PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT

TENDER DOCUMENT

WP ITEM NO. D116 CO/MSA/1802 JOB NO. 10464C

TENDER NO: MMBE&MA/SDBE&F/26/2023-2024

CLIENT
STATE DEPARTMENT FOR THE BLUE ECONOMY AND FISHERIES
P.O.BOX 58187 – 00200
NAIROBI

PROJECT MANAGER
WORKS SECRETARY
S.D.P.W
P.O.BOX 30743-00100
NAIROBI

ARCHITECT
CHIEF ARCHITECT
S.D.P.W
P.O.BOX 30743-00100
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QUANTITY SURVEYOR
CHIEF QUANTITY SURVEYOR
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P.O.BOX 30743-00100
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ELECTRICAL ENGINEER
CHIEF ENGINEER - ELECTRICAL
S.D.P.W
P.O.BOX 30743-00100
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STRUCTURAL ENGINEER
CHIEF ENGINEER - STRUCTURAL
S.D.P.W
P.O.BOX 30743-00100
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MECHANICAL ENGINEER- (B.S)
CHIEF ENGINEER - MECHANICAL
S.D.P.W
P.O.BOX 30743-00100
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INTERIOR DESIGNER
CHIEF DESIGNER
S.D.P.W
P.O.BOX 30743-00100
NAIROBI

MARCH, 2024

PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT

TENDER DOCUMENTS

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PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT

Prepared by: -
Quantities and Contract Department,
State Department for Public Works,
Ministry of Lands, Public Works, Housing & Urban Development,
P. O. Box 30743-00100,
NAIROBI.

The contract for the above-mentioned works entered into this…… day of..... 2024 by the undersigned refers to these Tender Documents and the MINISTRY OF LANDS, PUBLIC WORKS, HOUSING & URBAN DEVELOPMENT and public General Specification dated March, 1976 (together with any amendments issued thereto) shall be read and construed as part of the said contract.

…….. ……

THE CONTRACTOR	**THE PRINCIPAL SECRETARY, STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES**
Date : ……	Date: …….

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

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

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

SIGNATURE PAGE AND NOTES

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TENDER DOCUMENTS FOR PROCUREMENT OF WORKS (BUILDING AND ASSOCIATED CIVIL ENGINEERING WORKS)

1) NAME AND CONTACT ADDRESSES OF PROCURING ENTITY

Name: **STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES**

Address: **P.O.BOX 58187 – 00200, NAIROBI**

Email address: p**s@blueeconomy.go.ke**

2) Invitation to Tender (ITT) No: **MMBE&MA/SDBE&F/26/2023-2024**

3) Tender Name: **PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT**

INVITATION TO TENDER

PROCURING ENTITY: STATE DEPARTMENT FOR THE BLUE ECONOMY AND FISHERIES

CONTRACT NAME AND DESCRIPTION: PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT

The ***PRINCIPAL SECRETARY– STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES*** invites sealed tenders for the construction of the **PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT**

1. Tendering will be conducted under open competitive method National using a standardized tender document. Tendering is open to all qualified and interested Tenderers.

2. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours *0900 to 1700 hours EAT* at Ngong Road, Maji House Room 343.

3. A complete set of tender documents may be purchased or obtained by interested tenderers upon payment of non refundable fees of **(Kshs.1,000)** in cash or Banker's Cheque and payable to the address given below. Alternatively, the tender documents may be downloaded from the website; **www.mibema.go.ke;** or **www.tenders.go.ke;** Tender documents obtained electronically will be free of charge.

4. Tender documents may be viewed and downloaded for free from the websites; *www.mibema.go.ke;or www.tenders.go.ke;* Tenderers who download the tender document must forward their particulars immediately to *ps@blueeconomy.go.ke* to facilitate any further clarification or addendum.

5. Tenders shall be quoted in Kenya Shillings and shall include all taxes. Tenders shall remain valid for **126** days from the date of opening of tenders.

6. All Tenders must be accompanied by a *tender Security* of ***Kenya Shillings 11,000,000.00*** in form of a Bank Guarantee or Insurance Companies approved by Public Procurement Regulatory Authority (PPRA).

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

8. Completed tenders must be delivered to the address below on or before **9th April, 2024 at 1000hrs EAT**. Electronic Tenders *will not be* permitted.

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

10. Late tenders will be rejected.

11. The addresses referred to above are:

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

(1) STATE DEPARTMENT FOR THE BLUE ECONOMY AND FISHERIES.

(2) MAJI HOUSE, 3RD FLOOR, NAIROBI COUNTY

(3) P.O.BOX 58187 – 00100

(4) Email: ps@blueeconomy.go.ke.

B. Address for Submission of Tenders.

(1) STATE DEPARTMENT FOR THE BLUE ECONOMY AND FISHERIES.

(2) MAJI HOUSE, 3RD FLOOR, NAIROBI COUNTY

(3) P.O.BOX 58187 – 00200, NAIROBI

C. Address for Opening of Tenders.

(1) STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES

(2) RAGATI ROAD, NHIF BUILDING, 14TH FLOOR, BOARDROOM, NAIROBI COUNTY

Name_____

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

Designation _____

Signature _____

Date _____

PART I: 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 "in writing" 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 enterprise to enable it compete with firms in the private sector on an equal basis.

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

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

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

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

3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, local sub-contracts and 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 III - EVALUATION AND QUALIFICATION CRITERIA, Item 9".*

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

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

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

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

4.0 Eligible goods, equipment, and services

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

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

5.0 Tenderer's responsibilities

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

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

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

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

B. CONTENTS OF TENDER DOCUMENTS

6.0 Sections of Tender Document

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

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

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

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

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents. Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of a pre-arranged site visit 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 p**rior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender documents in accordance with ITT 7.4, including a description of the inquiry but without identifying its source. If so specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents following the procedure under ITT 8 and ITT 22.2.

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

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

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

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

8.0 Amendment of Tender Documents

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

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

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

C. PREPARATION OF TENDERS

9.0 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 accordance with ITT 20.3;
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 tender liable for disqualification.

12.0 Form of Tender and Schedules

12.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed 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.

12. Alternative Tenders

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

12.2 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.

12.3 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.

12.4 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, and in sufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

17.0 Documents Establishing the Eligibility and Qualifications of the Tenderer

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

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

17.3 If a margin of preference applies as specified in accordance with ITT 33.1, national tenderers, individually or in joint ventures, applying for eligibility for national preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 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, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

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

i) If the procurement process is still ongoing, the tenderer will be dis 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 incomplete, inaccurate 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 request Tenderers to extend the period of validity of their Tenders.The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 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 the request shall not be required or permitted to modify itsTender.

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) sign the Contract in accordance with ITT47; or

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

19.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA to debar 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 original and the copies, the original shall prevail.

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

20.3 The original and all copies of the Tender shall be typed or writtenvin 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 Sealing and Marking of Tenders

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

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

b) in 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 and time also specified in the **TDS.** When so specified in the **TDS**, tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the **TDS**.

22.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the 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 Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 23.1).

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

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

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

E. EVALUATION AND COMPARISON OF TENDERS

26. Confidentiality

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

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

26.3 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 a response. 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 without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:

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

33.0 Margin of Preference and Reservations

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

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

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

33.4 Where it is intended to reserve a contract to 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 Procuring Entity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.

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

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

35. Evaluation of Tenders

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

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

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

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

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

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

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

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be 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 Low Tenders

37.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in 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 the Tender;
b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 30% of the Contract Price;
c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works;
d) reject the Tender,

39.0 Qualifications of the tenderer

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

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

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

40.0 Lowest evaluated tender

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

a) Most responsive to the Tender document; and
b) the lowest evaluated price.

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

The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without 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

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

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

44.0 Stand still Period

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

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

45.0 Debriefing by The Procuring Entity

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

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

46.0 Letter of Award

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

47.0 Signing of Contract

47.1 Upon the expiry of the fourteen days of the Notification of Intention to enter 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 return it to the Procuring Entity.

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

48.0 Performance Security

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

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

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

49.0 Publication of Procurement Contract

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

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

50.0 Procurement related Complaint

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

SECTION II - TENDER DATA SHEET

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

A. GENERAL	
ITT 1.1	The name of the Contract is: **PROPOSED COMPLETION OF LIWATONI FRESH AND FROZEN FISH PROCESSING PLANT** The reference number of the contract is**: W.P ITEM NO. D116 CO/MSA/1802 JOB NO. 10464C** **Tender No: MMBE&MA/SDBE&F/26/2023-2024** The number and identification of Lots (contracts) comprising this tender are: ***Not applicable***
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 consultancy services for the contract being tendered for are: **STATE DEPARTMENT FOR PUBLIC WORKS, P.O.BOX 30743-00100 NAIROBI**
ITT 3.1	The maximum number of members in a 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: ***Head of Supply Chain Management*** ***MAJI HOUSE, 3RD FLOOR, NAIROBI COUNTY*** ***Email: ps@blueeconomy.go.ke; procurementfisheries@gmail.com*** To reach the Procuring Entity not later than **27th March, 2024** ***(ii)*** The Procuring Entity shall publish its response at the website ***www.mibema.go.ke***
ITT 7.2	A pre-arranged pretender site visit ***shall*** take place at the following date, time and place: Date: **29th March, 2024** Time: **Between 1100hrs EAT and 1600hrs EAT** Place: **Liwatoni Fisheries Complex, Mombasa County**
ITT 7.3	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than **27th March, 2024** before the meeting.
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.mibema.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: ***Head of Supply Chain Management*** ***MAJI HOUSE, 3RD FLOOR, NAIROBI COUNTY*** ***P.O.BOX 58187 – 00200, NAIROBI*** ***Email: ps@blueeconomy.go.ke; procurementfisheries@gmail.com***
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: ***Fixed***
ITT 15.2 (a)	Foreign currency requirements ***not allowed.***
ITT 18.1	The Tender validity period shall be ***126*** days.

ITT 18.3	(a) The Number of days beyond the expiry of the initial tender validity period will be 30 days. (b) The Tender price shall be adjusted by the following percentages of the tender price: *(i) By (Not applicable) % the 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	Tenderer shall provide a Tender Security. Tender security in form of Bank Guarantee from a bank approved by Public Procurement Regulatory Authority (PPRA) or insurance company approved by Insurance Regulatory Authority (IRA) in the amount of **Kenya Shillings 11,000,000.00.**
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: **PRINCIPAL SECRETARY** **STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES** **MAJI HOUSE, 3RD FLOOR, ROOM 343, NAIROBI COUNTY** **P.O.BOX 58187 – 00200 NAIROBI** Tenderers 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: **RAGATI ROAD, NHIF BUILDING, 14TH FLOOR, BOARDROOM** Date and time of tender opening: **9th April, 2024 at 1000HRS EAT**
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.
ITT 32	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: 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. Mechanical Installation Works*** ***2. Electrical Installation Works*** 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)
ITT 50	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: **Head of Supply Chain Management** Procuring Entity: **STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES** Email address: **ps@blueeconomy.go.ke; procurementfisheries@gmail.com** 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

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

1.1 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.

