehole shall be at the maximum discharge and the dynamic water level shall be stable. Discharge and water levels shall be recorded. In the first step, the discharge shall be decreased.
The following steps will be in the same pattern as the conventional step draw down test.

The consistency of the arrayed discharge/draw down readings, i.e. the anticipated rectilinear regression line, is to be checked in the field.

Should further development of the well be decided upon, another step-draw down test shall be carried out at the well after the additional development.

Draw down and Recover Test: the following shall apply to draw down and recovery tests:
Draw down and recovery tests shall be carried out in wells after development and the step draw down test have been completed.
Tests shall commence after a stable water level trend has been ascertained.
During the draw down test, the discharge to be determined by the **Engineer** (most probably Q_{max}) will be constant at all times.
The time of its start will be noted by use of a stopwatch.
Water levels will be recorded immediately preceding the start, and then at the following intervals of time in minutes.
The test shall be continued at least for 72 hours or may be terminated earlier in case the dynamic water level has stabilized for more than 8 hours.

At the end of a draw down test, a recovery test will be carried out. This test is a mirror image of a draw down test. The time at which recovery commences, is when pumping stops. This time is recorded, and water levels are recorded at the same time interval arrangement as previously noted.

2.7 Pumping Equipment for development and testing

The **Contractor** shall furnish and install the necessary pumping equipment consisting of a sufficient number, capable of pumping to a maximum discharge of 2 - 5 l/s with a head of 150 meters.
Satisfactory throttling devices or other approved devices shall be provided so that the discharge may be controlled as required.

The pump shall be a **vertical turbine pump**, oil or water lubricated or any other submersible pump type of pump **approved** by the **Engineer** and shall be in good running condition.
The pumping unit shall be complete with prime mover of ample power, controls and appurtenances and shall be capable of being operated for long periods without interruption.

The pump base shall have a suitable opening for inserting a water level measuring device. The **Contractor** shall make available on site during pumping test program, at least two such pumps.

The contractor shall also furnish, install and maintain equipment of approved size and type for measuring the flow of water, such as a weir tank, orifice or water meter. A regulation valve shall be inserted into the discharge pipe just outside the pump head.

2.8 Recording and reports of development and testing

The results of all tests shall be recorded in the form prescribed by the **Engineer** and full test reports shall be transmitted to the **Engineer's** office within ten days after the completion of the tests.

2.9 General requirements for analysis of water quality

Field and laboratory analyses of water quality shall be carried out by the contractor with equipment and by methods approved by the **Engineer.**
The number of samples to be taken and to be analyzed shall be at least two per borehole or as directed by the **Engineer.**

Each sample shall be properly recorded, stating date and time number of borehole and depth from which the sample was taken.

Reports of the results of the analysis shall be submitted to the **Engineer** in triplicate within 15 days

2.9.1 Field and laboratory analysis of water quality

The following water analysis shall be carried out:

a) Field tests: Temperature, pH and Electrical conductivity

b) Laboratory Tests

General Parameter	Major cations	Major anions
Electrical Conductivity (EC)	Calcium (Ca^{2+})	Chloride (Cl^{-})
PH	Magnesium (Mg^{2+})	Fluoride (F^{-})
Total Dissolved solids	Sodium (Na^{+})	Carbonate (CO_3^{2-})
Alkalinity Hardness	Potassium (K^{+})	Bicarbonate (HCO_3^{-})
	Iron (Fe^{3+})	Sulphate (SO_4^{2-})
	Manganese (Mn^{2+})	Nitrate (NO_3^{-})
		Phosphate (PO_4^{3-})
		Borate (BO_3^{3-})

2.10 Daily Reports

The contractor shall submit a daily report describing the nature of material encountered, the work done during each day, including such items of work accomplished as depth drilled, casing set, Lithology and the water level in the well at the beginning and end of each shift and such other pertinent data as he is requested to record by the **Engineer.**

2.11 Working records and samples

The contractor shall furnish to the Engineer, in a form to be approved, the following records and samples:

Identification and lithology of formations

The **Contractor** shall keep an accurate record of the materials encountered during the drilling of the borehole and shall make every endeavor to describe accurately the formation layers.

The **Contactor** shall also ensure that the description of the formation samples given by him is sufficiently accurate to permit the identification of both lithology of the formation penetrated by the borehole and the stratigraphical succession.

Representative samples shall be taken at fixed intervals of not more than 2m and at each change in formation. Samples and cores shall be stored temporarily until completely dry, in wooden or aluminum alloy boxes with compartments on which the depth interval represented by each sample shall be clearly marked.

Records of water levels

The contractor shall keep an accurate record of the depth at which the water level stabilizes as each auriferous unit is encountered and of the depth of the top and bottom of each stratum penetrated.

Records of casing and screen pipes

The **Contractor** shall keep exact record of the order in which each length of pipe is installed in the well, identifying each one by number, size and length.

Records of verticality and alignment

As per **Clause 2.4.4**

Records of pumping tests

The **Contractor** shall keep exact record of all data pertinent to pumping tests specified under **Clause 2.6**

Records of water analysis

The **Contractor** shall keep a complete record of all water analyses as set out in **Clause 2.9.** All samples and records shall be submitted to the **Engineer** during the progress of work as and when required by him.

Capping of Boreholes

On completion of the borehole, concrete slab shall be cast around the upper part of the surface casing to a depth of 20 cm dimensions as directed by the **Engineer** and so as to fill the space between the surface casing and the wall of the borehole.

The top of the permanent casing shall reach 20cm above normal ground level. The conductor pipe (surface casing) around the inner casing shall be raised at least 30 cm above the inner casing and then capped properly by welding 6mm thick steel plate to secure the well.

An appropriate socket and plug is to be installed in the steel cap to enable static water level through observations pipe.

Completion of Borehole

Upon the completion to the **Engineer's** satisfaction of all work and tests and submittal of all records and reports as set out under this specification, or required by the Engineer during the execution of the borehole, the **Engineer** will issue a certificate of completion for each borehole as and when completed.

Borehole Completion report

A full borehole completion report shall be prepared by the contractor and submitted to the **Engineer** within ten days of the completion of the pumping tests. The borehole completion report shall be prepared in the form prescribed by the **Engineer** and shall include the following:

a). **A borehole log**, showing: borehole location, ground surface elevation, measuring point elevation, soil strata, static water level and dimensions of casing, screen, grounding and cap.

b). Pumping tests reports

c). Result of analysis of water

d). All other records as specified.

2.12 Clean up

After the borehole has been completely constructed, its environs shall be thoroughly cleaned of all foreign substances, including tools, timbers, ropes, debris of any kind, cement, oil grease, joint dope and scum.

2.12.1 Protection of borehole

At all times during the progress of the work, the **Contractor** shall protect the borehole in such a manner as is effective to prevent either tampering with the borehole or the entry of foreign matter into it.

2.12.2 Precautions against contamination

The **Contractor** shall take such precautions as are necessary at any time or as may be required permanently to prevent contaminated water having undesirable physical or chemical characteristic from entering the stratum from which the borehole is to draw its supply.

He shall also take all necessary precautions during the construction period to prevent contaminated water, gasoline, or any other contaminate from entering the borehole either through the opening or by seepage through the ground surface.

In the event that the borehole becomes contaminated or that water, having undesirable physical or chemical characteristics, enters the borehole because of negligence by the **Contractor,** he shall, at this own expense, perform such work or supply such casing, seals, sterilizing agents or other material as may be necessary to eliminate the contamination or shut off the undesirable water.

2.12.3 Freedom from load and turbidity

The **Contractor** shall exercise extreme care in the performance of his work in order to prevent the breakdown or caving-in of strata overlying that from which the water is to be drawn.

He shall develop, pump, or bail the borehole by such methods as may be approved by the **Engineer**, until the water pumped from the borehole shall be substantially free from load and until the turbidity is less than 5 mg/l.

2.13 Stoppage of Drilling

The **Engineer** reserves the right to stop drilling operations at any depth of the borehole:
a). When the **Engineer** considers that a sufficient supply of water has been obtained,

b). When the **Engineer** considers that further drilling is unlikely to be advantageous,

c). If the **Engineer** considers that the work is not being carried out in a satisfactory manner.

2.14 Abortive boreholes

Any borehole, which on completion yields less water than in the opinion of the **Engineer** is necessary to render it of use, shall be considered as an abortive borehole. In this case the **Contractor** will be paid for drilling of the borehole at the appropriate rates in the bill of quantities. The abandoned borehole shall be sealed.

2.15 Failure to complete a borehole

Should the **Contractor** fail to comply with the requirements of this specification or should the contractor fail to complete the borehole due to loss of tools or any other cause, and the borehole as a result thereof, has to be abandoned, then the **Engineer** shall have the right to instruct the **Contractor** to commence a new borehole as near as practicable to the abandoned one and no payment will be made for drilling the abandoned borehole, or any other work carried out in it, or for the casing or other materials used therein.

The **Contractor** shall seal the borehole at his own expense, within one month after he has been instructed to seal it as described in **Clause 2.16**.
Salvaged material furnished by the **Contractor** shall remain his property.

2.16 Sealing of abandoned or abortive boreholes

Abandoned or abortive boreholes shall be sealed by filling with concrete, grout, neat cement, clay or clay and sand.

In the event that the water bearing formation consists of coarse gravel and producing wells are nearby, care must be taken to select sealing materials that will not affect the producing wells.

Concrete may be used if the producing wells can be shut down for a sufficient time to allow the concrete to set. Clean, disinfected sand or gravel may also be used as fill material opposite the water-bearing formation.

The remainder of the well, especially the upper portion, shall be filled with clay, concrete, grout, or neat cement to exclude surface water. The latter method, using clay as the upper sealing material, is especially applicable.

2.17 Electric logging

Electric logging shall be conducted in successful boreholes The obtained electric logs shall verify and supplement the descriptive logging of the borehole recorded by the contractor as drilling proceeds, as to the following: - Details of the litho logical profile - Depth of aquifers

Instrumentation for electric logging shall be of the two electrodes "normal device" type. One electrode shall be for the measurement of self-potential (SP), and the other electrode for the measurement of the apparent resistivity (R). All equipment and instruments used for electric logging shall be to the approval of the **Engineer**.
The **Contractor** shall carry out the required operations by personnel skilled both in conducting the measurements and the interpretation of the results. The operation shall be as follows:

a). Electric logging shall be conducted in uncased boreholes upon completion of the drilling of the pilot holes (before reaming).

b). The drilled hole shall be cleaned by circulation of drilling fluid and its depth measured.

c). The electrode cables shall be lowered into the borehole while at the same time measuring the depth.

d). The logs shall be taken from the bottom of the borehole upwards while the cable is taut over its entire length.

Upon completion of all operations the **Contractor** shall provide the **Engineer** with the electric logs comprised of **SP** curve and **R** curve, together with their interpretation.

Gamma or neutron logs on top of SP and resistivity logs are preferred. Should the **Engineer** refuse to accept the results of the logging because of technical faults then the **Contractor** shall repeat the measurement until satisfactory results are obtained.

2.18. Environmental guidelines and code of conduct

Groundwater exploration and development work should be conducted in an environmentally and socially sensitive and responsible manner.

These guidelines are intended to ensure that all parties are aware of the potential impacts of their activities, and carry out the work in an appropriate way.
These guidelines are a written statement of intent for Contractors to adhere to, and to which recourse can be made in the event of a perceived undesirable impact.

Contractors are required to familiarise all employees with the content and spirit of these guidelines.
This document will also be made available to State authorities for their use in similar work.

2.18.1. Camps

If and where field camps are needed, their construction and removal should be carried out along the following lines:
Permission for camp areas must be obtained in writing from the relevant local authorities.

Suitable latrines and other sanitary arrangements at the camps and sites where work is in progress should be availed to the crew.
Access roads and the camp area should be sited to cause minimum disturbance.

No trees should be cut down, the use of firewood must be restricted to dead wood only and should not conflict with the needs of the residents of the area.

No permanent structures should be built at the camp.

The camp should be removed; the site cleared and cleaned free of all debris, waste and hydrocarbons at end of the **Contract** and local authorities should be shown the cleared site.

All rubbish (except for oils and other mechanical or chemical waste) should be buried or removed. Waste oils, chemical and mechanical waste should be stored and removed to Government/Municipal designated dumping sites or recycling plants.

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2.18.2. Human Relations

People, water, land and livestock must be respected.
Access routes should not normally transgress gardens. But if found necessary, permission to enter the gardens must be sought from the owner.

Work should be done with minimal damage to fences, trees or crops. All conflicts / disagreements and any agreements (use of water supply etc.) no matter how trivial, must be logged and dated, with details of persons involved and subject matter, in a book for this purpose at the base camp.

2.18.3. Drillings Sites

Each drilling site should be completely cleared of all waste after use. Drilling waste (chippings and mud) should be buried.

Rubbish, waste oil and chemicals should be returned to the main camp for disposal as outlined in one (1) above.

No spillage of oils or fuels should occur. On completion of each borehole the site must be left clean and free from all debris, hydrocarbons and waste, and all pits filled to the satisfaction of the Supervisor.

BILLS OF QUANTITIES
AND
SCHEDULE OF UNIT RATES

BILLS OF QUANTITIES AND SCHEDULE OF UNIT RATES

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1.01: SPECIAL NOTES

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

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

   In accordance with Government policy, **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 thereof.

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

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

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender for the tender to be deemed valid**.

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

1.02: STATEMENT OF COMPLIANCE

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

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

Signed: ……for and on behalf of the Tenderer

Date: ……..

Official Rubber Stamp: ……

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

b. Installation Items – Other Bills

i. The brief description of the items in these Bills of Quantities should in no way modify or supersede the detailed descriptions in the contract Drawings, conditions of contract and specifications. ii. The unit of measurements and observations are as per those described in clause 3.05 of the section

c. Summary

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

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
1.0	BILL NO.1: PRELIMINARIES				
1	Discrepancies clause 1.02	1	Item		
2	Conditions of sub-contract Agreement clause 1.03	1	Item		
3	Payments clause1.04	1	Item		
4	Site location clause 1.06	1	Item		
5	Scope of Contract Works clause 1.08	1	Item		
6	Extent of the Contractor's Duties clause 1.09	1	Item		
7	Firm price contract clause 1.12	1	Item		
8	Variation clause 1.13	1	Item		
9	Prime cost and provisional sum clause 1.14	1	Item		
10	Bond clause 1.15	1	Item		
11	Government Legislation and Regulations clause 1.16	1	Item		
12	Import Duty and Value Added Tax clause 1.17	1	Item		
13	Insurance company Fees clause 1.18	1	Item		
14	Provision of services by the Main contractor clause 1.19	1	Item		
15	Samples & Materials Generally clause 1.21	1	Item		
16	Supplies clause 1.20	1	Item		
17	Bills of Quantities clause 1.23	1	Item		
18	Contractor's Office in Kenya clause 1.24	1	Item		
19	Builder's Work clause 1.25	1	Item		
20	Setting to work and Regulating system clause 1.29	1	Item		
21	Identification of plant components clause 1.30	1	Item		
22	Working Drawings clause 1.32	1	Item		
23	Record Drawings (As Installed) and Instructions clause 1.33	1	Item		
24	Maintenance Manual clause 1.34	1	Item		
25	Hand over clause 1.35	1	Item		
26	Painting clause 1.36	1	Item		
27	Testing and Inspection – manufactured plant clause 1.38	1	Item		
28	Testing and Inspection – Installation clause 1.39	1	Item		
29	Storage of Materials clause 1.41	1	Item		
30	Initial Maintenance clause 1.42	1	Item		
31	Attendance Upon Tradesmen, etc. (Insert percentage only) clause 1.58				
32	Local and other Authorities notices and fees clause 1.60	1	Item		
33	Temporary Works clause 1.63	1	Item		
34	Patent Rights clause 1.64	1	Item		
35	Mobilization and Demobilization Clause 1.65	1	Item		
36	Extended Preliminaries Clause 1.66(see appendix on page C- 24)	1	Item		
37	Supervision by Engineer and Site Meetings Clause 1.67	1	Item	300,000.00	300,000.00
	Sub-Total for Preliminaries c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total for Preliminaries b/f from Previous Page				
38	Allow for profit and Attendance for the above		%		
40	Contractor Obligation and Employers		Item		
41	Obligation clause 1.69(see appendix page C- 24)		Item		
42	Any other preliminaries;				
	i) Continuous Professional Development Courses and registration fees at the Kenya School of Government (KSG),Institute of Engineers of Kenya(IEK) and Engineer's Board of Kenya (EBK)	1	Item	200,000.00	**200,000.00**
	Allow for profit and Attendance for item (i) above		%		
	ii) Allow for airtime for the period of the project	1	Item	**100,000.00**	**100,000.00**
	Allow for profit and Attendance for item (i) above		%		
	Total for Preliminaries Carried to Summary Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	GROUND FLOOR				
	SANITARY FITTINGS				
	Supply the following appliances including their support brackets, screws etc. and their connection to water supply, waste/soil drainage and electrical power supply:-				
	NOTE: TRADE NAMES				
	Supply, deliver, install and fix the following sanitary fittings including all materials and jointing to supply, waste/soil and overflow pipes. Brand names are specified only as an indication of quality. Equal and approved appliances may be supplied. Where trade names are mentioned, the ref. no. is intended as a guide to the type and quality of fittings				
A	**Water Closet (WC) Pan**				
	Round rimfree wall hung WC suite **i)WC pan** - horizontal outlet **(E11798WH);** **ii) Seat and cover,** quick release hinge, soft closing mechanism **(E17857WH)**; **iii) Fixings-** supporting bracket and fixing kit (**SR8138XX**), supporting brackets screwed to floor for non - load bearing walls, up to 100mm thick; **iv) WC outlet connector:** -P trap outlet connector (**WF1240WH**) -S trap connector (**WF1241WH**); **v) Material**-Vitreous china. **vi) Colour** - White (**WH).** All as Twyford or approved equivalent.	No	16		
	Water Closet (WC) Squatting Pan				
A	One-piece body Squatting pan WC pan made of AISI 304 **stainless steel** of thickness 1.5 mm & satin finish,complete with Vandal-proof finishes,Two frontal flush nozzles to clean the squatting pan,Recessed mounted, Anti-slip furface, P trap outlet connector, inlet connector & rubber & 2 No. inlets of 40mm, plastic flushpipe with clips, fixing screws and all oher accessories necessary for correct use of the suite. To be as "Mediclinics 'SNPT01CS'" or an equal & approved equivalent	No	6		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
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	No	22		
	Bidet Faucet sprayer set				
D	Power spray bidet kit c/w 1/2" female inlet x 1 /2" Male Outlet. Spray Kit to be embed on wall mount water supply. Cradle to have positive shut off.The kit shall be complete with Bidet Handshower, Water supply elbow with shut off valve, Chrome plated hose, Dual check valve, backflow preventer and 49" hose. The hand held bide rose to be as "Docol Trio Line Shataffa #00502506" or an approved equivalent	No.	22		
B	**Belfast London Sink**	No	1		
C	**Urinal bowls**				
	1 No. ceramic urinal bowl comprising of dimensions 305 x 445 x 375mm in white vitreous china and fittings including siphon ball valve, supports, 40mm heavy duty stainless steel bottle trap, 40mm diameter chrome plated outlet with grating, visible inlet & firmly fixed on the wall with chrome plated screws and wall hangers. The fittings shall be as 'Duravit D-Code' or an equal & approved equivalent.	No.	4		
	Urinal Divider				
C	1 No. urinal divider of dimensions 620mm height in white vitreous china firmly fixed on the wall with chrome plated screws and wall hangers. The fittings shall be as Duravit or an equal & approved equivalent.	No.	3		
	Urinal Electronic Flush Valves				
D	32mm urinal bowl Dual Electronic Presence Sensor 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 as "Sloan ECOS" or equivalent	No.	4		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
E	**Complete disabled toilet** Low level wash down water closet suite for the elderly and disabled in white complete with horizontal outlet and bottom supply and overflow with close coupling bside lever treatment, 7.5 litre cistern, raised heavy duty toilet seat, cover and S-trap outlet and 600 * 35mm stainless steel grab rails **(5No.)**. The set to be complete with **half pedestal wash hand basin**,chrome plated non-concussive time delay press action **pillar tap**, 6mm thick **mirror, toilet roll holder** and **robe hook**. All to be as "Twyfords Avalon BTW" or approved equivalent.	Set	1		
F	**Wash hand basin** Countertop wash hand basin size 575 x 500mm with one tap hole, 32mm diameter chrome plated waste and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. To be as Tapis "Vanity Basin #LVA1290" or equal and approved.	No.	21		
	Mixer Faucets				
F	Executive Electronic Presence Sensor Action Luxury Basin Mixer Faucet for Hot and Cold with Flow rate of 4.5L/min . Tap to to have a rechargeable battery, Aerated spray and Cartdridge to be made of Ceramic . Faucet to be as "Hansgrohe- Talis S SingleHole Faucet 80" or equivalent	No.	21		