1.2 EVALUATION AND CONTRACT AWARD CRITERIA

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

2.0 PRELIMINARY EXAMINATION FOR DETERMINATION OF RESPONSIVENESS

Preliminary examination for Determination of Responsiveness

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

PRELIMINARY EVALUATION

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 1** under builders 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; Tender security in form of Bank Guarantee from a bank approved by Public Procurement Regulatory Authority (PPRA) or insurance company approved by Insurance Regulatory Authority (IRA) in the amount of **Kenya shillings 11,000,000.00.** 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 for 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 **(2020,2021 and 2022) (Certified by a Commissioner for Oaths)**
MR19	Domestic Contractor's Agreement (witnessed by a notaries agent)- **A duly signed and stamped Pre-Contract Agreement not earlier than 3 months** between the Main Contractor and the *Electrical Installation works, Mechanical Installation Works* Sub contractors stating that if the main contractor is awarded the contract, he shall work with the firms as their domestic sub-contractors (Not necessary if the Main Contractor is also registered for specialist works)

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

Preliminary evaluation criteria for the proposed specialist works listed under ITT 34.3 to be as contained in the following Bills:

- Electrical Installation Works
- Mechanical Installation Works

30 TENDER EVALUATION (ITT 35)

In addition to the criteria listed in ITT 35.2 (a) – (d) the following criteria shall apply if permitted under ITT 35.2(e):

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; attach affidavit signed and stamped by an advocate or commissioner for oaths	

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 1,000,000,000.00, 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 200,000,000.00 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 5 years, starting 1st January *2019*	**4.** Form EXP - 4.1 **Experience**	
4.2 (a)	Specific Construction & Contract Management Experience	A minimum number of *3* similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between 1st January *2021* and tender submission deadline i.e. Other Minimum three projects of different nature. Five (5) contracts, each of minimum value Kenya shillings 500,000,000.00 equivalent. Bidders shall attach copies of the following: a) Letters of Award or, b) Signed Contract and Completion Certificate for the respective projects. or c) If project is ongoing it must be at least 80% complete. Bidder to attach copies of interim payment certificates	Form EXP 4.2(a)	

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. **THE TECHNOLOGY MUST BE MET FOR PROJECTS IN AREAS OF HOSPITAL BUILDINGS, MANUFACTURING AND FOOD PRODUCTION DUE TO HIGH LEVEL HYGIENE REQUIREMENT.**
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 **PRINCIPAL SECRETARY - STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES** 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 • **a) Relevant Transport** - 2No Pick-ups - 2No Tippers/Lorry Trucks • **b) Relevant Tools and Equipment** - 1no. Excavator - 1no. Concrete Mixer - 1no. Hoist - 1no. Concrete Pump - At least 4 sets of Steel Scaffolds	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, Quantity Surveying, or Construction Management. **2.** Registered Professional with the respective registration bodies **Board of Registration of Architects and Quantity Surveyors (BORAQS) with a valid practicing license** 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 – 8 years. **c) Foreman** Minimum qualifications and technical experience 1. Certificate - Building Construction, Electrical, or Mechanical 2. Experience - **8** years **d) Occupational Health and Safety Personnel** Qualifications and technical experience 1. Certificate- Occupational Safety and Health 2. Experience - **5** 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 BLUE ECONOMY AND FISHERIES, 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	Description of 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 ITEM			
1				
2				
3				
4				
5				
6				
	TOTAL COST OF LOCAL CONTENT			
	PERCENTAGE OF CONTRACT PRICE			

2. FORM EQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or 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 Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

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

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 theTender;
c) result in my dismissal from the contract.

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

Signature:_____

Date: (day month year): _____

Counter signature of authorized representative of the Tenderer:

Signature:_____

Date: (day month year): _____

5. TENDERERS QUALIFICATION WITHOUT PREQUALIFICATION

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

5.1 FORM ELI -1.1

Tenderer Information Form

Date:_____

ITT No. andtitle:_____

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 • Establishing that the Tenderer is not under the supervision of the Procuring Entity 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

52 FORM ELI -1.2

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

Date:_____

ITT No. 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: _____ _____ 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'sName:_____Date:_____

JVMember's Name_____ITT No. andtitle:_____

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 2.4 as indicated below.

Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
[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.

54 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)**				
	Year1	Year2	Year 3	Year4	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 incase of JV member, and not an affiliated entity (such as parent company or group member).

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

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

d) Correspond to accounting periods already completed and audited.

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

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

5.5 FORM FIN – 3.2:

Average Annual Construction Turnover

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

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

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

5.6 FORMFIN–3.3:

Financial Resources

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

No.	Source of financing	Amount (Kenya Shilling equivalent)
1		
2		
3		
4		

5.7 FORMFIN–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 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'sName:_____ Date:_____

JVMember'sName_____ ITT No. andtitle:_____

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:				
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)
Year1			
Year 2			
Year 3			
Year 4			
Procuring Entity's Name:			
Address: Telephone/fax number E-mail:			
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:			

[2] *If applicable*

OTHER FORMS

6. FORM OF TENDER

(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

INSTRUCTIONS TO TENDERERS

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

ii) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address. Tenderers are reminded that this is a mandatory requirement.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION FORMS OF THE TENDERER as listed under (xxii) below.

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

To: .....*[Insert complete name of Procuring Entity]*

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[1] of Kenya Shillings [*[Amount in figures]*_____Kenya Shillings *[amount in words]*_____

The above amount includes foreign currency[2] 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;

---

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

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

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

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

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

vi Option 1, incase of one lot: Total 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 commit to provide to the procuring entity the Beneficial Ownership Information in conformity with the Beneficial Ownership Disclosure Form upon receipt of notification of intention to enter into a contract in the event we are the successful tenderer in this subject procurement proceeding.

xxii) We, the Tenderer, have duly completed, signed and stamped 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*]

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

(a) Tenderer's details

	ITEM	
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.
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			

(ii) **Conflict of interest disclosure**

	Type of Conflict	Disclosure YES ORNO	If YES provide details of the relationship with Tenderer
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract Specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

Certification

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

Full Name_____

Title or Designation_____

_____ _____

(Signature) *(Date)*

b) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

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

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

1. I have read and I understand the contents of this Certificate;

2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;

3. 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. The terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, 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/oragents/subcontractorswillnotengageinanycorruptorfraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of ……. *(insert name of the Procuring entity)* which is the procuring entity.

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

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

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

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

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

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

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[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.*

2. 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)]

4. 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)*

4. 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

5. 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

SECTION VIII - GENERAL CONDITIONS OF CONTRACT (GCC)

General Conditions of Contract

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1. GENERAL PROVISIONS

1.1 Definitions

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

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

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

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

"Completion Date" meansthedateofcompletionoftheWorksascertifiedbytheEngineer.

"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 or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over the days stated in the Special Conditions of Contract.

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

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

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

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

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

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

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

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

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

"Local Currency" means the currency of Kenya.

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

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

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

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

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

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

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

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

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

"Procuring Entity's Equipment" means the apparatus, machinery and vehicles (if any) made available by the

Procuring Entity for the use of the Contract or in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Procuring Entity.

"Procuring Entity's Personnel" means the Engineer, the Engineer, the assistants and all other staff, 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, sent, or transmitted to the address for the recipient's communications as stated in the Special Conditions of Contract. However:

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

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

1.4 Law and Language

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

1.4.2 The ruling language 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, the Party shall promptly give notice to the other Party of such error or defect.

1.9 Timely provision of Drawings or Instructions

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

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

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

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

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

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

1.10 Procuring Entity's Use of Contractor's Documents

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

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

a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

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

1.11 Contractor's Use of Procuring Entity's Documents

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

1.12 Confidential Details

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

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

1.13 Compliance with Laws

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

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

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

1.14 Joint and Several Liability

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

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

1.15 Inspections and Audit by the Procuring Entity

Pursuant to paragraph 2.2(e). of Appendix B to the General Conditions, the Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Public Procurement Regulatory Authority, Procuring Entity and/or persons appointed or designated by the Government of Kenya to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Procuring Entity if requested by the Procuring Entity. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 15.6 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise 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 the time (or times) stated in the **Special Conditions of Contract.** The right and possession may not be exclusive to the Contractor. If, under the Contract, the Procuring Entity is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Procuring Entity shall do so in the time and manner stated in the Specification. However, the Procuring Entity may withhold any such right or possession until the Performance Security has been received.

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

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

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

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

2.2 Permits, Licenses or Approvals

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

a) Copies of the Laws of Kenya which are relevant to the Contract but are not readily available, and
b) any permits, licenses or approvals required by the Laws of Kenya:

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

2.3 Procuring Entity's Personnel

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

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

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

2.4 Procuring Entity's Financial Arrangements

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

3. THE ENGINEER

3.1 Architect Duties and Authority

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

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

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

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

3.1.5 Except as otherwise stated in these Conditions:

a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Architect shallbedeemedtoactfortheProcuring 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 shall describe the physical conditions, so that they can be inspected by the Architect and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Architect may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

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

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

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

4.12.6 However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Architect may also review whether other physical conditions in similar parts of the Works (if any) were more 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 Entity shall be responsible for the Procuring Entity's Equipment, except that

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

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

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

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

4.21 Progress Reports

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

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

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

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 Labor Laws

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

6.5 Working Hours

No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the **Special Conditions of Contract**, unless:
a) Otherwise stated in the Contract,
b) The Architect gives consent, or
c) The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, provided that work done outside the normal working hours shall be considered and paid for as overtime.

6.6 Facilities for Staff and Labor

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

6.7 Health and Safety

6.7.1 The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with 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 Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

6.14 Measures against Insect and Pest Nuisance

The Contractor shall 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 Prolonged Suspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Architect permission to proceed. If the Architect does not give permission within 30 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Architect shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after 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 (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable there after, the Contractor shall:

a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and

b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Procuring Entity on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

11.1.2 If a defect appears or damage occurs, the Contractor shall be notified accordingly by the Engineer.

11.2 Cost of Remedying Defects

11.2.1 All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

a) Any design for which the Contractor is responsible,

b) Plant, Materials or workmanship not being in accordance with the Contract, or

c) Failure by the Contractor to comply with any other obligation.

11.2.2 If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Procuring Entity, and Sub-Clause 13.3 [Variation Procedure] shall apply.

11.3 Extension of Defects Notification Period

11.3.1 The Procuring Entity shall be entitled subject to Sub-Clause 2.5 [Procuring Entity's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

11.3.2 If delivery and/ or erection of Plant and/ or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not 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 Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.

12.1.2 Whenever the Architect requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

a) promptly either attend or send another qualified representative to assist the Architect in making the measurement, and
b) supply any particulars requested by the Engineer.

12.1.3 If the Contractor fails to attend or send a representative, the measurement made by the Architect shall be accepted as accurate.

12.1.4 Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and 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 work done by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

12.3.2 For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contractor, if there is no such item, specified for similar work.

12.3.3 Any item of work included in the Bill of Quantities for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.

12.3.4 However, for a new item of work, a new rate or price shall be appropriate for such item of work if:

a) The work is instructed under Clause13 [Variations and Adjustments],

b) no rate or price is specified in the Contract for this item, and

c) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

12.3.5 Each new rate or price shall be derived from any relevant rates or prices in the Contract. If no rates or prices are relevant for the new item of work, it shall be derived from the reasonable Cost of executing such work, prevailing market rates, together with profit, taking account of any other relevant matters.

12.3.6 Until such time as an appropriate rate or price is agreed or determined, the Architect shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

12.3.7 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: *(corrected tender price– tender price)/ tender price X 100*.

12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

a) The Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;

b) The omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and

c) this cost is not deemed to be included in the evaluation of any substituted work; then the Contractor shall give notice to the Architect accordingly, with supporting particulars. Upon receiving this notice, the Architect shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

13. VARIATIONS AND ADJUSTMENTS

13.1. Right to Vary

13.1.1 Variations may be initiated by the Architect at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. No Variation instructed by the Architect under this Clause shall in any way vitiate or in validate the Contract.

13.1.2 The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Architect stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Architect shall cancel, confirm or vary the instruction.

13.1.3 Each Variation may include:

a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),

b) changes to the quality and 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 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

13.6 Provisional Sums

13.6.1 Each Provisional Sum shall only be used, in whole or inpart, in accordance with the Architect instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Architect shall have instructed. For each Provisional Sum, the Architect May instruct:

a) Work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or

b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:

   i) The actual amounts paid (or due to be paid) by the Contractor, and

   ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in **the Special Conditions of Contract** shall be applied.

13.6.2 The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

13.7 Dayworks

13.7.1 For work of a minor or incidental nature, the Architect may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

13.7.2 Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

13.7.3 Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall 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 amounts to cover the contingency of other rises and falls in costs.

13.9.3 The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

Price Adjustment Formula

Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

P = A + B Im/Io
where:

P is the adjustment factor for the portion of the Contract Price payable.

A and **B** are coefficients **specified in the SCC,** representing then on adjustable and adjustable portions, respectively, of the Contract Price payable and

Im 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 a form approved by the Engineer, showing in detail the amounts to which the Contractor considers itself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause4.21 [Progress Reports].

14.3.2 The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);

b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];

c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in **the Special Conditions of Contract** to the total of the above amounts, until the amount so retained by the Procuring Entity reaches the limit of Retention Money (if any) stated **in the Special Conditions of Contract**;

d) any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];

e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];

f) any other additions or deductions which may have become due under the Contractor otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and

g) the deduction of amounts certified in all previous Payment Certificates.

14.4 Schedule of Payments

14.4.1 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 are satisfied:

a) The Contractor has:

i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and

(ii) submitted statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

and either:

b) the relevant Plant and Materials:

i) are those listed in the Schedules for payment when shipped,

ii) have been shipped to Kenya, enroute to the Site, in accordance with the Contract; and

iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Architect together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Procuring Entity in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration; or

c) the relevant Plant and Materials:

i) are those listed in the Schedules for payment when delivered to the Site, and

ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration and appear to be in accordance with the Contract.

14.5.4 The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Architect determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

14.5.5 The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

14.6.1 No amount will be certified or paid until the Procuring Entity has received and approved the Performance Security. Thereafter, the Architect shall, within 30 days after receiving a Statement and supporting documents, deliver to the Procuring Entity and to the Contractor an Interim Payment Certificate which shall state the amount which the Architect fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Architect on the 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.

14.6.4 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) other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub-paragraph (a) (i) above;

b) payment of the damages specified in the Special Conditions of Contract, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;

c) other payments to the Procuring Entity by the Contractor shall be made in the currency in which the sum was expended by the Procuring Entity, or in such currency as may be agreed by both Parties;

d) if any amount payable by the Contractor to the Procuring Entity in a particular currency exceeds the sum payable by the Procuring Entity to the Contractor in that currency, the Procuring Entity may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and

e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the Central Bank of Kenya.

15. TERMINATION BY PROCURING ENTITY

15.1 Notice to correct any defects or failures

If the Contractor fails to carry out any obligation under the Contract, the Architect may by notice require the Contractor to make good the failure and to remedy it within 30 days.

15.2 Termination by Procuring Entity

15.2.1 The Procuring Entity shall be entitled to terminate the Contract if the Contractor breaches the contract based on following circumstances which shall include but not limited to:

a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],
b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,

c) without reasonable excuse fails:
   i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
   ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 30 days after receiving it,

d) subcontracts the major part or whole of the Works or assigns the Contract without the consent of the Procuring Entity,

e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of 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 Payment on Termination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Procuring Entity shall promptly:

a) Return the Performance Security to the Contractor,
b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and
c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. RISK AND RESPONSIBILITY

17.1 Indemnities

17.1.1 The Contractor shall indemnify and hold harmless the Procuring Entity, the Procuring Entity's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

a) Bodily injury, sickness, disease or death, of any person what so ever arising 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) Payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (e)and (g) of Sub-Clause 17.3 [Procuring Entity's Risks], Accrued Costs shall be payable.

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

17.5 Intellectual and Industrial Property Rights

17.5.1 In this Sub-Clause, "infringement" shall refer to an infringement (or alleged infringement) of any patent, registered design, copyright, 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) Shall be effected and maintained by the Contractor as insuring Party,

b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,

c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Procuring Entity's Risks],

d) shall also cover, to the extent specifically required in the tendering documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Procuring Entity of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h)of Sub-Clause 17.3 [Procuring Entity's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated **in the Special Conditions** of Contract (if an amount is not so stated,t his sub-paragraph (d) shall not apply), and

e) may however exclude loss of, damage to, and reinstatement of:

i) a part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),

ii) apart of the Works which is lost or damaged 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) The amounts payable for any work carried out for which a price is stated in the Contract;

b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Procuring Entity when paid for by the Procuring Entity, and the Contractor shall place the same at the Procuring Entity's disposal;

c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;

d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and

e) the Cost of repatriation of the Contractor's staff and lab or employed wholly in connection with the Works at the date of termination.

19.7 Release from Performance

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 The Contractor shall keep such 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 of Kenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

i) Architectural Association of Kenya
ii) Institute of Quantity Surveyors of Kenya
iii) Association of Consulting Engineers of Kenya
iv) Chartered Institute of Arbitrators (Kenya Branch)
v) Institution of Engineers of Kenya

20.6.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

20.7 Arbitration with Foreign Contractors

20.7.1 Arbitration with foreign contractors shall be conducted in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.

20.7.2 The place of arbitration shall be a location specified in the **SCC;** and the arbitration shall be conducted in the language for communications defined in Sub-Clause1.4 [Law and Language].

20.8 Alternative Arbitration Proceedings

Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

20.9 Failure to Comply with Arbitrator's Decision

20.9.1 The award of such Arbitrator shall be final and binding up on the parties.

20.9.2 In the even 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.

Part A - Contract Data

Conditions	Sub Clause	Data
Procuring Entity's name and address	1.1	THE PRINCIPAL SECRETARY– STATE DEPARTMENT FOR THE BLUE ECONOMY AND FISHERIES of P.O.BOX 58187 – 00200 NAIROBI
Name and Reference No. of the Contract	1.1	W.P.ITEM NO.D116 CO/MSA/1802 JOB NO.10464C MMBE&MA/SDBE&F/26/2023-2024; Proposed Completion of Liwatoni Fresh and Frozen Fish Processing Plant
Engineer's Name and Address	1.1 and 3.1.1	The Works Secretary, State Department for Public Works of P.O.Box 30743-00100
Time for completion	1.1	52 weeks
Section	1.1	Not applicable
Defects Liability Period	1.1	26 weeks
Electronic transimission systems	1.3	To be agreed with the Engineer
Time for parties to enter 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.
Time for access to the site	2.1.1	To be agreed with the Engineer
Architect Duties and Responsibilities	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
Contractor’s Representative Name	4.3.1	To be agreed with the Engineer
Normal Working Hours	6.5	0800 Hrs to 1700 Hrs
Commencement date	8.1.1	To be agreed with the Engineer
Delay damages for the Works	8.7.1 & 14.15 (b)	0.0015 % of the Contract price per day
Maximum amount for Delay Damages	8.7.1	5% of the final contract price

Conditions	Sub Clause	Data
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*
Minimum Amount of Interim Payment Certificates	14.6	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%
Key Personnel names	6.9.1	To be agreed with the Engineer
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*

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 TO AWARD OF CONTRACT

This Notification of Award shall be sent to each Tenderer that submitted a Tender and was not successful. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative

   i) Name: *[insert Authorized Representative's name]*

   ii) Address: *[insert Authorized Representative's Address]*

   iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*

   iv) Email Address: *[insert Authorized Representative's email address]*

   [IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: [*email*] on [*date*] (local time)

   This Notification is sent by (*Name and designation*) _____

3. Notification of Award

   i) Procuring Entity: *[insert the name of the 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_____

Inthepresenceof_____

SIGNED ON_____on behalf of_____

By_____in the capacity of_____

Inthepresence 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.*

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[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

(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

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 pursuant to Regulation 13 (2A) and 13 (6) of the Companies (Beneficial Ownership Information) Regulations, 2020. 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 legal person (tenderer) or arrangements or a natural person on whose behalf a transaction is conducted, and includes those persons who exercise ultimate effective control over a legal person (Tenderer) or arrangement.

Tender Reference No.:_____[*insert identification no*]

Name of the Tender Title/Description:_____*[insert name of the assignment]* to:

_____*[insert complete name of Procuring Entity]*

In response to the requirement in 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 held directly or indirectly?: Direct…… Indirect……	**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? Direct…….. Indirect……
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					

	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)**
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…… … Indirect…… ...	**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? Direct…….. Indirect……
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality(ies)					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					
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]*

Designation of the person signing the Tender ..... [insert complete title of the person signing the Tender]

Signature of the personnamed above .....[insert signature of person whose name and capacity are shown above]

Date this ..... [insert date of signing] day of..... [Insert month], [insert year]

Bidder Official Stamp

PREAMBLES AND PRICING NOTES

A. GENERALLY

All work is to be carried out in accordance with the Ministry of Works General Specifications for Building works, 1976 Edition together with any amendments thereto and all references in this section are to this document. The Contractor is instructed to provide a copy of the Specifications on site at all times.

B. MANUFACTURERS' NAME

Manufacturer's names and catalogue references are given as a guide to quality and standards only. Alternative manufacture of equal quality will be accepted at the discretion of the Project Manager.

C. EXCAVATION

Prices are to include for excavating in all materials met with except rock as specified. Prices are also to include for planking and strutting, and for destroying all white ants nests and keeping excavations free from water.

D. INSECTICIDE TREATMENT

Treating surface of hardcore with approved insecticide shall include execution by Rentokil Laboratories Limited, Insecta Limited or other equal and approved who shall give a ten-year guarantee to the Employer.

E. CONCRETE WORK

All concrete shall conform to the "Concrete Specification for Building 1974" issued by The Structural Branch of the Ministry of Works.

Cover to Reinforcement

Unless otherwise specified on the drawing cover is to be:

Foundations 50 mm

Columns 50 mm

Beams 25 mm

Slabs 15 mm

Test Cubes

Allowance must be included in the tender for the preparation of concrete test cubes as required by the Engineer.

Precast Concrete Works

Prices are to include for handling reinforcement, and for bedding in cement mortar. Concrete will be class 25 unless otherwise specifies.

WALLING

Concrete Blocks

All concrete walling blocks are to be as described in the Ministry of Works Standard Specification for Metric Concrete Blocks issue in September 1972. Blocks shall be Type A, grade A2 and Type B, medium density. Solid blocks shall have a density not less than 1000kg/m3.

Stone

Stone for walling shall be hard, dense dark gray local stone from an approved source.
Stone for walling shall comply with BS CP 111 Part 2 of minimum cursing strength of 3.5 Newton per mm2. To be free from cracks, fissures or any other defects which are likely to affect the strength and to be delivered to site thoroughly cleaned.
Wall reinforcement shall be hoop iron, one layer per 90mm thickness, placed in the bed joint or alternate courses.
Prices for walling must allow for all costs in preparing, packing and sending sample blocks

Samples

Prices are to include for packing and sending sample blocks to the approved testing laboratory, Nairobi.