G	**Kitchen sink**				
A	Double bowl, Double drainer kitchen sink made of stainless steel with satin surface, of size 147 x 440mm. The bowl size to be 420 x 355 x 350mm deep complete with chrome plated 40mm waste fittings, plugs, chain stays, overflow, chrome plated bottle trap with 75mm deep seal and chain waste fitting,1No.15mm chrome plated deck mounted. To be as 'Dali FF14744AR' or approved equivalent	No.	2		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Kitchen Mixer				
B	Heavy duty chrome plated hot & cold kitchen sink mixer with swivel overarm outlet, single swing lever,aerator cartridge. To be as **'Tapis Yolanda #WDG56431C'** or approved equivalent.	No.	2		
	Towel Rail				
C	Twyfords Bathrooms Ltd Ref. No. PB 0363 CP chrome plated screw to wall Towel Rail 650mm long complete with screws.	No.	2		
E	**Undersink water heater**: 10 Litres glass lined(enamelled) steel heater vessel complete with 2.2 kW element, external rhermostat adjustable up to 65^0 .Such as "Bosch or approved equivalent	No.	2		
E	**Hand drier**				
	Automatic hand drier in white steel, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m3/min) and to be of size 270x264x143mm deep It shall have a noise level below 72.5 dBA at 1.5m. It shall be as Medclinic or approved equivalent.	No.	6		
F	**Mirrors** 6mm thick polished plate glass, silver backed mirror with beveled edges, size 610x497mm plugged and screwed to wall with 4No. Chrome plated chrome capped screws and 5mm thick foam back nest.	No	21		
G	**Robe hook** Robe hook in vitreous china and in white colour mounted unto a concealed screw to wall wedges, to be as Twyfords OC 6858 1998 or approved equivalent.	No	22		
	Toilet brush holder				
D	Toilet brush holder made of AISI 304 stainless steel in satin finish,complete with Sisal fibre brush & assembling plate for mounting on the wall. Body thickness 0.4mm, Handle and lid thickness 0.4mm & Rod thickness 0.8mm. Toilet brush holder to be as Mediclinics 'ES0968CS' or equal and approved.	No.	22		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Soap Dispenser				
D	Soap Dispenser made of AISI 304 stainless steel of thickness 0.8mm & matte black epoxy finish,vandal resistant casing,Stainless steel push-button,Corrosion-resistant anti-drip valve,Inner tank 2.5 mm thick made of translucent polypropylene,Hinged cover with Opening on top capacity 1.5 litres complete with rawl plugs, fixing screws, lock and key complete with initial fill of soap gel.It shall dispense 1.5 ml per pump & be suitable for Liquid soaps and hydroalcoholic gels The soap dispenser to be as MEDICLINICS model DJ0031B, size 110 x 133 x 240mm (L*W*H) or approved equivalent.	No.	12		
	Paper towel dispenser				
E	Wall mounted paper dispenser for dispensing interfolded paper tissue. The dispenser shall have a fully welded structure, Door fixed to the body with two rivets allowing it to be swung open for paper replacement, Front lock with a standard Mediclinics key provided, Content viewer on the front, Back-plate with multiple slots for easy installation. It shall have a capacity of 400-600 C/Z towels, dimensions 275*130*330mm (L*W*H),made of AISI 304 stainless steel with satin finish. It shall be as MEDICLINICS model DT2106CS include a casing having a narrow dispensing slot in the bottom surface. The dispenser should have a proper mechanism to prevent excessive quantities of tissue. It shall be as MEDICLINICS model DT2106CS or approved equivalent.	No.	8		
	Toilet roll holder				
B	Toilet roll holder made of AISI 304 stainless steel in satin finish . To have a support of thickness 0.8 mm with trim and chromated plastic spindle. It shall have plate thickness of 1.6mm. Toilet roll holder to be as MEDICLINICS model 'AI0113CS' accessories Ref. No. VC 9808 WH.	No.	22		
	Sub-Total for Sanitary Fittings C/F to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
3.20	**Internal Plumbing**				
	Supply, deliver and install chlorinated polyvinyl chloride (CPVC) pipes, tubing and fittings as described and shown on the drawings. The pipes and fittings shall be produced as per SDR 11 for sizes upto 2" and Schedule 40 for sizes above 2" upto 4". They shall meet or exceed the requirements of ASTM D 2846, current European standards for CPVC installations and to the Engineers approval. All joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493.				
	Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed, brackets and pipe sleeves through structural members for the proper and satisfactory functioning of the system. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
	Cold water & Hot Water CPVC Pipes				
A	15 mm dia. CPVC Pipes. surface mounted.	Lm	15		
B	20mm diameter pipework	Lm	20		
C	25mm diameter pipework	Lm	20		
D	32mm diameter pipework	Lm	20		
E	40mm diameter pipework	Lm	40		
F	50mm diameter pipework	Lm	20		
G	65mm diameter pipework	Lm.	15		
H	75mm diameter pipework	Lm.	25		
	Bends				
	15mm diameter CPVC 90° elbow	No.	10		
F	20mm diameter bends	No.	4		
G	25mm diameter bends	No.	4		
H	32mm diameter bends	No.	4		
I	40mm diameter bends	No.	4		
J	50mm diameter bends	No.	4		
	Tees				
A	25mm equal Tees	No.	12		
B	32mm equal Tees	No.	12		
C	40mm equal Tees	No.	18		
D	50mm equal Tees	No.	9		
	v) 50*40*50 mm reducing Tee	No.	5		
	vii) 40*32*40 mm reducing Tee	No.	3		
	vi) 65*50*65 mm reducing Tee	No.	2		
	vii) 75*65*75 mm reducing Tee	No.	2		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Reducers				
E	25 x 20mm diameter reducer	No.	12		
F	32 x 20mm diameter	No.	12		
G	32 x 25mm diameter	No.	12		
H	40 x 20mm diameter	No.	12		
I	40 x 25mm diameter	No.	12		
J	40 x 32mm diameter	No.	12		
K	50 x 25mm diameter	No.	12		
L	50 x 32mm diameter	No.	12		
M	50 x 40mm diameter	No.	12		
	Unions				
P	32mm diameter pipe unions	No.	5		
Q	40mm diameter pipe unions	No.	5		
	50mm diameter pipe unions	No.	5		
	Plugs				
D	40mm diameter pipe threaded plug	No.	10		
E	50mm ditto	No.	10		
A	15mm dia chrome plated **flexible connection**	No.	21		
B	15mm dia **Angle valve** as Cobra or equal & approved	No.	21		
C	**Brass FPT 90° Bends/Elbows**				
	i) 15mm diameter CPVC 90° brass FPT elbow	No.	30		
	ii) 20*15mm diameter CPVC 90° brass FPT elbow	No.	20		
	iii) 40mm diameter CPVC 90° brass FPT elbow	No.	20		
D	**Brass FPT 90° Tee**				
	i) 15*15*15mm diameter CPVC brass FPT Tee	No.	15		
	ii) 20*15*20mm diameter CPVC 90° brass FPT Tee	No.	15		
	iii) 25*15*25mm diameter CPVC brass FPT Tee	No.	15		
	iv) 32*15*32mm diameter CPVC 90° brass FPT Tee	No.	25		
	v) 40*32*40mm diameter CPVC brass FPT Tee	No.	10		
	vi) 50*40*50mm diameter CPVC 90° brass FPT Tee	No.	10		
	Valves				
F	25mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 5154 PN 20 for series B rating, with wheel and head joints to steel tubing and complete with round male threaded transition fittings. The gate valve to be as PEGLER or approved equivalent.	No.	5		
G	32mm ditto	No.	8		
H	40mm ditto	No.	8		
I	50mm ditto	No.	8		
J	32mm non-return valve	No.	8		
K	32mm medium pressure ball valve	No.	8		
	Pipe Sleeves				
L	65mm diameter heavy duty PVC pipe sleeves for crossing over columns and beams.	Lm	20		
	Sub-Total for Internal Plumbing C/F to collection page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	INTERNAL FOUL WATER DRAINAGE				
	Supply, deliver and install the following UPVC, MUPVC, soil and waste systems respectively to B.S 5255 with fittings fixed to Manufactures 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 pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	MuPVC and uPVC Waste and Soil pipework				
A	100mm dia. heavy gauge golden brown UPVC pipe	64	Lm		
B	100mm diameter heavy gauge grey mUPVC pipe	30	Lm		
C	75mm diameter heavy gauge grey mUPVC pipe	36	Lm		
D	50mm diameter waste pipe	48	Lm		
E	40mm diameter waste pipe	48	Lm		
F	32mm diameter waste pipe	32	Lm		
	Bends				
G	100mm diameter bend with access	5	No.		
H	100mm diameter long radius bend	3	No.		
I	75mm diameter long radius bend	6	No.		
J	100mm diameter sweep bend	4	No.		
K	50mm diameter sweep bend	6	No.		
L	40mm diameter sweep bend	7	No.		
M	32mm diameter sweep bend	8	No.		
	Tees				
A	50mm diameter sweep tee	6	No.		
B	40mm diameter sweep tee	4	No.		
C	32mm diameter sweep tee	3	No.		
	Access Caps				
D	50mm diameter access cap	5	No.		
E	40mm diameter access cap	8	No.		
F	32mm diameter access cap	6	No.		
	Boss Connectors				
G	75 x 40mm diameter boss connector	2	No.		
	Reducing Sockets				
H	100 x 75 reducing socket	3	No.		
I	100 x 50 reducing socket	5	No.		
J	50 x 32 reducing socket	4	No.		
K	40 x 32 reducing socket	4	No.		
	WC Connectors				
L	100mm diameter WC connector	9	No.		
M	100mm single branch	12	No.		
N	100mm access plug	4	No.		
O	100mm short radius	4	No.		
P	100mm long radius	4	No.		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Traps				
M	100 x 50mm diameter **stainless steel** floor trap with cover and grating	3	No.		
N	100 x 100mm diameter **stainless steel** floor drain with cover and grating	3	No.		
O	Standard 300 x 300 x 450mm masonry gully trap, approximately 400mm deep in 150mm block work with cement mortar joints, on 150mm thick mass concrete slab,plastered inside, 100mm trap and hopper. 40mm thick, 250x250mm p.c.c. cover to gully trap chamber and provided with 40mm ventilating hole	4	No.		
	ii) **Grease tra**p consisting 3 No. chambers, each of size 250x250mm, approximately 400mm deep made of stainless steel and provided with 40mm ventilating hole. To be as constructed by Orbit Engineering Ltd	1	No.		
D	**Inspection Chamber**				
	ii) Inspection chamber size 600x450mm, averaging 750mm deep constructed in 100mm thick concrete base (1:3:6), approved 150mm block sides rendered all around in cement and sand (1:4). It shall have an approved heavy duty polysynthetic manhole cover size (18" x 24") as **Kenbro A-50**. Include all necessary excavations, disposal and form work.	13	No.		
	Weathering Slates and Vent Cowls				
P	100mm diameter weathering slate and apron.	3	No.		
Q	100mm diameter vent cowl	3	No.		
R	75mm diameter weathering slate and apron.	2	No.		
S	75mm diameter vent cowl	2	No.		
	Sub-Total for Internal Foul Water Drainage C/F to collection page				