ROOFING

All roofing materials shall be specified in the Bills of Quantities, and laid in accordance with the manufacturer's instructions.

CARPENTRY

The grading rules for cypress shall be the same as those for podocarpus and all timber used for structural work shall be select (second grade)
All structural timber must conform to the minimum requirements for moisture content and preservative treatment and timber prices must allow for preparing, packing and sending samples for testing when required.
Prices must also include for all nails and fasteners

JOINERY

Cypress for all joinery shall be second grade in accordance with th latest grading rules of the Kenya Government
Where mahogany is specified, this refers to prime grade only. The Contractor may with the approval of the Project Manager, use either Msharagi or Mvuli in lieu of Mahogany but such approval will be given in case of shortages of the hardwoods specified.

JOINERY *continued*

Plugging shall be carried out by drilling walling or concrete with masonry drill and filling with propriety plugs of the correct sizes. Cutting with hammer and chisel will not be allowed.
Prices for joinery must include for pencil rounded arrises, protection against damage, nails, screws, framing and bedding in cement mortar as required.
Sizes given for joinery items are nominal sizes and exact dimensions of doors e.t.c must be ascertained on site.

IRONMONGERY

Shall be as specified in the Bills of Quantities, or equal and approved.
Prices must include for removing and refixing during and after painting, for labeling all keys, and for fixing to hardwood, softwood, concrete or blockwork.

METAL WORK

Structural Steelwork

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

Generally

All steelwork shall be cleaned free from rust and primed one coat or red lead primer before being delivered to the site.

Prices for Metal Windows

To include for assembling parts, bedding and pointing in mastic, building in fixing lugs, and plugging as necessary.

PLASTERWORK AND OTHER FINISHES

Generally

All plasterwork and paving to be as described in the Specification and in the Bills of Quantities.

Pavings

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

Ceramic Tiles

All ceramic tiles shall be as specified in the Bills of Quantities or other equal and approved and the contractor shall provide for varied colour, shades and design as specified.

GLAZING

Polished Plate Glass

Shall be general glazing quality.

Prime Rebates

Prices are to include for priming rebates before placing putty.

Broken or Scratched Glass

The contractor will be responsible at his own cost, for replacing any broken or scratched glass and handing over in perfect condition.

PAINTING

Generally

Note that the General Contractor is to provide scaffolding for all trades including painting.

Paint Category

Shall be category "A" of M.O.W. approved list and applied in accordance with the manufacturer's instructions and to the required coats.

Prices

Prices are to include for all preparatory work, priming coats and for protecting other works and for cleaning up on completion. Prices for painting on galvanized metal are to include for mordant solution as necessary.

PLUMBING AND ENGINEERING INSTALLATION

Generally

All work shall be executed by an approved specialist.

Drainage

All storm water drainage and foul sewerage pipework bedded on granular bed type "E" shall be rubber or flexible jointed.

Manhole Covers

Manhole covers shall be fabricated from 8mm mild steel plate. Prices are to include for standard lifting keyholes.

PRELIMINARIES

PARTICULAR PRELIMINARIES

Item	Description	Amount (KSh)
A	**EMPLOYER** The Employer is the Principal Secretary, State Department for Blue Economy The term "Employer" and "Government" wherever used in the contract	
B	**PROJECT MANAGER** The term "P.M" or "Project Manager" wherever used in these Bills of Quantities shall be deemed to imply the "Architect or Engineer" as defined in Condition 1 of the Conditions of Contract or such person or persons as may be duly authorised to represent him on behalf of the Government.	
C	**ARCHITECT** The term "Architect" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
D	**QUANTITY SURVEYOR** The term "Quantity Surveyor" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
E	**STRUCTURAL ENGINEER** The term "Structural Engineer" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
	Carried to Collection	

Item	Description	Amount (KSh)
A	**CIVIL ENGINEER** The term "Civil Engineer" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
B	**MECHANICAL ENGINEER** The term "Mechanical Engineer" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
C	**ELECTRICAL ENGINEER** The term "Electrical Engineer" shall be deemed to mean "The Project Manager." as defined above whose address unless otherwise notified is Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
D	**INTERIOR DESIGNER** The term "Interior Designer" shall be deemed to mean "the P.M" as defined above whose address, unless otherwise notified, is the Ministry of Lands, Public Works, Housing and Urban Development; State Department for Public Works, P.O. Box 30743, NAIROBI.	
E	**DESCRIPTION OF THE WORKS** The works to be carried out under this contract involves COMPLETION AND EQUIPPING OF FRESH AND FROZEN FISH PROCESSING SECTION AT LIWATONI COMPLEX AS PER SPECIFICATIONS HEREIN AND DRAWINGS. TENDER DRAWINGS MAY BE INSPECTED AT THE PROCUREMENT OFFICE, BLUE ECONOMY AND FISHERIES AT THE ADRESS IN THE INVITATION TO TENDER.	
	Carried to Collection	

Item	Description	Amount (KSh)
A	**LOCATION OF SITE** The site of the proposed works is located in Liwatoni, Likoni, Mombasa County. The Contractor shall be deemed to have visited the site and satisfied himself as to:- **a)** The nature, position, topography and access of the site **b)** The amount of the rubbish or debris to be cleared away before commencement **c)** The nature, current usage, proximity and size of adjoining property and buildings **d)** The availability of land for the erection and positioning of all temporary structures, plant and materials necessary for the execution of the works. The Contractor shall obtain approval from the relevant Local Authority in adherence to site access and erection of temporary structures and must ensure all matters relating to the requirements of these authorities. No claim will be allowed for travelling or other expenses which may be incurred by the Contractor in visiting the site or preparing the tender for the works. The Contractor is advised that the site is within a compound in use and all measures should be taken to avoid nuisance to the existing users. Notices should be given prior to disruption of services. This includes prevention/ minimizing noise, dust, fumes, providing access to public facilities as required (lifts, washrooms, staircases). Notices should be given prior to disruption of services. Where necessary the Contractor will provide temporary facilities for use as instructed by the Project Manager.	
B	**SIGNING OF THE TENDER DOCUMENTS** The bidder shall append his / her signature and / or company's rubber stamp on each and every page of tender document.	
C	**MEASUREMENTS** The works are measured in accordance with the Standard Method of Measurement of Building Works 2008 Edition, published by the Architectural Association of Kenya. In the event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract documents shall immediately be referred to the PROJECT MANAGER in accordance with Clause 22 of the Conditions of Contract. The discrepancies shall then be treated as a variation and be dealt with in accordance with Clause 22 of the said Conditions.	
	Carried to Collection	

Item	Descriptions	Amount (KSh)
A	**DEMOLITIONS AND ALTERATIONS** The Contractor is to allow for all temporary protection required during the works including ordinary and special dust screens, hoardings, barriers, warning signs, etc as directed by the Project Manager and as necessary for the adequate propping and protection of existing property, finishes, workmen employed on the site, employer's agents and the public. Any damage or loss incurred due to the insufficiency of such protection must be made good by the Contractor. All protective devices are to be removed on completion of the works and any necessary making good consequent upon this is to be excecuted to the satisfaction of the Project Manager. The works shall be propped, strutted and supported as necessary before any alteration or demolition work commences. Prices shall include for all cleaning and preparatory work to structure and finishes and for making good to all finishes on completion whether or not specifically described. Unless described as set aside for re-use all arising debris and surplus materials shall be carefully removed from building and carterd away from site. The Contractor shall be entirely responsible for any breakage or damage which may occur to materials required for re-use during their removal unless it is certified by the Project Manager that such damage or breakage was inevitable as a result of the condition of the item concerned.	
B	**MATERIALS FROM DEMOLITIONS** Any materials arising from demolitions and not re-used shall become the property of the Ministry of Public Works. The Contractor shall allow in his rates the cost of transporting the demolished materials to where directed by the Project Manager.,	
C	**CLEARING AWAY** The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate and upon completion of the works, remove and clear away all plant, equipment, rubbish, unused materials and stains and leave in a clean status. The whole of the works shall be delivered up clean, complete and in perfect condition in every respect to the satisfaction of the Project Manager.	
	Carried to Collection	

Item	Descriptions	Amount (KSh)
A	**CLAIMS / COMPENSATION EVENTS** It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and / or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such a claim or intent to claim notice to the PROJECT MANAGER within the contract period. No claim shall be entertained upon the expiry of the said contract period.	
B	**URGENCY OF THE WORKS** The Contractor is notified that these " works are urgent" and should be completed within the period stated in these Particular Preliminaries. The Contractor shall allow in his rates for any costs he/ she deems that he/she may incur by having to complete these works within the stipulated contract period.	
C	**PAYMENTS** Payments shall be in accordance with the Conditions of Contract Agreement. In order to facilitate this, a list of the general component elements for the works is given at the summary page of these specifications and the tenderer is requested to break down his tender sum commensurate to the said elements. The tenderer's attention is drawn to the fact that the GOVERNMENT SHALL NOT MAKE ADVANCE PAYMENTS	
D	**PREVENTION OF ACCIDENT, DAMAGE OR LOSS** The Contractor is notified that these works are to be carried out on a restricted site where the client is going on with other nomal activities. The Contractor is thus instructed to take reasonable care in the execution of the works as to prevent accident.	
E	**WORKING CONDITIONS** The Contractor shall allow in his rates for any interferance that he may encounter in the course of the works for the Client may in some cases ask the Contractor not to proceed with the works until some activities within the site are completed.	
F	**SIGNBOARD** Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away a signboard as designed, specified and approved by the Project Manager.	
	Carried to Collection	

Item	Descriptions	Amount (KSh)
A	**LABOUR CAMPS** The Contractor shall not be allowed to house labour on site. Allow for transporting workers to and from the site during the tenure of the contract.	
B	**PRICING RATES** The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, all to comply with the said Conditions of Contract.	
C	**SECURITY** The Contractor shall allow for providing adequate security for the works and the workers in the course of execution of this contract. No claim will be entertained from the Contractor for not maintaining adequate security for both the works and workers.	
D	**PAYMENT FOR MATERIALS ON SITE** All materials for incorporation in the works must be stored on site before payment is effected, unless specifically exempted by the Project Manager. This is to include materials of the Contractor, nominated sub-Contractors and nominated suppliers.	
E	**EXISTING SERVICES** Prior to the commencement of any work, the Contractor is to ascertain from the relevant authority the exact position, depth and level of all existing services in the area and he/she shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services.	
F	**BID SECURITY** The Bidder shall furnish, as part of his bid, a security in accordance with clause 19.1 of Instruction to Tenderers (Section I of the Tender Document) Guarantees issued as surety for **the bid shall be valid for a period of 126 days from the date of Tender Opening.**	
	Carried to Collection	

Item	Descriptions	Amount (KSh)
A	**PERFORMANCE SECURITY** A bond of 5% of the contract sum will be required in accordance with clause 48.0 of Instruction to Tenderers (Section I of the Tender Document) and Clause 4.2 of the- General Conditions of Contract (Section VIII of the Tender Document). Note that no payments on account of works executed will be made to the Contractor until he has submitted the Performance Bond to the Project Manager, duly stamped signed and sealed by an approved bank or insurance company.	
B	**INSURANCE** The Contractor shall insure as required in Condition No. 18 of the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the PROJECT MANAGER either by production of an Insurance Policy or Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the PROJECT MANAGER shall from time to time ascertain that premiums are duly paid up by the Contractor who shall, if called upon to do so, produce the receipted premium renewals for the PROJECT MANAGER's inspection.	
C	**TENDER DOCUMENTS** Tender documents are as listed in Clause 11 of **Section I-Instruction to Tenderers** of the Tender Document.	
	Carried to Collection	

Item	Descriptions	Amount (KSh)
A	**VALUE ADDED TAX** The Contractor's attention is drawn to V.A.T PUBLIC NOTICE NO. 6 of 5th August 1993 regarding the Finance Bill 1993 which expanded the V.A.T base to cover construction services amongst other items. The Contractor shall familiarise himself with the said notice and allow in all his Bills of Quantities rates for the net tax. (i.e less input tax where applicable) as required by law. The tenderer is advised that in accordance with Government Public Notice No.35 &36 dated 11th September 2003, operational from 1st October 2003, V.A.T will be deducted against the contract sum at the prevailing rate by the Employer and remitted directly to the Commissioner of V.A.T through all interim certificates. It should however be noted that this is not additional tax but a new mode of payement for V.A.T, any excess payment will be refundable once the Contractor has submitted monthly returns to the Commissioner of V.A.T who will do the refunds when satisfied that the V.A.T regulations have been complied with.	
	PROJECT MANAGEMENT TEAM EXPENSES Disclaimer: The following items are to be expended at the discretion of the Project Manager.	
B	Allow a provisional sum of Kenya Shillings Six Million **(Kshs 6,000,000.00)** for project management team expenses.	**6,000,000.00**
C	Allow for profits and attendance for the Item above (_____ %)	
	Carried to Collection	

Item	Descriptions		Amount (KSh)
	INDUSTRIAL AND PRESHIPMENT VISITS - PM EXPENSE		
A	Provide a sum of Kenya Shillings Fifteen Million (KSh. 15,000,000.00) for a maximum of three overseas visits for Bench marking, prefabrication and pre-shipment of Equipments at the project's expense. Maximum number of officers 14. no. who are in the Project Implementation Team. Includes the costs of perdiems, airport transfers and other expenses.		**15,000,000.00**
B	Allow for profits and attendance for the Item above (_____	%)	
	CLERK OF WORKS AND RESIDENT ENGINEERS EXPENSES - PM EXPENSE		
C	Allow a Sum of Kenya Shillings Two Million (2,000,000.00) forClerk of Works and Resident Mechanical Engineer's Expenses for the duration of the contract.		**2,000,000.00**
D	Allow for profits and attendance for the Item above (_____	%)	
	SUBSISTENCE ALLOWANCE EXPENSE - PM EXPENSE		
E	Allow a Sum of **Kenya Shilling Ten Million (KSh. 10,000,000.00)** only for Subsistence Allowances and perdiems to be expended at the Express Authority of the Project Manager.		**10,000,000.00**
F	Allow for profits and attendance for the Item above (_____	%)	
	TRANSPORT TO SITE - PM EXPENSE		
G	Provide a sum of Kenya Shillings Eleven Million (KSh. 11,000,000.00) for a tickets, Airport transfers for maximum of three site visits per month by the Project Implementation Team.		**11,000,000.00**
H	Allow for profits and attendance for the Item above (_____	%)	
	STATUTORY APPROVALS		
J	Provide a Sum of **Kenya Shilling Ten Million (KSh. 10,000,000.00)** only for issuance of statutory licences by NEMA, NCA and The MCG to be expended at the Express Authority of the Project Manager.		**10,000,000.00**
K	Allow for profits and attendance for the Item above (_____	%)	
	Carried to Collection		

Item	Descriptions	Amount (KSh)
	PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT The following are the insertions to be made in the appendix to the Contract Agreement	
	Period of Final Measurement	3 Months from Practical Completion
	Defects Liability Period	6 Months from Practical Completion
	Date for Possession	To be agreed with the Project Manager
	Date for Completion	52 weeks from date of Possession
	Liquidated and Ascertained Damages	at a rate of 0.0015% per day
	Period of Interim Certificates	Monthly
	Period of Honouring Certificates	30 Days
	Percentage of Certified Value Retained	10%
	Limit of Retention Fund	5%
	Carried to Collection	

Item	Descriptions	Amount (KSh)
	COLLECTION	
	Brought forward from page LIWATONI/PP/1	
	Brought forward from page LIWATONI/PP/2	
	Brought forward from page LIWATONI/PP/3	
	Brought forward from page LIWATONI/PP/4	
	Brought forward from page LIWATONI/PP/5	
	Brought forward from page LIWATONI/PP/6	
	Brought forward from page LIWATONI/PP/7	
	Brought forward from page LIWATONI/PP/8	
	Brought forward from page LIWATONI/PP/9	
	Brought forward from page LIWATONI/PP/10	
	PARTICULAR PRELIMINARIES CARRIED TO PRELIMINARIES' SUMMARY	