COLLECTION PAGE FOR GROUND FLOOR PLUMBING AND DRAINAGE WORKS

Item	Description		Amount due
4	Total carried forward from Sanitary Fittings		
5	Total carried forward from Internal Plumbing		
6	Total carried forward from Internal Foul Water Drainage		
	Total P&D for Ground floor C/F to Plumbing and Drainage Works Collection Page		

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	FIRST FLOOR				
	SANITARY FITTINGS				
	Supply the following appliances including their support brackets, screws etc. and their connection to water supply, waste/soil drainage and electrical power supply:-				
	NOTE: TRADE NAMES				
	Supply, deliver, install and fix the following sanitary fittings including all materials and jointing to supply, waste/soil and overflow pipes. Brand names are specified only as an indication of quality. Equal and approved appliances may be supplied. Where trade names are mentioned, the ref. no. is intended as a guide to the type and quality of fittings				
A	**Water Closet (WC) Pan**				
	Round rimfree wall hung WC suite **i)WC pan** - horizontal outlet **(E11798WH);** **ii) Seat and cover,** quick release hinge, soft closing mechanism **(E17857WH)**; **iii) Fixings-** supporting bracket and fixing kit (**SR8138XX**), supporting brackets screwed to floor for non - load bearing walls, up to 100mm thick; **iv) WC outlet connector:** -P trap outlet connector (**WF1240WH**) -S trap connector (**WF1241WH**); **v) Material**-Vitreous china. **vi) Colour** - White (**WH).** All as Twyford or approved equivalent.	No	16		
	Water Closet (WC) Squatting Pan				
A	One-piece body Squatting pan WC pan made of AISI 304 **stainless steel** of thickness 1.5 mm & satin finish,complete with Vandal-proof finishes,Two frontal flush nozzles to clean the squatting pan,Recessed mounted, Anti-slip furface, P trap outlet connector, inlet connector & rubber & 2 No. inlets of 40mm, plastic flushpipe with clips, fixing screws and all oher accessories necessary for correct use of the suite. To be as "Mediclinics 'SNPT01CS'" or an equal & approved equivalent	No	6		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
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	No	22		
	Bidet Faucet sprayer set				
D	Power spray bidet kit c/w 1/2" female inlet x 1 /2" Male Outlet. Spray Kit to be embed on wall mount water supply. Cradle to have positive shut off.The kit shall be complete with Bidet Handshower, Water supply elbow with shut off valve, Chrome plated hose, Dual check valve, backflow preventer and 49" hose. The hand held bide rose to be as "Docol Trio Line Shataffa #00502506" or an approved equivalent	No.	22		
B	**Belfast London Sink**	No	1		
C	**Urinal bowls**				
	1 No. ceramic urinal bowl comprising of dimensions 305 x 445 x 375mm in white vitreous china and fittings including siphon ball valve, supports, 40mm heavy duty stainless steel bottle trap, 40mm diameter chrome plated outlet with grating, visible inlet & firmly fixed on the wall with chrome plated screws and wall hangers. The fittings shall be as 'Duravit D-Code' or an equal & approved equivalent.	No.	4		
	Urinal Divider				
C	1 No. urinal divider of dimensions 620mm height in white vitreous china firmly fixed on the wall with chrome plated screws and wall hangers. The fittings shall be as Duravit or an equal & approved equivalent.	No.	3		
	Urinal Electronic Flush Valves				
D	32mm urinal bowl Dual Electronic Presence Sensor 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 as "Sloan ECOS" or equivalent	No.	4		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
E	**Complete disabled toilet** Low level wash down water closet suite for the elderly and disabled in white complete with horizontal outlet and bottom supply and overflow with close coupling bside lever treatment, 7.5 litre cistern, raised heavy duty toilet seat, cover and S-trap outlet and 600 * 35mm stainless steel grab rails **(5No.)**. The set to be complete with **half pedestal wash hand basin**,chrome plated non-concussive time delay press action **pillar tap**, 6mm thick **mirror, toilet roll holder** and **robe hook**. All to be as "Twyfords Avalon BTW" or approved equivalent.	Set	1		
F	**Wash hand basin** Countertop wash hand basin size 575 x 500mm with one tap hole, 32mm diameter chrome plated waste and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. To be as Tapis "Vanity Basin #LVA1290" or equal and approved.	No.	21		
	Mixer Faucets				
F	Executive Electronic Presence Sensor Action Luxury Basin Mixer Faucet for Hot and Cold with Flow rate of 4.5L/min . Tap to to have a rechargeable battery, Aerated spray and Cartdridge to be made of Ceramic . Faucet to be as "Hansgrohe- Talis S SingleHole Faucet 80" or equivalent	No.	21		
G	**Kitchen sink**				
A	Double bowl, Double drainer kitchen sink made of stainless steel with satin surface, of size 147 x 440mm. The bowl size to be 420 x 355 x 350mm deep complete with chrome plated 40mm waste fittings, plugs, chain stays, overflow, chrome plated bottle trap with 75mm deep seal and chain waste fitting,1No.15mm chrome plated deck mounted. To be as 'Dali FF14744AR' or approved equivalent	No.	2		
	Kitchen Mixer				
B	Heavy duty chrome plated hot & cold kitchen sink mixer with swivel overarm outlet, single swing lever,aerator cartridge. To be as **'Tapis Yolanda #WDG56431C'** or approved equivalent.	No.	2		
	Towel Rail				
C	Twyfords Bathrooms Ltd Ref. No. PB 0363 CP chrome plated screw to wall Towel Rail 650mm long complete with screws.	No.	2		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
E	**Undersink water heater**: 10 Litres glass lined(enamelled) steel heater vessel complete with 2.2 kW element, external rhermostat adjustable up to 65^0 .Such as "Bosch or approved equivalent	No.	2		
E	**Hand drier**				
	Automatic hand drier in white steel, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m3/min) and to be of size 270x264x143mm deep It shall have a noise level below 72.5 dBA at 1.5m. It shall be as Medclinic or approved equivalent.	No.	6		
F	**Mirrors** 6mm thick polished plate glass, silver backed mirror with beveled edges, size 610x497mm plugged and screwed to wall with 4No. Chrome plated chrome capped screws and 5mm thick foam back nest.	No	21		
G	**Robe hook** Robe hook in vitreous china and in white colour mounted unto a concealed screw to wall wedges, to be as Twyfords OC 6858 1998 or approved equivalent.	No	22		
	Toilet brush holder				
D	Toilet brush holder made of AISI 304 stainless steel in satin finish,complete with Sisal fibre brush & assembling plate for mounting on the wall. Body thickness 0.4mm, Handle and lid thickness 0.4mm & Rod thickness 0.8mm. Toilet brush holder to be as Mediclinics 'ES0968CS' or equal and approved.	No.	22		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Soap Dispenser				
D	Soap Dispenser made of AISI 304 stainless steel of thickness 0.8mm & matte black epoxy finish,vandal resistant casing,Stainless steel push-button,Corrosion-resistant anti-drip valve,Inner tank 2.5 mm thick made of translucent polypropylene,Hinged cover with Opening on top capacity 1.5 litres complete with rawl plugs, fixing screws, lock and key complete with initial fill of soap gel.It shall dispense 1.5 ml per pump & be suitable for Liquid soaps and hydroalcoholic gels The soap dispenser to be as MEDICLINICS model DJ0031B, size 110 x 133 x 240mm (L*W*H) or approved equivalent.	No.	12		
	Paper towel dispenser				
E	Wall mounted paper dispenser for dispensing interfolded paper tissue. The dispenser shall have a fully welded structure, Door fixed to the body with two rivets allowing it to be swung open for paper replacement, Front lock with a standard Mediclinics key provided, Content viewer on the front, Back-plate with multiple slots for easy installation. It shall have a capacity of 400-600 C/Z towels, dimensions 275*130*330mm (L*W*H),made of AISI 304 stainless steel with satin finish. It shall be as MEDICLINICS model DT2106CS include a casing having a narrow dispensing slot in the bottom surface. The dispenser should have a proper mechanism to prevent excessive quantities of tissue. It shall be as MEDICLINICS model DT2106CS or approved equivalent.	No.	8		
	Toilet roll holder				
B	Toilet roll holder made of AISI 304 stainless steel in satin finish . To have a support of thickness 0.8 mm with trim and chromated plastic spindle. It shall have plate thickness of 1.6mm. Toilet roll holder to be as MEDICLINICS model 'AI0113CS' accessories Ref. No. VC 9808 WH.	No.	22		
	Sub-Total for Sanitary Fittings C/F to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
3.20	**Internal Plumbing**				
	Supply, deliver and install chlorinated polyvinyl chloride (CPVC) pipes, tubing and fittings as described and shown on the drawings. The pipes and fittings shall be produced as per SDR 11 for sizes upto 2" and Schedule 40 for sizes above 2" upto 4". They shall meet or exceed the requirements of ASTM D 2846, current European standards for CPVC installations and to the Engineers approval. All joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493.				
	Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed, brackets and pipe sleeves through structural members for the proper and satisfactory functioning of the system. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
	Cold water & Hot Water CPVC Pipes				
A	15 mm dia. CPVC Pipes. surface mounted.	Lm	15		
B	20mm diameter pipework	Lm	20		
C	25mm diameter pipework	Lm	20		
D	32mm diameter pipework	Lm	20		
E	40mm diameter pipework	Lm	40		
F	50mm diameter pipework	Lm	20		
G	65mm diameter pipework	Lm.	15		
H	75mm diameter pipework	Lm.	25		
	Bends				
	15mm diameter CPVC 90° elbow	No.	10		
F	20mm diameter bends	No.	4		
G	25mm diameter bends	No.	4		
H	32mm diameter bends	No.	4		
I	40mm diameter bends	No.	4		
J	50mm diameter bends	No.	4		
	Tees				
A	25mm equal Tees	No.	12		
B	32mm equal Tees	No.	12		
C	40mm equal Tees	No.	18		
D	50mm equal Tees	No.	9		
	v) 50*40*50 mm reducing Tee	No.	5		
	vii) 40*32*40 mm reducing Tee	No.	3		
	vi) 65*50*65 mm reducing Tee	No.	2		
	vii) 75*65*75 mm reducing Tee	No.	2		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Reducers				
E	25 x 20mm diameter reducer	No.	12		
F	32 x 20mm diameter	No.	12		
G	32 x 25mm diameter	No.	12		
H	40 x 20mm diameter	No.	12		
I	40 x 25mm diameter	No.	12		
J	40 x 32mm diameter	No.	12		
K	50 x 25mm diameter	No.	12		
L	50 x 32mm diameter	No.	12		
M	50 x 40mm diameter	No.	12		
	Unions				
P	32mm diameter pipe unions	No.	5		
Q	40mm diameter pipe unions	No.	5		
	50mm diameter pipe unions	No.	5		
	Plugs				
D	40mm diameter pipe threaded plug	No.	10		
E	50mm ditto	No.	10		
A	15mm dia chrome plated **flexible connection**	No.	21		
B	15mm dia **Angle valve** as Cobra or equal & approved	No.	21		
C	**Brass FPT 90° Bends/Elbows**				
	i) 15mm diameter CPVC 90° brass FPT elbow	No.	30		
	ii) 20*15mm diameter CPVC 90° brass FPT elbow	No.	20		
	iii) 40mm diameter CPVC 90° brass FPT elbow	No.	20		
D	**Brass FPT 90° Tee**				
	i) 15*15*15mm diameter CPVC brass FPT Tee	No.	15		
	ii) 20*15*20mm diameter CPVC 90° brass FPT Tee	No.	15		
	iii) 25*15*25mm diameter CPVC brass FPT Tee	No.	15		
	iv) 32*15*32mm diameter CPVC 90° brass FPT Tee	No.	25		
	v) 40*32*40mm diameter CPVC brass FPT Tee	No.	10		
	vi) 50*40*50mm diameter CPVC 90° brass FPT Tee	No.	10		
	Valves				
F	25mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 5154 PN 20 for series B rating, with wheel and head joints to steel tubing and complete with round male threaded transition fittings. The gate valve to be as PEGLER or approved equivalent.	No.	5		
G	32mm ditto	No.	8		
H	40mm ditto	No.	8		
I	50mm ditto	No.	8		
J	32mm non-return valve	No.	8		
K	32mm medium pressure ball valve	No.	8		
	Pipe Sleeves				
L	65mm diameter heavy duty PVC pipe sleeves for crossing over columns and beams.	Lm	20		
	Sub-Total for Internal Plumbing C/F to collection page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	INTERNAL FOUL WATER DRAINAGE				
	Supply, deliver and install the following UPVC, MUPVC, soil and waste systems respectively to B.S 5255 with fittings fixed to Manufactures 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 pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	MuPVC and uPVC Waste and Soil pipework				
A	100mm dia. heavy gauge golden brown UPVC pipe	64	Lm		
B	100mm diameter heavy gauge grey mUPVC pipe	30	Lm		
C	75mm diameter heavy gauge grey mUPVC pipe	36	Lm		
D	50mm diameter waste pipe	48	Lm		
E	40mm diameter waste pipe	48	Lm		
F	32mm diameter waste pipe	32	Lm		
	Bends				
G	100mm diameter bend with access	5	No.		
H	100mm diameter long radius bend	3	No.		
I	75mm diameter long radius bend	6	No.		
J	100mm diameter sweep bend	4	No.		
K	50mm diameter sweep bend	6	No.		
L	40mm diameter sweep bend	7	No.		
M	32mm diameter sweep bend	8	No.		
	Tees				
A	50mm diameter sweep tee	6	No.		
B	40mm diameter sweep tee	4	No.		
C	32mm diameter sweep tee	3	No.		
	Access Caps				
D	50mm diameter access cap	5	No.		
E	40mm diameter access cap	8	No.		
F	32mm diameter access cap	6	No.		
	Boss Connectors				
G	75 x 40mm diameter boss connector	2	No.		
	Reducing Sockets				
H	100 x 75 reducing socket	3	No.		
I	100 x 50 reducing socket	5	No.		
J	50 x 32 reducing socket	4	No.		
K	40 x 32 reducing socket	4	No.		
	WC Connectors				
L	100mm diameter WC connector	9	No.		
M	100mm single branch	12	No.		
N	100mm access plug	4	No.		
O	100mm short radius	4	No.		
P	100mm long radius	4	No.		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Traps				
M	100 x 50mm diameter **stainless steel** floor trap with cover and grating	3	No.		
N	100 x 100mm diameter **stainless steel** floor drain with cover and grating	3	No.		
	Sub-Total for Internal Foul Water Drainage C/F to collection page				

COLLECTION PAGE FOR FIRST FLOOR PLUMBING AND DRAINAGE WORKS

ITEM	DESCRIPTION	AMOUNT (KSHS)
4	Total carried forward from Sanitary Fittings	
5	Total carried forward from Internal Plumbing	
6	Total carried forward from Internal Foul Water Drainage	
	Total P&D Works for FIRST floor C/F to Plumbing and Drainage Works Collection Page	

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	TYPICAL (SECOND, THIRD, FOURTH & FIFTH) FLOORS				
	SANITARY FITTINGS				
	Supply the following appliances including their support brackets, screws etc. and their connection to water supply, waste/soil drainage and electrical power supply:-				
	NOTE: TRADE NAMES				
	Supply, deliver, install and fix the following sanitary fittings including all materials and jointing to supply, waste/soil and overflow pipes. Brand names are specified only as an indication of quality. Equal and approved appliances may be supplied. Where trade names are mentioned, the ref. no. is intended as a guide to the type and quality of fittings				
A	**Water Closet (WC) Pan**				
	Round rimfree wall hung WC suite **i)WC pan** - horizontal outlet **(E11798WH);** **ii) Seat and cover,** quick release hinge, soft closing mechanism **(E17857WH)**; **iii) Fixings-** supporting bracket and fixing kit (**SR8138XX**), supporting brackets screwed to floor for non - load bearing walls, up to 100mm thick; **iv) WC outlet connector:** -P trap outlet connector (**WF1240WH**) -S trap connector (**WF1241WH**); **v) Material**-Vitreous china. **vi) Colour** - White (**WH).** All as Twyford or approved equivalent.	No	11		
	Water Closet (WC) Squatting Pan				
A	One-piece body Squatting pan WC pan made of AISI 304 **stainless steel** of thickness 1.5 mm & satin finish,complete with Vandal-proof finishes,Two frontal flush nozzles to clean the squatting pan,Recessed mounted, Anti-slip furface, P trap outlet connector, inlet connector & rubber & 2 No. inlets of 40mm, plastic flushpipe with clips, fixing screws and all oher accessories necessary for correct use of the suite. To be as "Mediclinics 'SNPT01CS'" or an equal & approved equivalent	No	4		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
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	No	15		
	Bidet Faucet sprayer set				
D	Power spray bidet kit c/w 1/2" female inlet x 1 /2" Male Outlet. Spray Kit to be embed on wall mount water supply. Cradle to have positive shut off.The kit shall be complete with Bidet Handshower, Water supply elbow with shut off valve, Chrome plated hose, Dual check valve, backflow preventer and 49" hose. The hand held bide rose to be as "Docol Trio Line Shataffa #00502506" or an approved equivalent	No.	15		
B	**Belfast London Sink**	No	1		
C	**Urinal bowls**				
	1 No. ceramic urinal bowl comprising of dimensions 305 x 445 x 375mm in white vitreous china and fittings including siphon ball valve, supports, 40mm heavy duty stainless steel bottle trap, 40mm diameter chrome plated outlet with grating, visible inlet & firmly fixed on the wall with chrome plated screws and wall hangers. The fittings shall be as 'Duravit D-Code' or an equal & approved equivalent.	No.	4		
	Urinal Divider				
C	1 No. urinal divider of dimensions 620mm height in white vitreous china firmly fixed on the wall with chrome plated screws and wall hangers. The fittings shall be as Duravit or an equal & approved equivalent.	No.	3		
	Urinal Electronic Flush Valves				
D	32mm urinal bowl Dual Electronic Presence Sensor 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 as "Sloan ECOS" or equivalent	No.	4		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
E	**Complete disabled toilet** Low level wash down water closet suite for the elderly and disabled in white complete with horizontal outlet and bottom supply and overflow with close coupling bside lever treatment, 7.5 litre cistern, raised heavy duty toilet seat, cover and S-trap outlet and 600 * 35mm stainless steel grab rails **(5No.)**. The set to be complete with **half pedestal wash hand basin**,chrome plated non-concussive time delay press action **pillar tap**, 6mm thick **mirror, toilet roll holder** and **robe hook**. All to be as "Twyfords Avalon BTW" or approved equivalent.	Set	1		
F	**Wash hand basin** Countertop wash hand basin size 575 x 500mm with one tap hole, 32mm diameter chrome plated waste and heavy duty plastic bottle trap (32mm 'P' trap) with 75mm seal. To be as Tapis "Vanity Basin #LVA1290" or equal and approved.	No.	15		
	Mixer Faucets				
F	Executive Electronic Presence Sensor Action Luxury Basin Mixer Faucet for Hot and Cold with Flow rate of 4.5L/min . Tap to to have a rechargeable battery, Aerated spray and Cartdridge to be made of Ceramic . Faucet to be as "Hansgrohe- Talis S SingleHole Faucet 80" or equivalent	No.	15		
E	**Hand drier** Automatic hand drier in white steel, operating on an infra-red automatic sensing system with heating element safety cut-out complete with a 30 seconds safety timer, plastic rawl plugs and fixing screws. The hand drier to have a heating capacity of 2.1kw and performance flow rate of 135cfm (3.82m3/min) and to be of size 270x264x143mm deep It shall have a noise level below 72.5 dBA at 1.5m. It shall be as Medclinic or approved equivalent.	No.	4		
F	**Mirrors** 6mm thick polished plate glass, silver backed mirror with beveled edges, size 610x497mm plugged and screwed to wall with 4No. Chrome plated chrome capped screws and 5mm thick foam back nest.	No	15		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
G	double robe hook in Satin AISI 304 stainless steel to be mounted by concealed screws to wall wedges & have support with trim.Cap thickness 3.6 mm,Support thickness 0.8mm & Plate thickness 1.6mm.To be as **MEDICLINICS model AI0036CS** or equal and approved.	No	15		
	Toilet brush holder				
D	Toilet brush holder made of AISI 304 stainless steel in satin finish,complete with Sisal fibre brush & assembling plate for mounting on the wall. Body thickness 0.4mm, Handle and lid thickness 0.4mm & Rod thickness 0.8mm. Toilet brush holder to be as Mediclinics 'ES0968CS' or equal and approved.	No.	22		
	Soap Dispenser				
D	Soap Dispenser made of AISI 304 stainless steel of thickness 0.8mm & matte black epoxy finish,vandal resistant casing,Stainless steel push-button,Corrosion-resistant anti-drip valve,Inner tank 2.5 mm thick made of translucent polypropylene,Hinged cover with Opening on top capacity 1.5 litres complete with rawl plugs, fixing screws, lock and key complete with initial fill of soap gel.It shall dispense 1.5 ml per pump & be suitable for Liquid soaps and hydroalcoholic gels The soap dispenser to be as MEDICLINICS model DJ0031B, size 110 x 133 x 240mm (L*W*H) or approved equivalent.	No.	12		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Paper towel dispenser				
E	Wall mounted paper dispenser for dispensing interfolded paper tissue. The dispenser shall have a fully welded structure, Door fixed to the body with two rivets allowing it to be swung open for paper replacement, Front lock with a standard Mediclinics key provided, Content viewer on the front, Back-plate with multiple slots for easy installation. It shall have a capacity of 400-600 C/Z towels, dimensions 275*130*330mm (L*W*H),made of AISI 304 stainless steel with satin finish. It shall be as MEDICLINICS model DT2106CS include a casing having a narrow dispensing slot in the bottom surface. The dispenser should have a proper mechanism to prevent excessive quantities of tissue. It shall be as MEDICLINICS model DT2106CS or approved equivalent.	No.	8		
	Toilet roll holder				
B	Toilet roll holder made of AISI 304 stainless steel in satin finish . To have a support of thickness 0.8 mm with trim and chromated plastic spindle. It shall have plate thickness of 1.6mm. Toilet roll holder to be as MEDICLINICS model 'AI0113CS' accessories Ref. No. VC 9808 WH.	No.	22		
	Sub-Total for Sanitary Fittings C/F to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
3.20	**Internal Plumbing**				
	Supply, deliver and install chlorinated polyvinyl chloride (CPVC) pipes, tubing and fittings as described and shown on the drawings. The pipes and fittings shall be produced as per SDR 11 for sizes upto 2" and Schedule 40 for sizes above 2" upto 4". They shall meet or exceed the requirements of ASTM D 2846, current European standards for CPVC installations and to the Engineers approval. All joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493.				
	Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures as required in the running lengths of pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed, brackets and pipe sleeves through structural members for the proper and satisfactory functioning of the system. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
	Cold water & Hot Water CPVC Pipes				
A	15 mm dia. CPVC Pipes. surface mounted.	Lm	10		
B	20mm diameter pipework	Lm	20		
C	25mm diameter pipework	Lm	20		
D	32mm diameter pipework	Lm	20		
E	40mm diameter pipework	Lm	40		
F	50mm diameter pipework	Lm	20		
G	65mm diameter pipework	Lm.	15		
H	75mm diameter pipework	Lm.	25		
	Bends				
	15mm diameter CPVC 90° elbow	No.	10		
F	20mm diameter bends	No.	4		
G	25mm diameter bends	No.	4		
H	32mm diameter bends	No.	4		
I	40mm diameter bends	No.	4		
J	50mm diameter bends	No.	4		
	Tees				
A	25mm equal Tees	No.	12		
B	32mm equal Tees	No.	12		
C	40mm equal Tees	No.	18		
D	50mm equal Tees	No.	9		
	v) 50*40*50 mm reducing Tee	No.	5		
	vii) 40*32*40 mm reducing Tee	No.	3		
	vi) 65*50*65 mm reducing Tee	No.	2		
	vii) 75*65*75 mm reducing Tee	No.	2		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Reducers				
E	25 x 20mm diameter reducer	No.	12		
F	32 x 20mm diameter	No.	12		
G	32 x 25mm diameter	No.	12		
H	40 x 20mm diameter	No.	12		
I	40 x 25mm diameter	No.	12		
J	40 x 32mm diameter	No.	12		
K	50 x 25mm diameter	No.	12		
L	50 x 32mm diameter	No.	12		
M	50 x 40mm diameter	No.	12		
	Unions				
P	32mm diameter pipe unions	No.	5		
Q	40mm diameter pipe unions	No.	5		
	50mm diameter pipe unions	No.	5		
	Plugs				
D	40mm diameter pipe threaded plug	No.	10		
E	50mm ditto	No.	10		
A	15mm dia chrome plated **flexible connection**	No.	21		
B	15mm dia **Angle valve** as Cobra or equal & approved	No.	21		
C	**Brass FPT 90° Bends/Elbows**				
	i) 15mm diameter CPVC 90° brass FPT elbow	No.	30		
	ii) 20*15mm diameter CPVC 90° brass FPT elbow	No.	20		
	iii) 40mm diameter CPVC 90° brass FPT elbow	No.	20		
D	**Brass FPT 90° Tee**				
	i) 15*15*15mm diameter CPVC brass FPT Tee	No.	15		
	ii) 20*15*20mm diameter CPVC 90° brass FPT Tee	No.	15		
	iii) 25*15*25mm diameter CPVC brass FPT Tee	No.	15		
	iv) 32*15*32mm diameter CPVC 90° brass FPT Tee	No.	25		
	v) 40*32*40mm diameter CPVC brass FPT Tee	No.	10		
	vi) 50*40*50mm diameter CPVC 90° brass FPT Tee	No.	10		
	Valves				
F	25mm diameter approved medium pressure screw down full way non-rising stem wedge gate valve to BS 5154 PN 20 for series B rating, with wheel and head joints to steel tubing and complete with round male threaded transition fittings. The gate valve to be as PEGLER or approved equivalent.	No.	5		
G	32mm ditto	No.	8		
H	40mm ditto	No.	8		
I	50mm ditto	No.	8		
J	32mm non-return valve	No.	8		
K	32mm medium pressure ball valve	No.	8		
	Pipe Sleeves				
L	100mm diameter heavy duty PVC pipe sleeves for crossing over columns and beams.	Lm	20		
	Sub-Total for Internal Plumbing C/F to collection page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	INTERNAL FOUL WATER DRAINAGE				
	Supply, deliver and install the following UPVC, MUPVC, soil and waste systems respectively to B.S 5255 with fittings fixed to Manufactures 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 pipework and also where necessary, for pipe fixing clips, holder bats plugged and screwed for the proper and satisfactory functioning of the system.				
	MuPVC and uPVC Waste and Soil pipework				
A	100mm dia. heavy gauge golden brown UPVC pipe	64	Lm		
B	100mm diameter heavy gauge grey mUPVC pipe	30	Lm		
C	75mm diameter heavy gauge grey mUPVC pipe	36	Lm		
D	50mm diameter waste pipe	48	Lm		
E	40mm diameter waste pipe	48	Lm		
F	32mm diameter waste pipe	32	Lm		
	Bends				
G	100mm diameter bend with access	5	No.		
H	100mm diameter long radius bend	3	No.		
I	75mm diameter long radius bend	6	No.		
J	100mm diameter sweep bend	4	No.		
K	50mm diameter sweep bend	6	No.		
L	40mm diameter sweep bend	7	No.		
M	32mm diameter sweep bend	8	No.		
	Tees				
A	50mm diameter sweep tee	6	No.		
B	40mm diameter sweep tee	4	No.		
C	32mm diameter sweep tee	3	No.		
	Access Caps				
D	50mm diameter access cap	5	No.		
E	40mm diameter access cap	8	No.		
F	32mm diameter access cap	6	No.		
	Boss Connectors				
G	75 x 40mm diameter boss connector	2	No.		
	Reducing Sockets				
H	100 x 75 reducing socket	3	No.		
I	100 x 50 reducing socket	5	No.		
J	50 x 32 reducing socket	4	No.		
K	40 x 32 reducing socket	4	No.		
	WC Connectors				
L	100mm diameter WC connector	9	No.		
M	100mm single branch	12	No.		
N	100mm access plug	4	No.		
O	100mm short radius	4	No.		
P	100mm long radius	4	No.		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				-
	Traps				
M	100 x 50mm diameter **stainless steel** floor trap with cover and grating	3	No.		
N	100 x 100mm diameter **stainless steel** floor drain with cover and grating	3	No.		
	Sub-Total for Internal Foul Water Drainage C/F to collection page				