Item	Descriptions	Amount (KSh)
	GENERAL PRELIMINARIES	
A	**PRICING OF ITEMS OF PRELIMINARIES AND PREAMBLES** Prices will be inserted against items of Preliminaries in the Contractor's priced Bills of Quantities and Specification. The Contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract.	
B	**ABBREVIATIONS** Throughout these Bills, units of measurement and terms are abbreviated and shall be interpreted as follows:- **C.M.** Shall mean cubic metre **S.M.** Shall mean square metre **L.M.** Shall mean linear metre **MM** Shall mean Millimetre **Kg.** Shall mean Kilogramme **No.** Shall mean Number **Prs.** Shall mean Pairs **B.S.** Shall mean the British Standard Specification Published by the British Standards Institution, 2 Park Street, London W.I., England. **Ditto** Shall mean the whole of the preceding description except as qualified in the description in which it occurs. **m.s.** Shall mean measured separately. **a.b.d** Shall mean as before described.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**SUFFICIENCY OF TENDER** The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices stated in the priced Bills of Quantities. Rates and prices quoted shall cover all his obligations under the contract and all matters and things necessary for the proper completion and maintenance of the works	
B	**RECORDS** The Contractor shall ensure proper records are kept and maintained for : Daily Reports on Personnel and Machinery; tracked programme; site photographs in digital camera; weather charts/reports; site instruction book and query book. a digital camera shall be provided for taking progress photos	
C	**PLANT, TOOLS AND VEHICLES** Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub Contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.	
D	**TRANSPORT.** Allow for transport of workmen, materials, etc., to and from the site at such hours and by such routes as may be permitted by the competent authorities.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**MATERIALS AND WORKMANSHIP.** All work is to be carried out in accordance with the Ministry of Works General Specifications for Building Works, 1976 Edition together with any amendments thereto. All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The Contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also order materials to be obtained from local sources as early as necessary to ensure that they are onsite when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.	
B	**SIGN FOR MATERIALS SUPPLIED.** The Contractor will be required to sign a receipt for all articles and materials supplied by the CLIENT at the time of taking deliver thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and for replacements of any such loss or damage with articles and/or materials which will be supplied by the CLIENT at the current market prices including Customs Duty and V.A.T., all at the Contractor's own cost and expense, to the satisfaction of the PROJECT MANAGER	
C	**STORAGE OF MATERIALS** The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the PROJECT MANAGER. Nominated Sub- Contractors are to be made liable for the cost of any storage accommodation provided especially for their use.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**SAMPLES** The Contractor shall furnish at his own cost any samples of materials or workmanship including concrete test cubes required for the works that may be called for by the PROJECT MANAGER for his approval until such samples are approved by the PROJECT MANAGER and the PROJECT MANAGER may reject any materials or workmanship not in his opinion to be up to approved samples. The PROJECT MANAGER shall arrange for the testing of such materials as he may at his discretion deem desirable, but the testing shall be made at the expense of the Contractor and not at the expense of the PROJECT MANAGER. The Contractor shall pay for the testing in accordance with the current scale of testing charges laid down by the Ministry of Public Works. The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the PROJECT MANAGER. The Contractor shall allow in his tender for such samples and tests except those in connection with nominated sub-contractors' work.	
B	**GOVERNMENT ACTS REGARDING WORK PEOPLE ETC.** Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the Contractor's attention is drawn to the provisions of the Factory Act 1950 and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurances, pensions and holidays for workpeople or so the safety, health and welfare of the workpeople. The Contractor must make himself fully acquainted with current Acts and Regulations including Police Regulations regarding the movement, housing, security and control of labour, labour camps , passes for transport, etc. It is most important that the Contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the information regarding all such regulations and/or restrictions which may affect the supply and control of labour, etc., and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**PUBLIC AND PRIVATE ROADS.** The contractor shall maintain as required throughout the execution of the works and make good any damage to public or private roads arising from or consequent upon the execution of the works to the satisfaction of the local and other competent authority and the Project Manager.	
B	**EXISTING PROPERTY.** The Contractor shall take every precaution to avoid damage to all existing property including roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the Project Manager.	
C	**OCUPATIONAL HEALTH AND SAFETY MEASURES** The Project Manager expects the contractor to adhere to strict safety measures. In this regard the contractor should ensure that all his workers, the consultants and his sub-contractors workmen are wearing Personal Protective Equipment (PPE) before commencement of any work where applicable including overalls with the company name clearly printed on the back each with clearly marked Identification Numbers stitched or imprinted on. The Contractor shall allow for providing all watching, lighting, barriers,signs, covering open trenches and protection of the works, including Sub-Contract works, as may be necessary for the safety of the works and for the protection of the public and his own and Sub-Contractors' employees. He shall also ensure provision of first aid staff, access to ambulance services at all worksites and arrangement to access local hospital/dispensary with qualified medical staff. The Project Manager expects full compliance to this regulation and no excuses will be entertained for non-compliance.	
D	**OCUPATIONAL HEALTH AND SAFETY PERSONEL** The contractor shall allow for Occupational Health and Safety personnel as directed and afford every reasonable facility for the performance of their duties.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**ACCESS TO SITE AND TEMPORARY ROADS.** Means of access to the Site shall be agreed with the CLIENT prior to commencement of the work and Contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Site. Upon completion of the works, the Contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the PROJECT MANAGER	
B	**AREA TO BE OCCUPIED BY THE CONTRACTOR** The area of the site which may be occupied by the Contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the PROJECT MANAGER	
C	**OFFICE FOR THE PROJECT MANAGER** The contractor shall , if so instructed, supply, maintain, service, clean and light a fully furnished, suitable office, having an approximate floor area of not less than 50 sqm for exclusive use of the project. The office shall have a sample room, a toilet and bathroom, kitchen of suitable dimensions with clean running water and electricity connected to the approval of the Project Manager. The Contractor shall provide, erect and maintain a lock-up type water or bucket closet for the sole use of the PROJECT MANAGER including making temporary connections to the drain where applicable to the satisfaction of Government and Medical Officer of Health and shall provide services of cleaner and pay all conservancy charges and keep both office and closet in a clean and sanitary condition from commencement to the completion of the works and dismantle and make good disturbed surfaces. The office and closet shall be completed before the Contractor is permitted to commence the works. The Contractor shall make available on the Site as and when required by the "PROJECT MANAGER" a modern and accurate level together with levelling staff, ranging rods and 50 metre metallic or linen tape On completion of the contract, the contents of the office specified above shall revert to the Client. The contractor shall be responsible throughout the contract period for provision of insurance cover, maintenance of the office equipment and furniture, providing all necesary staff and providing security and garbage disposal facilities	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**LIGHTING AND POWER** The contractor shall provide at his own risk and cost all temporary artificial lighting and power for use on the works including all sub-contractors and specialists requirements and including all temporary connections, wiring, fittings etc and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection therewith.	
B	**WATER RESOURCES AND USEAGE** The Contractor shall provide at his own risk and cost all necessary water required for use in the works. The Contractor must make his own arrangements for connection to the nearest suitable water main and for metering the water used. He must also provide temporary tanks and meters as required at his own cost and clear away when no longer required and make good on completion to the entire satisfaction of the PROJECT MANAGER . The Contractor shall pay all charges in connection herewith. No guarantee is given or implied that sufficient water will be available from mains and the Contractor must make his own arrangements for augmenting this supply at his own cost. The contractor is to provide clean drinking water at the construction site for his workers at all times. All water shall be fresh, clean and pure, free from earthly vegetable or organic matter, acid or alkaline substance in solution or suspension.	
C	**SANITATION OF THE WORKS** The Sanitation of the works shall be arranged and maintained by the Contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the PROJECT MANAGER He may however be allowed use of the existing sanitation facilities but shall be responsible for the proper hygienic maintenace and any damage whatsoever. No guarantees are however given regarding the adequacy of the existing services The Contractor will be required to pay all conservancy charges and shall ensure clean daily maintenance and disinfecting of the latrines, and not less than once per week, the whole area shall be sprayed with disinfectant and insecticides and any temporary drains shall be removed and all works and surfaces disturbed made good and then the whole area disinfected and left clean and free from pollution to the satisfaction of the Architect and local authorities.	
D	**SUPERVISION AND WORKING HOURS** The works shall be executed under the direction and to the entire satisfaction in all respects of the PROJECT MANAGER who shall at all times during normal working hours have access to the works and to the yards and workshops of the Contractor and sub-Contractors or other places where work is being prepared for the contract.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**PROVISIONAL SUMS.** The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurement.Such sums are net and no addition shall be made to them for profit.	
B	**PRIME COST (OR P.C.) SUMS.** The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement . Persons or firms nominated by the Project Manager to execute work or to provide and fix materials or goods are described herein as Nominated Sub-Contractors.Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers.	
C	**PROGRESS CHART.** The Contractor shall provide within two weeks of Possession of Site and in agreement with the PROJECT MANAGER a Progress Chart for the whole of the works including the works of Nominated Sub-Contractors ; one copy to be handed to the PROJECT MANAGER and a further copy to be retained on Site. Progress to be recorded and chart to be amended as necessary as the work proceeds.	
D	**ADJUSTMENT OF P.C. SUMS.** In the final account all P.C. Sums shall be deducted and the amount properly expended upon the PROJECT MANAGER'S order in respect of each of them added to the Contract sum. The Contractor shall produce to the PROJECT MANAGER such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the Contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" (as previously described) following P.C. Sums shall be adjusted pro-rata to the physical extent of the work executed (not pro-rata to the amount paid) and this shall apply even though the Contractor's priced Bill shows a percentage in the rate column in respect of them. Should the Contractor be permitted to tender and his tender be accepted of any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**ADJUSTMENT OF PROVISIONAL SUMS.** In the final account all Provisional Sums shall be deducted and the value of the work properly executed in respect of them upon the PROJECT MANAGER's order added to the Contract Sum. Such work shall be valued , but should any part of the work be executed by a Nominated Sub-Contractor or the value of such work or articles for the work to be supplied by a Nominated Supplier, the value of such work or articles shall be treated as a P.C. Sum and profit and attendance comparable to that contained in the priced Bills of Quantities for similar items added.	
B	**NOMINATED SUB-CONTRACTORS** When any work is ordered by the PROJECT MANAGER to be executed by nominated sub-contractors, the Contractor shall enter into sub-contracts and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described the Contractor is to provide for such Sub-Contractors any or all of the facilities described in these Preliminaries. The Contractor should price for these with the nominated Sub-contract Contractor's work concerned in the P.C. Sums under the description "add for Attendance".	
C	**DIRECT CONTRACTS** Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In any such instances, profit relative to the P.C. Sum in the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**ATTENDANCE UPON OTHER TRADESMEN, ETC.** The Contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this Contract every facility for carrying out their work and also for use of his ordinary scaffolding. The Contractor, however, shall not be required to erect any special scaffolding for them. The Contractor shall perform such cutting away for and making good after the work of such tradesmen or persons as may be ordered by the PROJECT MANAGER and the work will be measured and paid for to the extent executed at rates provided in these Bills.	
B	**PROVISIONAL WORK** All work described as "Provisional" in these Bills of Quantities is subject to remeasurement in order to ascertain the actual quantity executed for which payment will be made. All "Provisional" and other work liable to adjustment under this Contract shall be left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the PROJECT MANAGER. Immediately the work is ready for measuring, the Contractor shall give notice to the PROJECT MANAGER. If the Contractor makes default in these respects he shall, if the PROJECT MANAGER so directs, uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**ALTERATIONS TO BILLS, PRICING, ETC.** Any unauthorised alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The Contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the priced Bills of Quantities.All items of measured work shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted.	
B	**BLASTING OPERATIONS** Blasting will only be allowed with the express permission of the PROJECT MANAGER in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost in accordance with any Government regulations in force for the time being, and any special regulations laid down by the PROJECT MANAGER governing the use and storage of explosives.	
C	**MATERIALS ARISING FROM EXCAVATIONS** Materials of any kind obtained from the excavations shall be the property of the Client. Unless the PROJECT MANAGER directs otherwise such materials shall be dealt with as provided in the Contract. Such materials shall only be used in the works, in substitution of materials which the Contractor would otherwise have had to supply with the written permission of the PROJECT MANAGER. Should such permission be given, the Contractor shall make due allowance for the value of the materials so used at a price to be agreed.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**PROTECTION OF THE WORKS.** Provide protection of the whole of the works contained in the Bills of Quantities,including casing , casing up, covering or such other means as may be necessary to avoid damage to the satisfaction of the PROJECT MANAGER and remove such protection when no longer required and make good any damage which may nevertheless have been done at completion free of cost to the Client.	
B	**WORKS TO BE DELIVERED UP CLEAN** Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings,glass inside and outside and any other parts of the works and remove all marks,blemishes, stains and defects from joinery, fittings and decorated surfaces generally,polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the PROJECT MANAGER	
C	**GENERAL SPECIFICATION.** For the full description of materials and workmanship, method of execution of the work and notes for pricing, the Contractor is referred to the Ministry of Roads and Public Works and Housing General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities.	
	Carried to collection	

Item	Descriptions	Amount (KSh)
A	**TRAINING LEVY** The Contractor's attention is drawn to legal notice No. 237 of October, 1971, which requires payment by the Contractor of a Training Levy at the rate of 1/4 % of the Contract sum on all contracts of more than Kshs. 50,000.00 in value.	
B	**MATERIALS ON SITE** All materials for incorporation in the works must be stored on or adjacent to the site before payment is effected unless specifically exempted by the PROJECT MANAGER. This includes the materials of the Main Contractor, Nominated Sub- Contractors and Nominated Suppliers.	
C	**HOARDING** The Contractor shall enclose the site or part of the works under construction with a hoarding 2400 mm high consisting of iron sheets on 100 x 50 mm timber posts firmly secured at 1800 mm centres with two 75 x 50 mm timber rails for a total length of approximately five hundred meters(500 m). The Contractor is in addition required to take all precautions necessary for the safe custody of the works,materials, plant, public and Employer's property on the site.	
D	**CONTRACTOR'S SUPERINTENDENCE/SITE AGENT** The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Project Manager and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	
	Carried to Collection	

Item	Descriptions	Amount (KSh)
	COLLECTION	
	Brought Forward From Page LIWATONI/GP/1	
	Brought Forward From Page LIWATONI/GP/2	
	Brought Forward From Page LIWATONI/GP/3	
	Brought Forward From Page LIWATONI/GP/4	
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	Brought Forward From Page LIWATONI/GP/GP/9	
	Brought Forward From Page LIWATONI/GP/GP/10	
	Brought Forward From Page LIWATONI/GP/GP/11	
	Brought Forward From Page LIWATONI/GP/GP/12	
	Brought Forward From Page LIWATONI/GP/GP/13	
	TOTAL FOR GENERAL PRELIMINARIES CARRIED TO PRELIMINARIES MAIN SUMMARY	

Item	Descriptions	Amount (Ksh)
	PRELIMINARIES' SUMMARY	
1	PARTICULAR PRELIMINARIES	
2	GENERAL PRELIMINARIES	
	TOTAL PRELIMINARIES CARRIED TO GRAND SUMMARY	

ITEM	DESCRIPTION	PAGE	AMOUNT
	BUILDER'S WORK SUMMARY		
1	CHANGING ROOMS		
2	CANNARY CLADDING		
3	FRESH AND FROZEN AREA		
4	NEW CANOPY		
5	GATE		
6	GENERATOR HOUSE		
7	WASTE WATER TREATMENT TANKS		
8	ICE PLANT SUPPORT SLAB		
9	NEW COLD ROOM		
10	CIVIL WORKS		
	TOTAL BUILDER'S WORK CARRIED TO GRAND SUMMARY		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	CHANGING ROOMS				
	PARTITIONS/CUBICLES				
	Supply and fix T Line Toilet Cubicle system in Compact Laminate HPL panel, Comprising of Rigid HPL components (1) Indicator lock (2) Reverse Hinges (3) Height adjustable legs (4) Door Knobs (5) coat hook and aluminium (Brush Finish) (6) Top rail (7) H-Section (8) U-Section (9) Silicon strip to be inserted in H section to provide noise dampening (10) screws & plugs with water, chemical, heat, bacteria, fire, impact and scratch resistant 12mm T Line Compact Laminate. The top rail to be fixed end to end and all the mid and end pilasters will be fixed into it. The whole system with maximum 300mm clearance height from floor. U- Sections acting as HPL Board to Board jointing and board to wall fixing.				
A	Toilet Cubicle System (L shape) with Standard Dimension of 1400mm High x 1300mm width x 1000mm depth which includes a 800mm width x 1300mm height roor to Ladies Changing rooms	NO	25		
B	Ditto to men's changing rooms	NO	16		
C	Ditto Disabled	NO	2		
D	Front Panel (1shape) with standard dimension of 1300mm Height x 1000mm width which includes a 800mm width x 1300mm height door to Ladies Changing Rooms	NO	25		
E	Ditto to men's changing rooms	NO	16		
F	Ditto Disabled	NO	2		
	Urinals Partitions				
G	Supply and fix Urinal partition with SS Clamp with interconnection between which the Water, Chemical, Heat, Bacteria, Fire impact & Scratch Resistant 12mm T Line compact laminate will be fixed and the other side of the clamp will be screwed in the wall from both sides	NO	5		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	DOORS				
	Steel doors				
	Supply, Assemble and fix the following purpose made Stainless Steel sliding doors				
A	Door size 1800 x 2500mm high	NO	2		
B	Door size 1000x2100mm high	NO	3		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	FITTINGS AND FIXTURES				
	The following in 700 No. changing rooms cabinets overall size 500 x 300 x 400mm high				
	Blockboard to B.S. 3444, spraypainted in marine paint, waterproof				
A	25mm thick shelving	SM	208		
B	Ditto divisions	SM	304		
C	800 x 1000mm doors hardwood lipped all round	SM	18		
D	19 x 19mm lipping tongued in and glued to edges of block board	LM	954		
	Supply and fix the following ironmongery				
E	Aluminium D-Handles	NO	9		
F	Malpha hinges	LM	18		
	Finishes				
G	20mm Thick cement screeding smooth trowelled to benching of kitchen cabinet	SM	46		
H	Allow a provisional sum for concrete benching and its finishings	ITEM	1	250,000	250,000.00
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	FINISHES				
	Internal finishes				
	Painting				
A	Prepare and apply three coats of epoxy resin paint to plastered wall surfaces	SM	556		
	Painting				
	Prepare and apply one coat of undercoat and two finishing coat of emulsion paint on				
B	Prepare and apply one finishing coat of epoxy resin paint to walls	SM	676		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	BUILDER'S WORK IN CONNECTION WITH SPECIALIST SERVICES (ALL PROVISIONAL).				
	PLUMBING & DRAINAGE INSTALLATION				
A	Plumbing & Drainage appliances chasings in floor screed, masonry and partition walling including cutting through walls for waste and mains water supply small pipes	SUM	1		
	HVAC INSTALLLATIONS				
A	Chasings, ceiling cuttings and cutting through walls for HVAC equipment and pipework installlations and mountings including diffusers, air conditioning and air conditiner outdoor units	SUM	1		
A	All other HVAC appliances	SUM	1		
	GENERAL ELECTRICAL SERVICE AND OTHER SPECIALIST WORKS				
A	Allow for Builder's work in connection with all General Electrical services for concealed system and trunking system	SUM	1		
B	Ditto: Fire Alarm and Detection System	SUM	1		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	CHANGING ROOMS				
	SUMMARY				
1	PARTITIONS AND CUBICLES		LIWATONI/CR/1		
2	DOORS		LIWATONI/CR/2		
3	FITTINGS AND FIXTURES		LIWATONI/CR/3		
4	FINISHES		LIWATONI/CR/4		
5	BUILDER'S WORK IN CONNECTION WITH SPECIALIST SERVICES		LIWATONI/CR/5		
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	CANARY FACTORY WALL CLADDING				
	Saflok Aluzinc sheet cladding Repairs				
A	Ditto 28G aluzinc (saflok 700 concealed fix cladding) sheets from MRM or other equal and approved cladding	SM	20		
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	FRESH AND FROZEN FISH FACTORY				
	Floor				
A	Prepare surfaces, scratch coat, supply and apply flow applied, medium to heavy duty cementitious polyurethane floor topping as SL 300 UT.	SM	973		
B	Ditto to edges of wall, junctions as skirting to walls	SM	179		
C	Prepare surface, scratch coat, supply and apply resin rich, trowell applied heavy duty polyurethane floor screed as RT 6000 UT on screeded surface (m.s) to fresh and frozen cold store.	SM	279		
D	Ditto to edges of wall, junctions as skirting to walls	SM	75		
	Painting				
	Prepare and apply one coat of undercoat and two finishing coat of emulsion paint on				
E	Prepare and apply one finishing coat of Epoxy resin paint to walls	SM	568		
	ELEMENT NO.3: BUILDER'S WORK IN CONNECTION WITH SPECIALIST SERVICES (ALL PROVISIONAL).				
	PLUMBING & DRAINAGE INSTALLATION				
F	Plumbing & Drainage appliances chasings in floor screed, masonry and partition walling including cutting through walls for waste and mains water supply small pipes	SUM	1		
	GENERAL ELECTRICAL SERVICE AND OTHER SPECIALIST WORKS				
G	Allow for Builder's work in connection with all General Electrical services for concealed system and trunking system	SUM	1		
H	Ditto: Fire Alarm and Detection System	SUM	1		
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	CANOPY				
A	Cut into existing concrete floor average 500mm deep for bases pit, 1000x1000mm wide and cart awy debris.	CM	24		
B	Provide reinforced concrete class 30 base.	CM	22		
C	50mm blinding in mass concrete 1:4:8 below the base	CM	10		
D	Vibrated reinforced concrete classs 30 in 300x300mm wide stub columns on base. ….....	CM	2		
E	78x50x4mm RHS structural steel in main vertical frame	KG	3,457		
F	Ditto 70x50x4mm SHS truss members	KG	2,685		
G	150 x 50 x 20 x 3mm ZED Purlins	LM	108		
H	Ditto 28G aluzinc (saflok 700 concealed fix cladding) sheets from MRM or other equal and approved roofing sheets on Z-Purlins.	SM	281		
J	Allowance 10% for gusset plates, brackets, bolts, connections, etc to all above steel structures.	KGS	1,843		
K	Prepare and apply one undercoat and two finishing coats gloss oil paint on fabricated mild steel roof members comprising rafters, ties, struts, gussetplates, etc. after erection, not exceeding 300mm girth	LM	575		
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	GATE				
	Mild Steel Gate				
A	Supply and fix pedestrian gate overall size 1000 x2400 mm high framed gate with 75x50mm RHS at 150mm c/c including locking accessories. Assemble and fix to opening cutting and pinning lugs ro concrete columns.	NO	1		
	Alucobond Cladding				
B	50x50x4mm SHS Structural steel tie members	KG	736		
C	Supply and fix approved 4mm thick Composite Aluminium Panels as 'Alucobond'or other equal and approved panels riveted or bolted on steel frame (ms)	SM	86		
	Finishes				
	Cement, Sand and Lime (1:1:3) mix plaster on:-				
D	12mm Plastered concrete ceiling steel trowelled smooth.	SM	80		
E	Ditto wall Surfaces	SM	0		
	Keypointing				
F	Horizontal Key pointing and vertical flush joints in cement:sand 1:4 render.	SM	52		
	Painting and Decoration as "DURACOAT " from M/S BASCO PRODUCTS (K) or other equal and approved manufacturer:-				
G	Prepare and apply three coats first quality plastic emulsion paint to plastered column surfaces.	SM	80		
H	Ditto gloss paint to metal surfaces	SM	43		
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	EXTENSION OF THE EXISTING GENERATOR HOUSE **ELEMENT NO.1: DEMOLITIONS AND ALTERATIONS**				
A	Carefully demolish existing wall including cleaning and removal of all arising, Make good disturbed surfaces.	SM	10		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO.2: SUBSTRUCTURES				
	(ALL PROVISIONAL)				
	Excavations and Earthworks				
A	Excavation to reduce levels in hard rock for concrete foundation footing including carting away and keeping excavated area free from water.	CM	66		
B	Ditto to bases from reduced level	CM	29		
	Disposal				
C	Load and cart away surplus materials	CM	41		
	Planking and strutting				
D	Allow for provision and subsequent removal of planking and strutting to uphold and maintain all faces of excavation.	ITEM	1		
	Keeping excavations free rom water				
E	Allow for keeping the whole of the excavations free from water, including running water or spring water including pumping or bailing	ITEM	1		
	Imported filling				
F	300 mm thick, handpacked and well compacted and levelled in 150mm thick layers.	CM	40		
G	50 mm Murram blinding on hardcore fill,	SM	132		
	Damp-proof Membrane: 1000 Gauge polythene sheet, lapped at joints and angles laid over blinded hardcore (measured nett-no allowance for laps).				
H	Horizontal over 300mm wide	SM	132		
	Anti-termite treatment				
J	Chemical anti-termite treatment executed by an approved specialist under a ten year guarantee to surfaces of hardcore, etc.	SM	132		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	Concrete Work				
	Plain in-situ concrete: mix 1:3:6 (Grade 15-15mm aggregates):-				
A	50mm Thick blinding to receive Column Bases	SM	55		
	Reinforced in-situ concrete mix: 1:1 :2 (Class 30) vibrated in:-				
B	Column bases	CM	29		
C	Strip footing	CM	11		
D	Columns	CM	1		
E	Floor bed, 150mm thick	SM	132		
	High Yield Ribbed Thermo Mechanically Treated (TMT) Steel Reinforcement to BS 4449 cut and bent in accordance with bar bending schedules including all tying wires and supports as described:-				
F	Assorted bars	KG	9,162		
	Steel mesh fabric reinforcement to B.S. 4483				
G	Supply and lay mesh fabric reinforcement laid in slab or bed (measured nett - no allowances made for laps) - Ref. A252 weighing 3.95 Kgs. per square metre	SM	132		
	Formwork to:-				
H	Vertical Sides of strip foundations	SM	37		
J	Ditto, column bases	SM	58		
K	Vertical Sides of columns	SM	19		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	FORMWORK(CONT'D)				
A	Edges of slabs 75 to 150 mm high	LM	46		
	Walling				
B	200mm thick coral block walling, machine cut grade 1 bedded and jointed in cement: sand mortar (mix 1:4)	SM	92		
	Sundries				
C	20 Gauge hoop iron ties 25 mm wide , 450 mm girth cast into concrete on one end, built into mortar joint of walling at every alternate course.	NO	48		
	Bituminous felt damp proof courses laid on and including levelling screed of cement mortar				
D	In walling, width- 200 mm	LM	92		
	Total Carried to Collection				
	ELEMENT NO. 2 SUBSTRUCTURE (ALL PROVISIONAL) From page LIWATONI/GH/2 " " LIWATONI/GH/3 " " Above				
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 3				
	SUPERSTRUCTURE				
	Vibrated reinforced concrete (mix 1:1.5:3) class 25 to:				
A	Columns	CM	4		
B	Beams	CM	7		
	Marine ply formwork to:-				
C	Vertical sides; Columns	SM	58		
D	Beams	SM	110		
E	Edges of slab; not exceeding 150mm high	LM	13		
	High Yield Ribbed Thermo Mechanically Treated (TMT) Steel Reinforcement to BS 4449 cut and bent in accordance with bar bending schedules including all tying wires and supports as described:-				
F	Assorted bars	KG	1,752		
	Roof Cover and Structure				
	The following in struxtural steel, cut, welded, ground smooth or bolted to frame, primed before fixing, hoisted at 4m above ground level.				