COLLECTION PAGE FOR TYPICAL FLOORS PLUMBING AND DRAINAGE WORKS

ITEM	DESCRIPTION	AMOUNT (KSHS)
1	Total carried forward from Sanitary Fittings	
2	Total carried forward from Internal Plumbing	
3	Total carried forward from Internal Foul Water Drainage	
	Sub-Total P&D Works for one typical floor	
	Sub-Total P&D Works for four (4 No.) typical floor C/F to Plumbing and Drainage Works Collection Page	

COLLECTION PAGE FOR PLUMBING AND DRAINAGE WORKS

ITEM	DESCRIPTION	AMOUNT (KSHS)
1	Total carried forward from Ground Floor	
2	Total carried forward from First Floor	
3	Total carried forward from Typical Floors	
	Total Plumbing and Drainage Works C/F to Summary Page	

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
###	MECHANICAL VENTILATION & AIR CONDITIONING				
	Mechanical Ventilation **Shower/ Toilet Extract Fans**				
A	Wall mounted extract fan with three speed extract capable of 18/29/65 m3/hr. The fan shall have a maximum sound pressure of 28dB(A) at 3m. The fan shall be complete with wall mounting kit, electrothermal shutter, trickle ventilation facility, safety inger guard,adjustable timer and all necessary ancillaries. It shall be **XpelAir** model **'Simply Silent Contour CV4S'** or approved equivalent	50	No		
C	Electrical works including but not limited to wiring and conduits to fans and control panels from local isolator provided by others. It shall include a push and turn safety switch near the fan for isolation during servicing and maintenance.	1	Item		
	Testing and commissioning				
E	Allow for testing and commissioning for mechanical ventilation system to the satisfaction of the Engineer	1	Item		
	Total for Mechanical Ventilation c/f to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
10.10	AIR CONDITIONING				
	This BOQ shall be read together with general and particular specifications and contract drawings. Bidders are advised to be keen on the specifications to ensure that the products they intend to supply, deliver and install meet or exceed the features of the reference models.				
8.1	D.G's OFFICE AIR CONDITIONING				
	Supply, install, test and commission the following system upon approval of working drawings or instructions from the Engineer. NB:Outdoor units shall be mounted on external walls/balcony or as per Building Manager's requirements				
A	Single Split Air conditioner of cooling capacity **7.1 kW (24,000 Btu/hr)** with **Ceiling Cassette** indoor unit, outdoor unit,, control unit, room thermometer, room thermostat controls and remote control device. It shall be charged using **R41OA** refrigerant or any other none ozone depleting refrigerant.The unit must be filled fully with the first fill of this refrigerant.It must be capable of air filtration,dehumidification with inverter compressor technology. The unit shall be such that if the power supply goes off, it will automatically start after power is restored, with a three (3) minute delay. The outdoor unit shall have a matching capacity with the indoor unit.The air conditioning unit shall have an **inverter motor (BLDC)** sand hall be complete with wireless remote all other necessary accessories for proper functioning of the system. The unit shall be as **'LG ATUW24GPLS1 inverter '**, or equal and approved	1	No.		
	Refrigeration Pipework				
B	Refrigeration liquid pipework of diameter 9.52mm made of copper,including 25mm Amaflex insulation & flared connections	15	Lm		
C	Refrigeration gas pipework of diameter 15.88mm made of copper,including 25mm Amaflex insulation & flared connections	15	Lm		
	Refrigerant				
D	Allow R4IOA refrigerant for charging the air conditioning system as per manufacturer's instruction	1	Item		
	Drain				
E	32mm PVC condensate drainage pipework, class D, including bends, clips, joints and tees along the running length of the pipe	15	Lm		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Surge Protector/Automatic Voltage Switcher(AVS)				
F	Power surge protector as of 'Sollatek' or an equal and approved equivalent.	1	No.		
	Mounting Bracket				
A	Mounting bracket for the outdoor unit complete with a cage and provided with purpose-made protective steel iron angle frame and all other anchoring accessories including rawl bolts and anti-vibration rubber mountings to the Engineers approval.	1	Item		
	Wall Mounted Wired Remote Controller				
B	Fully wired wall mounted remote control panel, wiring and conduit circuit works including but not limited to interconnecting cable between the indoor & outdoor units. To be complete with LED panel and thermostat	1	Item		
C	**Power & Communication cable:** 4C × 0.75 (No. × mm2)	15	M		
D	Electrical works including but not limited to wiring and conduits to fans and control panels from local isolator provided by others. It shall include a push and turn safety switch near the fan for isolation during servicing and maintenance.	1	Item		
	Sub-Total for D.G's Office Air Conditioining c/f to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
8.2	**BOARD ROOM AIR CONDITIONING**				
	Supply, install, test and commission the following system upon approval of working drawings or instructions from the Engineer. NB:Outdoor units shall be mounted on external walls/balcony or as per Building Manager's requirements				
A	**Mid/High Static Ceiling Concealed Duct AC** type of cooling capacity **7.1 kW**, flow rate 9.5 m3/min as LG MultiV Model ARNU09GM1A4 or approved equivalent of another brand.	2	No		
	Refrigeration Pipework				
B	Refrigeration liquid pipework of diameter 9.52mm made of copper,including 25mm Amaflex insulation & flared connections	15	Lm		
C	Refrigeration gas pipework of diameter 15.88mm made of copper,including 25mm Amaflex insulation & flared connections	15	Lm		
	Refrigerant				
D	Allow R4IOA refrigerant for charging the air conditioning system as per manufacturer's instruction	1	Item		
	Group Control Wire of 0.25m long Y-type cable as LG model PZCWRCG3 or approved equivalent	4	No.		
	Drain				
E	32mm PVC condensate drainage pipework, class D, including bends, clips, joints and tees along the running length of the pipe	15	Lm		
	Surge Protector/Automatic Voltage Switcher(AVS)				
F	Power surge protector as of 'Sollatek' or an equal and approved equivalent.	1	No.		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Mounting Bracket				
A	Mounting bracket for the outdoor unit complete with a cage and provided with purpose-made protective steel iron angle frame and all other anchoring accessories including rawl bolts and anti-vibration rubber mountings to the Engineers approval.	1	Item		
	Wall Mounted Wired Remote Controller				
B	Fully wired wall mounted remote control panel, wiring and conduit circuit works including but not limited to interconnecting cable between the indoor & outdoor units. To be complete with LED panel and thermostat	1	Item		
C	**Power & Communication cable:** 4C × 0.75 (No. × mm2)	15	M		
					-
	AIR SUPPLY GRILLE				
J	1000 x150mm wide, supply linear air difussers	8	No.		
K	150mm circular air dampers	8	No.		
	AIR RETURN GRILLE				
L	600mm circular air return diffusers with damper	8	No.		
M	Flexible duct of diameter 150 mm	20	Lm		
	Trunking				
	75x50mm approved PVC trunking for concealing the refrigerant pipework.	25	LM		
D	Electrical works including but not limited to wiring and conduits to fans and control panels from local isolator provided by others. It shall include a push and turn safety switch near the fan for isolation during servicing and maintenance.	1	Item		
	Sub-Total for Board Room Air Conditioning c/f to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
8.30	**SERVER ROOM AIR CONDITIONING**				
	Supply, install, test and commission the following system upon approval of working drawings or instructions from the Engineer. NB:Outdoor units shall be mounted on external walls/balcony or as per Building Manager's requirements				
A	Single Split Air conditioner of cooling capacity **7.1 kW (24,000 Btu/hr)** with **High Wall Mounted** indoor unit, outdoor unit,, control unit, room thermometer, room thermostat controls and remote control device. It shall be charged using **R41OA** refrigerant or any other none ozone depleting refrigerant.The unit must be filled fully with the first fill of this refrigerant.It must be capable of air filtration,dehumidification with inverter compressor technology. The unit shall be such that if the power supply goes off, it will automatically start after power is restored, with a three (3) minute delay. The outdoor unit shall have a matching capacity with the indoor unit.The air conditioning unit shall have an **inverter motor (BLDC)** sand hall be complete with wireless remote all other necessary accessories for proper functioning of the system. The unit shall be as **'LG M24AKH-NK7 inverter '**, or equal and approved	2	No.		
	Refrigeration Pipework				
B	Refrigeration liquid pipework of diameter 9.52mm made of copper,including 25mm Amaflex insulation & flared connections	20	Lm		
C	Refrigeration gas pipework of diameter 15.88mm made of copper,including 25mm Amaflex insulation & flared connections	20	Lm		
	Refrigerant				
D	Allow R41OA refrigerant for charging the air conditioning system as per manufacturer's instruction	1	Item		
	Drain				
E	32mm PVC condensate drainage pipework, class D, including bends, clips, joints and tees along the running length of the pipe **Surge Protector/Automatic Voltage Switcher(AVS)**	20	Lm		
F	Power surge protector as of 'Sollatek' or an equal and approved equivalent.	2	No.		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
	Mounting Bracket				
A	Mounting bracket for the outdoor unit complete with a cage and provided with purpose-made protective steel iron angle frame and all other anchoring accessories including rawl bolts and anti-vibration rubber mountings to the Engineers approval.	2	Set		
	Wall Mounted Wired Remote Controller				
B	Fully wired wall mounted remote control panel, wiring and conduit circuit works including but not limited to interconnecting cable between the indoor & outdoor units. To be complete with LED panel and thermostat	2	Set		
C	**Power & Communication cable:** 4C × 0.75 (No. × mm2)	30	Lm		
D	Electrical works including but not limited to wiring and conduits to fans and control panels from local isolator provided by others. It shall include a push and turn safety switch near the fan for isolation during servicing and maintenance.	1	Item		
	As-Installed Drawings				
E	Allow for **three (3No.) sets** of as-installed drawings and operation manuals both in hard and soft copies for mechanical ventilation installations	1	Item		
	Trunking				
F	75*50mm approved PVC trunking for concealing the refrigerant pipeworks	20	Lm		
	Testing and commissioning				
G	Allow for testing and commissioning for mechanical ventilation system to the satisfaction of the Engineer				
	Sub-Total for Server Room Air Conditioning c/f to Collection Page				

COLLECTION PAGE FOR MECHANICAL VENTILATION & AIR CONDITIONING WORKS		
ITEM	DESCRIPTION	AMOUNT (KSHS)
1	Total carried forward from Mechanical Ventilation	
2	Total carried forward from DG's Office Air Conditioning	
3	Total carried forward from Board Room Air Conditioning	
4	Total carried forward from Server Room Air Conditioning	
	Total for MECHANICAL VENTILATION & AIR CONDITIONING SERVICES C/F to Summary Page	

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
9.00	FIRE PROTECTION SERVICES				
9.1	PORTABLE FIRE EXTINGUISHERS				
	Supply, deliver, install and test the following fire fighting equipment in positions indicated on the contract drawings or as shall be instructed by the Engineer. The Contractor must conform to Manufacturer's Printed instructions and the portable fire extinguishers manufactured by reputable manufacturers. They shall conform to NFPA 10.				
	Carbon Dioxide Gas Fire Extinguisher				
B	5kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	10	No		
	Dry Chemical Powder Fire Extinguisher				
C	6kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	10	No		
	Fire Blanket				
D	Fire blanket made of cloth woven with pre-asbestos yarn or any other fire proof material and to measure 1800 x 1210 mm.	5	No		
	Manual Alarm Bell				
E	9" (225mm) manual operated alarm bell (Gong)	10	No		
	Fire Notices				
F	Allow for fire signage for the hosereel system and fire instructions as directed by the Project Engineer	10	No.		
G	Fire Exit Signs				
	Allow for fire exit signs with electrical lighting and batteries as instructed by the Project Engineer	20	No.		
	Fire Assembly Point				
H	Allow for fire signage of fire assembly points as directed by the Project Engineer	4	No.		
	Testing and Commissioning				
I	Allow for setting to work, testing and commissioning of the whole external water reticulation system to the satisfaction of the Engineer	Item	Sum		
	Sub-total for Portable Fire Extinguishers c/f to Collection page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
9.2	**HOSE REEL SYSTEM**				
A	**Hose Reel** 25mm diameter 30 m long swinging type fire hose reel complete with delivery valve, mild steel feed pipe, isolation valve guide, electro-galvanized surface mounted hose reel cabinet in approved colour and all other accessories as "GERMANIA" or equal and approved.	10	No		
B	**Pumps for boosted hose reel system** Supply and install a hose reel pumpset comprising the following components: - Two identical centrifugal pumps, one duty, the other standby mounted on a common base frame together with the other components. Each pump shall have a duty of **500m^3/hr** against a **40m head**. - 60 L diaphragm tank (pressure vessel) as **Varem** or approved equivalent). - Pressure switch and pressure gauge - GMS Pipe work connections including tank connections, 50mm foot valve with strainer, suction & discharge manifold, isolating valves, non-return valves Control shall be effected via a pressure switch through a pre-wired control panel which shall give automatic change-over from duty to standby pump within 5 seconds should the duty pump fail to deliver for any reason. - **Control panel** mounted on the same base frame as pumpset and presure vessel with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, All these shall be housed in a lockable cabinet (with integral isolator) made from SWG 18 mild steel sheet in oven baked 'fire-red' powder coated colour. It should include a change-over switch to enable the pumps to work alternately and all other accessories necessary for the automatic operation of the pump. 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 pumpset shall be installed on a common frame. The pump set shall be as as 'Dayliff DE 200/40' series or approved equivalent	1	Set		
	Sub-total c/f to the next page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-total b/f from the previous page				
	Associated Pipework Install Galvanised mild steel (GMS) piping and fittings with screwed & socketed joint to heavy grade class "C" to BS. 1387:1967 with pipe threads to B.S. 21. The pipework and all associated fittings shall be in approved colour for fire fittings				
B	**GMS Pipework**				
	i) 100 mm	20	Lm		
	i) 75 mm	15	Lm		
	i) 65 mm	15	Lm		
	ii)32mm	10	Lm		
	iii) 40 mm	15	Lm		
	iv) 50mm	10	Lm		
C	**Elbows**				
	i)100mm	5	No.		
	i) 75 mm	3	No.		
	i)65mm	3	No.		
	ii) 32mm	15	No.		
	iii) 40mm	2	No.		
	ii) 50mm	2	No.		
D	**Tees**				
	i) 100 x 100 x 100 mm	3	No.		
	i) 75 x 75 x 75 mm	2	No.		
	i) 65 x 65 x 65 mm	2	No.		
	ii) 50x 40 x 50 mm	2	No.		
	iii) 40 x 32 x 40 mm	15	No.		
	iv) 32 x 32 x 32 mm	5	No.		
E	**Reducers**				
	i) 100 x 75mm ditto	5	No.		
	i) 75 x 65mm ditto	5	No.		
	i) 65 x 50mm ditto	5	No.		
	ii) 50 x 40mm ditto	5	No.		
	ii) 40 x 32mm ditto	5	No.		
	ii) 32 x 25mm ditto	5	No.		
F	**Plug**				
	65 mm dia plug	3	No.		
	50 mm dia plug	3	No.		
	Sub-total c/f to the next page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-total b/f from the previous page				
A	**Gate Valves**				
	i) 100 mm dia. approved high pressure screw down full way non- rising stem wedge gate valve to BS 1952, with wheel and head joints to tubing. The gate valve to be as "Pegler" or approved equivalent.	2	No.		
	ii) 75mm ditto	1	No.		
	i) 65mm ditto	1	No.		
	ii)50 mm ditto	5	No.		
	ii)32 mm ditto	10	No.		
B	**Non-Return Valves**				
	i) 100 mm flanged non-return valve	2	No.		
	i) 75 mm flanged non-return valve	2	No.		
	i) 65 mm flanged non-return valve	2	No.		
	ii) 50 mm flanged non-return valve	2	No.		
C	**Fire Hose Cabinet**				
	Surface mounted fire hose cabinet manufactured from electro galvanised steel sheet with folded edges and curled hose plate edges and painted with electro static powder coating, 180°C baked. The cabinet size shall be capable of housing hosereel and 3No. portable extinguishers as described in the next page and should conform to BS EN 671-1. To be as Germania or equal and approved.	10	No.		
M	**Painting**				
	Allow for painting of the entire hose reel pipework to red & as per NFPA standard	1	Item		
	Sub-total for Hose-Reel Services c/f to Collection page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
9.3	**DRY RISER INSTALLATION**				
	Supply, deliver and install the dry riser as specified.				
D	**Landing Valve** 65 mm diameter, gunmetal gate pattern landing valve with flanged inlet and female instantaneous outlet fitted with plug secured by short chains complete with 65 mm diameter, 20 metres long canvas hose, branch pipe and nozzle.	10	No.		
E	25mm Air Release Valve	2	No.		
F	**Fire Brigade Inlet Breeching Valve** Install a two way Fire Department Connection (Fire Brigade Inlet Breeching Valve) complete with drain valve, check valve, chain & caps for inlets and drain valve. All to be housed in a lockable standard cabinet with 6mm wired glass and identification sign.	2	No.		
A	**Canvas Hose** 65 mm diameter, canvas hose, 30 metres long designed for a bursting pressure of 34bar complete with instantenous coupling.	10	No.		
B	**Associated Pipework** Install Galvanised mild steel (GMS) piping and fittings with screwed & socketed joint to heavy grade class "C" to BS. 1387:1967 with pipe threads to B.S. 21. The pipework and all associated fittings shall be in approved colour for fire fittings				
	GMS Pipework				
	i) 100mm diameter pipe	40	LM		
	ii) 65mm dia. ditto	25	LM		
	iii) 65 mm isolating valve	3	No.		
C	**Bends**				
	i) 100mm diameter bend	15	No.		
	ii)65mm	10	No.		
D	**Tees**				
	i) 100 mm equal diameter tee	10	No.		
	Ii) 100*65*100 mm unequal diameter tee	10	No.		
		.			
	Sub-total c/f to the next page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-total b/f from the previous page				
A	**Working and Record (As-installed) Drawings** Prepare and submit **three sets** of working and record (as-installed) plan and isometric layout drawings to easily readable scale, A1 or A0 paper size format as follows; i) general arrangement drawings of all equipment, plant etc. ii) routes - types and sizes and arrangement of all pipework iii) wiring (electrical & control) details iv) any other details as per specifications Drawings are to be submitted in soft copy (AutoCAD 2004 format) & hard copy to the client, the Architect and the Engineer. The soft copies to be stored in CD and 4GB flash disk. Allow for preparation & submitting draft and three final copies of operation, instruction and maintenance manuals to Engineer's approval.	1	Item		
B	Allow for setting to work, testing and commissioning and labelling of the entire fire sprinkler system to NFPA guidelines and to the satisfaction of the Engineer.	1	Item		
M	**Painting** Allow for painting of the entire pipework to red.	1	Item		
C	List any other items necessary for complete installation of thedry riser system; i) ii)				
	Sub-total for Dry-Riser c/f to Collection page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
###	INERT GAS FIRE SUPPRESSION:SERVER ROOM				
	Supply and install fire suppression system complete gas and the following items to the satisfaction of the Engineer. The Server Room volume is 24m^3. The tenderer **MUST** submit the technical brochures and working calculations together with the tender for evaluation. Alternative and approved systems utilising inert gases or a mixture of such gases may be provided.				
A	67litre (19.2Kg) normal charged capacity Argonite specified containers charged with Argonite gas at 200bar with dimensions 267mm diameter and 1615mm high when fitted with valve cylinders to be complete with discharge valves gauges and hoses for connection to the manifold. All to be as "Fike" or approved equivalent.	2	No.		
B	67litre (19.2Kg) normal charged capacity Argonite specified containers charged with Argonite gas at 200bar for testing.	1	No		
C	Cylinder support bracket system	1	Item		
	2 CYLINDER MANIFOLD KIT				
D	2 CYLINDER MANIFOLD KIT comprising 2 No. 25mm x 25mm x 25mm Galvanized Equal Tee and 1 No. 25mm NB Galvanized Pipe, 25mm schedule 40 cylinder manifold kit comprising of gauges,safety relief valve,check valve,discharge & connection hoses to the gas cylinders and any other necessary accesory. All to be as "Fike IG71-004-2" or approved equivalent.	1	Item		
E	25mm selector switch	1	No		
F	Actuation package	1	Item		
G	Solenoid valve/ manual release valve assembly inclusive of hoses, connectors etc.	1	Item		
H	25mm pressure reducing valve	1	No.		
I	15mm Argonite discharge Nozzles V type 6 orifice, Nozzle coverage 360 degrees pattern and a radius of 7M. The Nozzle will be located not less than 300mm below the ceiling as "Fike" or approved equivalent.	1	No.		
J	15mm Argonite discharge Nozzles V type 6 orifice, Nozzle coverage 360 degrees pattern and a radius of 3.5M. The Nozzle will be located less than 300mm from the upper floor surface as "Fike" or approved equivalent.	1	No.		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
B	Wall mounted remote controller	1	No.		
C	Pressure relief/vent	1	No		
D	Low pressure switch	1	No.		
	Pipework (GMS Class 'C')				
E	25mm diameter seamless black steel pipe Schedule 40	10	LM		
F	20mm diameter seamless black steel pipe Schedule 40	10	LM		
G	25mm diameter steel pipe bend/elbow	5	No		
H	20mm diameter steel pipe bend/elbow	5	No		
I	15mm diameter steel pipe bend/elbow	5	No		
J	25mmX20mmX25mm tees	2	No		
K	25mmX15mmX25mm tees	2	No		
L	20mmX15mmX20mm tees	2	No		
M	25mm x20mm reducer	1	No.		
N	20mm x15mm reducer	1	No.		
O	Addressable Control panel, controls and wiring complete with standby batteries	1	Item		
P	Maintenance switch	1	No.		
Q	Double Action manual /electric releasing switch	2	No.		
R	Abort switch complete with back box	1	No.		
S	Ionization sensors	2	No.		
T	Thermal sensors	2	No.		
U	Photo electric sensors	4	No.		
V	Audible alarms	2	No.		
W	Visual alarm	2	No.		
A	Electrical works and earthing	1	Item		
B	Allow for associated buiders work	1	Item		
C	Allow for pipework anchorage/hangers	1	Item		
D	Allow for painting system pipework	1	Item		
E	Labelling and warning signs inside and outside the rooms	2	No		
F	Calculations, working drawings providing brochures, drawings, and as installed drawings	1	Item		
G	**Testing and commissioning**	1	Item		
	Allow for integrating the automatic fire suppression system to the electrical and air conditioning system.	1	Item		
	Sub-Total c/f to Next Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-Total b/f from Previous Page				
H	**SUSPENDED SERVER ROOM FLOOR** Supply and installation of raised floor **calcium sulphate** resistant panel in the server room with floor decking at 450mm above concrete slab complete with support and fire resistant material subject to approval by the engineer. Fire resistant panels to be of dimensions 400mm x 400mm with steel frame for supporting a load of point load of 500Kg/Sqf	8	SM		
I	**FIRE DOOR** 2-HOURS FIRE RATED DOOR UL-CERTIFIED FOR SERVER ROOM COMPLETE WITH THE FOLLOWING FEATURES: Door Leaf Size: 2100mm*1000mm Door Leaf Thickness: ≥ 45 mm Leaf Steel Sheet Thickness: ≥1.5mm Frame Steel Sheet Thickness: ≥ 2.0 mm Frame Corner: Welded Type Fire Rating: 2-HOURS Material: Cold Rolled Coil and/or Galvanised Steel Paint: Electrostatic liquid coating Compliance: Manufactured in accordance to , UL 10B & C, NFPA 252,NFPA257,ASTM E2010, BS 476 AND UBC7-2/97. Temperature rise at 30 min > 344°C Vision Panel; and any other accessories necessary for proper operation of the door.	1	Item		
J	List any other items necessary for complete installation of the inert gas fire suppression system; i) ii) iii)				
	Total for Inert Gas Fire Suppression C/F to Collection Page				

COLLECTION PAGE FOR FIRE PROTECTION WORKS

ITEM	DESCRIPTION	AMOUNT (KSHS)
1	Total carried forward from Portable Fire Extinguishers	
2	Total carried forward from HoseReel & Booster Pump	
3	Total carried forward from Dry Riser	
4	Total carried forward from Inert Gas Fire Suppression	
	Total for FIRE PROTECTION C/F to Summary Page	

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	BOREHOLE DRILLING & EQUIPPING The rates shall be inclusive of 16% VAT.				
	Environmental Impact Assessment (EIA)				
A	Allow for environmental impact assessment to obtain NEMA permit.	1	Item		
	Hydrogeological report				
B	Allow for the cost of performing hydrogelogical tests and avail a report with approximate water levels, water content and all relevant information	1	Item		
	Mobilization and demobilization	1	Item		
B	Mobilization/ demobilization of drilling unit, equipment materials, personnel and all other required supplies. It shall include erecting / dismantling of drilling unit.	1	Item		
	Drilling				
C	Drilling of a 200mm diameter borehole from 0-100m below surface.	100	LM		
D	Drilling 200mm diameter borehole from 101-200m below surface	100	LM		
E	Drilling 200mm diameter borehole from 201-300m below surface	100	LM		
	Rock Samples Allow for geoogical rock sampling at every 2 metre interval upto 300m	1	Item		
	Water supply				
F	Allow for supply of water for drilling and camp use, maintenance of storage tanks, water injection systems and usage of drilling foam.	1	Item		
	Casing and gravel packing				
G	Supply and installation of 152mm diameter plain steel casing.	175	LM		
H	Installation of 152mm diameter slotted steel casing. Slots should be of **maximum 2mm in size**. To be as approved by the Engineer	175	LM		
I	Installation of filter **gravel pack.** Particles shoulod be between **2-4mm in size**	7	Ton		
	Centralisers				
J	Allow for centralisers at **6 metre** intervals for entire length of casing	30	No		
	Borehole development				
K	Allow for borehole development by air jet (approximately 12 hrs) before test pumping.	12	Hrs		
	Discharge Test - Pumping				
A	Test pumping to ascertain borehole yield for at least **24 hours** including installation and withdrawal of pumping unit and recovery measurements.	1	Item		
B	Supply and install a well head slab.	1	Item		
	Sub-total c/f to the next page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-total b/f from the previous page				
	Borehole cap				
C	Supply and install a borehole cap of 152mm diameter.	1	Item		
	Water chemical analysis and borehole report				
D	Allow for the cost of water chemical analyses and borehole completion report with water struck & water rest levels if possible	1	Item		
	Observation Pipe				
E	Supply and install 40mm diameter galvanised steel water pipe (observation pipe), Class C.	300	Lm		
F	Supply and install high quality pressure gauge as Kent or equivalent range 0-7kgf/cm² complete with accessories for mounting on galvanised pipe.	1	No		
	Air Orifice Valve				
G	Supply and install single orifice air valve, complete with pipe mounting accessories.	1	Item		
H	Supply and install 50mm diameter rising main GMS water pipe, Class C.	330	Lm		
I	50mm diameter gate valve as 'pegler' or approved equivalent	1	No		
J	50mm diameter non-return valve as pegler or approved equivalent.	2	No		
K	50mm diameter galvanised steel bend	4	No		
L	50mm diameter water meter as 'Kent' or approved equivalent	1	No		
	Pumping system				
A	Supply and install submersible borehole pump, continously rated and capable of pumping 5m^3/hr of water against a total head of 280m. The entire pump-set body, impellers, shaft etc shall be made of heavy duty stainless steel material. The pump shall have inbuilt non-return valve, tail strainer, cable guard, a cut-off switch **2 metres above** the pump inlet level and various installation accessories. The pump shall be suitable for 3- phase 415V. It shall be as 'GRUNDFOS SP17-27 or an equal and approved equivalent.	1	No.		
	Sub-total c/f to the next page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
	Sub-total b/f from the previous page				
B	Control Panel Supply and install a control panel to be mounted off a wall. The control panel shall be water tight with corrosion resistant from hinged lockable door metal enclosure and have Merlin Gerin swith-gear and Telemechanique control gear. The control panel shall have star-delta starter, phase failure, surge protector, isolator, voltemeter, ammeter, MCBs, 150m long float switch cable, float switch and any other necessary controls.	1	Item		
	Electric Cabling and accessories				
C	6mm² 4-core PVC round hardened PVC submersible electric cable. Waterproof.	330	LM		
D	2.5mm² 4-core PVC round hardened PVC electrode cables waterproof.	330	LM		
E	2.5mm² 4-core PVC/SWA/PVC armoured cable from control panel to High level tank float switch	150	LM		
E	25mm² 4-core PVC/SWA/PVC armoured cable from power house to control panel	150	LM		
A	25mm dia. heavy gauge PVC ducts.	30	LM		
B	Electrode pair	2	No.		
C	Level regulator complete with mounting box	2	No.		
D	Allow for field labour and transport and also for the borehole equipment transport.	1	Item		
E	Allow for 3-phase electric power to conduct the necessary tests for the borehole equipment on site.	1	Item		
F	Supply and install 50mm diameter galvanised steel water pipe, Class C for supply of water to the storage tank.	50	Lm		
G	Allow for testing and commissioning of the borehole	1	Item		
H	Allow for any other item necessary for completion of the works(please specify): i) ii)				
Total Cost of Borehole Drilling and Equipping Works c/f to Summary Page					

ITEM	DESCRIPTION	QTY	UNIT	RATE (KSHS)	AMOUNT (KSHS)
####	**WATER TANKS**				
A	i) Supply, deliver and assemble a **high level water tank**, made of pressed steel sectional tank plates 6mm thick plates (type 1 and 4) and of size 1000mm x 1000mm. Capacity of Tank to be **30,000 litres** and of preferred dimensions 5000mm x 3000mm x 2000mm. The Tank to come complete with tank cover, mosquito proof inspection vent, internal stays, jointing material, bolts and nuts including applying two coats of non-toxic bituminous paint on the inside and two coats of aluminum paint on the outside.	3	No.		
	ii) Level regulator	3	No.		
	iii) Water level indicator	3	No.		
	iv) Internal ladder	3	No.		
	v) External ladder for tank platform	3	No.		
B	**Pipework**				
	i) 50mm dia. gms pipe	50	Lm		
	ii) 80mm dia.- ditto-	20	Lm		
C	**Bends/Elbows**				
	i) 50mm dia. Bend/Elbows	5	No.		
	ii) 80mm dia. – ditto –	2	No.		
D	**Tees**				
	i) 50mm dia.	5	No.		
	ii) 100x50mm dia.	2	No.		
E	Allow for sterilization including flushing out water and chlorine to the satisfaction of the Engineer	1	Item		
F	Allow for setting to work, testing and commissioning of the whole system to the satisfaction of the Engineer.	1	Item		
Total Cost of Water Tank Works c/f to Summary Page					

SUMMARY PAGE FOR MECHANICAL WORKS

ITEM	DESCRIPTION	AMOUNT (KSHS)
1	Preliminaries	
2	Plumbing & Drainage	
3	Mechanical Ventilation & Air Conditioning	
4	Fire Protection	
5	Borehole Drilling & Equipping	
6	Water Tank Works	
7	Contingency Sum	4,000,000.00
	TOTAL FOR MECHANICAL WORKS C/F TO GRAND SUMMARY	

Amount in words (Kenya
.....

Tenderer's name and

P.O.

Date: ..... Signature:.....

PIN NO. ..... VAT CERTIFICATE NO: .....
(Provide copy) (Provide copy)

Witness: ..... Address:.....

Signature:..... Date:

SCHEDULE OF UNIT RATES

ITEM	DESCRIPTION	RATE
1	15mm cross head bib tap with a back inlet and basin tap flow regulator of 6 litres/minute. Tap to have chrome plated finish.	
2	Supply and install Galvanized mild steel ductwork (434 * 434mm), 1.2mm thick (SWG 18) thick complete with bends, transformation pieces, hangers, supports, sleeves, flexible connections,branch duct take offs, flanges,turning vanes and all necessary accessories. The material should be adhered with Armaflex 520 adhesive or equivalent, and all joints and seams secured with 'Arma-Chek Silver Tape'.	
3		
4		
5		

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED

CONTENTS

CLAUSE No.		PAGE
1.	GENERAL NOTES TO THE TENDERER……	MT/1
2.	TECHNICAL SCHEDULE……	MT/2

TECHNICAL SCHEDULE

1. General Notes to the Tenderer

1.1 The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.

1.2 The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer's literature shall be accepted. Failure to comply with this may have his tender disqualified.

1.3 Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer.

TECHNICAL SCHEDULE

The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT** comprehensive manufacturer's technical brochures and performance details for all items listed in this schedule (fill forms attached).

TECHNICAL SCHEDULE				
Item	**Description**	**Manufacturer**	**Country of Origin**	**Remarks (Catalogue No. etc.)**
1	Water Closet			
2	Hand Drier			
3	Cooking Range			
4	cPVC, uPVC & muPVC pipes & fittings			
5	GMS pipes & fittings			
6	Gate Valves			
7	Portable Fire Extinguishers			
8	Inert Gas Cylinder (Fire Suppression)			
9	Ventilation Fans			
10	High Wall Mounted Air Conditioning Unit			
11	Ceiling Concealed Duct Air Conditioning Unit			
12	Ceiling Cassette Air Conditioning Unit			
Tenders Must attach Brochures/Catalogues as it will form part of evaluation criteria				

DRAWING SCHEDULE

DRAWING SCHEDULE:

As shall be provided during project implementation.