G	75 x 75 x 4mm SHS in wall plate and trusses	KG	2,253		
H	HD Bolts M16 x 500mm long	KG	64		
J	210 x 210 x 6mm thick MS plate	KG	225		
K	150 x 50 x 20 x 3mm ZED Purlins	LM	230		
L	16mm diameter sagrods	LM	100		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	Sundries				
A	Allowance 10% for gusset plates, brackets, bolts, connections, etc to all above steel structures.	KGS	100		
B	Prepare and apply one undercoat and two finishing coats gloss oil paint on fabricated mild steel roof members comprising rafters, ties, Struts, gussetplates, etc. after erection, not exceeding 300mm girth.	LM	700		
	Roof Covering				
C	Gauge 28prepainted IT4 Box profile roofing sheets, fixed to purlins in j-bolts with washers , weather caps and associated accessories, as manufactured by Mabati Rolling Mills or other equal and approved manufacturer.	SM	172		
D	225x25mm wrot cypress fascia board, prime grade fixed on to timber structure to details, primed before fixing.	LM	46		
	Prepare, Prime and Paint two undercoats, one finishing coat gloss paint on				
E	General timber surfaces 100-300mm girth	LM	46		
	Rainwater Goods				
	28 Gauge galvanised Iron				
F	150 x 150mm U- Shaped prepainted sheet gutter, gauge 14 fixed to fascia board with and including approved brackets	LM	50		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	Superstructure walling				
A	200mm thick coral block walling machine cut, grade 1 bedded and jointed in cement sand mortar 1:4	SM	114		
B	200mm x 50mm thick concrete vent block walling, jointed in cement:sand 1:3 mortar.	SM	24		
	Hessian Based Bituminous Felt damp proof course to BS 743 Type 5A				
C	200mm wide	LM	92		
	Mild Steel Door				
D	Double leaf wrot vehicular gate overall size 2400 x2400 mm high, framed in 75x50mm RHS at 600mm c/c, louvred sheets welded on as infill between frames, complete with locking accessories. Assemble and fix to opening cutting and pinning lugs ro concrete columns or block walls.	NO	1		
	Windows				
	Supply, assemble and fix the following purpose-made Aluminium windows; standard aluminuim section from approved manufacturer complete with frames, transomes, mullions and with and including permanent ventilators				
E	Window size 2200x1500mm	NO	1		
	Glazing				
	4mm Thick clear glass and glazing fixed with and including putty to steel windows				
F	Panes 0.1 - 0.5 square metres	SM	4		
G	Ditto Obscure	SM	1		
	Total Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 3 SUPERSTRUCTURE (ALL PROVISIONAL) From page LIWATONI/GH/5 From page LIWATONI/GH/6 From page LIWATONI/GH/7				
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 4				
	FINISHES				
	Floor Finishes				
A	15mm thick cement:sand screed, wood floated to receive terrazzo floor	SM	132		
B	Supply and lay 15mm thick terrazzo paving, ground smooth and polished to approval, complete with didviding strips at evey 2000mm both ways.	SM	132		
C	100mm x 20mm thick terrazzo skirting, rounded top and coved juntions.	LM	46		
	Cement, Sand and Lime (1:1:3) mix plaster on:-				
D	12mm plastered concrete beams and columns	SM	168		
E	Ditto wall Surfaces	SM	138		
	Keypointing				
F	Horizontal Key pointing and vertical flush joints in cement:sand 1:4 render.	SM	114		
	Cement, Sand (1:3) mix render to :-				
G	Beams and columns	SM	168		
	Painting and Decoration as "DURACOAT " or other equal and approved and applied as pe rmanufacturers printed instructions and to Project Managers approval:-				
H	Prepare and apply an undercoat and three finishing coats first quality plastic emulsion paint to plastered beams and column surfaces.	SM	168		
J	Ditto exterior quality silicone paint to beams and columns	SM	168		
K	Ditto: but gloss paint to metal surfaces	SM	18		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 5 **COMPLETION OF EXISTING GENERATOR HOUSE - (ALL PROVISIONAL)** **Roof Structure** **The following in struxtural steel, cut, welded, ground smooth or bolted to frame, primed before fixing, hoisted at 4m above ground level.**				
A	75 x 75 x 4mm SHS in wall plate and trusses	KG	2,479		
B	HD Bolts M16 X 500mm long	KG	70		
C	210 x 210 x 6mm thickk MS plate	KG	248		
D	150 x 50 x 20 x 3mm ZED Purlins	LM	253		
E	16mm diameter sagrods	LM	110		
	Sundries				
F	Allowance 10% for gusset plates, brackets, bolts, connections, etc to all above steel structures.	KGS	125		
G	Prepare and apply one undercoat and two finishing coats gloss oil paint on fabricated mild steel roof members comprising rafters, ties, Struts, gussetplates, etc. after erection	LM	734		
	Roof Covering				
H	Gauge 28 prepainted IT4 Box profile roofing sheets as manufactured by Mabati Rolling mills or other equjal and approved manufacturer	SM	189		
J	225x25mm wrot cypress fascia board, prime grade fixed on to timber structure to details, primed before fixing.	LM	49		
	Total Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	Rainwater Goods				
	28 Gauge galvanised Iron				
A	150 x 150mm U- Shaped prepainted sheet gutter, gauge 14 fixed to fascia board with and including approved brackets	LM	55		
	Prepare, Prime and Paint two undercoats, one finishing coat gloss paint on				
B	General timber surfaces 100-300mm girth	LM	49		
	Openings				
	Mild Steel Door				
C	Double leaf wrot vehicular gate overall size 2400 x2400 mm high, framed in 75x50mm RHS at 600mm c/c, louvred sheets welded on as infill between frames, complete with locking accessories. Assemble and fix to opening cutting and pinning lugs ro concrete columns or block walls.	NO	1		
	Windows				
	Supply, assemble and fix the following purpose-made Aluminium windows; standard aluminuim section from approved manufacturer complete with frames, transomes, mullions and with and including permanent ventilators				
D	Window size 2200x1500mm	NO	1		
	Glazing				
	4mm Thick clear glass and glazing fixed with and including putty to steel windows				
E	Panes 0.1 - 0.5 square metres	SM	3		
F	Ditto Obscure	SM	1		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	COMPLETION OF EXISTING GENERATOR HOUSE CONT'D				
	Finishes				
	Floor Finishes				
A	15mm thick cement:sand screed, wood floated to receive terrazzo floor (m.s)	SM	145		
B	Supply and lay 20mm thick terrazzo paving, ground smooth and machine polished to approval, complete with dividing strips at evey 2000mm both ways.	SM	145		
C	100mm x 20mm thick terrazzo skirting, macnine polished, rounded top and coved juntions.	LM	49		
	Cement, Sand and Lime (1:1:3) mix plaster on:-				
D	12mm plastered concrete beams and columns	SM	125		
E	Ditto wall Surfaces	SM	152		
	Keypointing				
F	Horizontal Key pointing and vertical flush render finish to walls	SM	152		
	Cement, Sand (1:3) mix render to :-				
G	Beams and columns	SM	125		
	Painting and Decoration as "DURACOAT " or other equal and approved and applied as pe rmanufacturers printed instructions and to Project Managers approval:-				
H	Prepare and apply an undercoat and three finishing coats first quality plastic emulsion paint to plastered beams and column surfaces.	SM	125		
J	Ditto exterior quality silicone paint to beams and columns	SM	168		
K	Ditto: but gloss paint to metal surfaces	SM	18		
	Total Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 5 COLLECTION COMPLETION OF EXISTING GENERATOR HOUSE (ALL PROVISIONAL) From page LIWATONI/GH/10 From page LIWATONI/GH/11 From page LIWATONI/GH/12				
	Total Carried to Summary				
	ELEMENT NO. 6 **BUILDER'S WORK IN CONNECTION WITH SPECIALIST SERVICES (ALL PROVISIONAL).** PLUMBING & DRAINAGE INSTALLATION				
A	Provide for Plumbing & Drainage appliances chasings in floor screed, masonry and partition walling including cutting through walls for waste and mains water supply small pipes	SUM	1		
	GENERAL ELECTRICAL SERVICE AND OTHER SPECIALIST WORKS				
B	Provide for Builder's work in connection with all General Electrical services, Generator works for concealed system and trunking system	SUM	1		
C	Ditto: Fire Alarm and Detection System	SUM	1		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	GENERATOR HOUSE SUMMARY				
	COMPLETION & EXTENSION				
1	DEMOLITIONS AND ALTERATIONS	LIWATONI/GH/1			
2	SUBSTRUCTURE	LIWATONI/GH/4			
3	SUPERSTRUCTURE	LIWATONI/GH/7			
4	FINISHES	LIWATONI/GH/9			
5	COMPLETION OF EXISTING GENERATOR HOUSE	LIWATONI/GH/12			
6	BUILDERS WORK IN CONNECTION WITH SERVICES WORKS	LIWATONI/GH/13			
	Total Carried To Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	WASTE WATER TREATMENT CHAMBERS - FILTRATION PROCESS				
	Concrete Work				
A	Provision for excavation in hard rock for concrete pillar bases in the ocean including keeping free from water.		SUM		**800,000.00**
	Reinforced in-situ concrete mix: 1:1.5 :3 (Grade 25-20mm aggregates), in sika waterproofing additive, vibrated in:-				
B	Bases	CM	12		
C	Pillars	CM	8		
D	150mm thick suspended slab	SM	80		
E	150mm thick walls	SM	88		
F	800x800x800mm high inlet manholes, in concrete manhole covers to details, complete with any excavations and formwork	NO	4		
	High Yield Ribbed Thermo Mechanically Treated (TMT) Steel Reinforcement to BS 4449 cut and bent in accordance with bar bending schedules including all tying wires and supports as described:-				
G	Assorted bars	KG	6,819		
	Formwork to:-				
	Leave hole in slab, 150mm thick for outlet pipe				
H	Bases	SM	58		
J	Pillars	SM	77		
K	Suspended slab	SM	80		
L	Walls	SM	176		
M	Edge of slab 75-150mm high	LM	72		
N	Provision for outlet pipe built into the concrete slab, under the tank/chamber	NO	4		
	Total Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	Aggregates				
A	450mm thick layer, 50mm diameter pebbles	CM	31		
B	450mm thick layer of River sand	CM	31		
C	450mm thick layer of Charcoal	CM	31		
D	450mm thick layer of River sand	CM	31		
E	5mm thick geotextile membrane, 2 layers per tank	SM	139		
	Total Carried to collection				
	COLLECTION				
1	From Page	LIWATONI/WWTC/1			
2	From Above	LIWATONI/WWTC/2			
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ICE PLANT SUPPORT SLAB				
	ELEMENT NO. 1				
	FOUNDATIONS (ALL PROVISIONAL)				
	Concrete Work				
A	Provision for excavation in hard rock for concrete pillar bases in the ocean including carting away and keeping excavated area free from water.		SUM		**202,500.00**
	Hardcore fill				
B	Supply 300mm thick hardcore filling , handpacked, well compacted and levelled in 100mm layers.	SM	90		
C	Supply and lay 50mm Quarry dust blinding on surfaces of hardcore (m.s)	SM	90		
	Anti -Termite treatment				
D	TERMIDOR 25EC or other equal and approved to surfaces of hardcore at the rate of 7litres per square metre, applied as per manufacturers printed instructions.	SM	90		
	Damproof membrane: 1000 gauge polythene sheet, lapped at joints and angles laid over binded hardcore (Measured nett no allowance for laps)				
E	Horizontal over 300mm wide	SM	90		
	Reinforced in-situ concrete mix: 1:1.5 :3 (Grade 25-20mm aggregates), in sika waterproofing additive, vibrated in:-				
F	Bases/foundations	CM	12		
G	Pillars	CM	4		
H	Ground beam	CM	4		
J	150mm thick suspended ground slab	SM	90		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	High Yield Ribbed Thermo Mechanically Treated (TMT) Steel Reinforcement to BS 4449 cut and bent in accordance with bar bending schedules including all tying wires and supports as described:-				
A	Assorted bars	KG	5,085		
	Formwork in marine ply to:-				
B	Bases	SM	41		
C	Pillars	SM	38		
D	Ground beam	SM	69		
E	Edge of slab 75-150mm high	LM	42		
F	32mm thick cement and sand mix (1:3) screed, smooth trowelled laid on concrete bed(m.s)	SM	90		
G	Ditto to edges of slab, not exceeding 200mm high. ….....	LM	42		
H	Provide a Provisional Sum of Kenya Shillings One Million (Kshs. 1,000,000.00) for Cover shed to later details		SUM		1,000,000.00
	Total Carried to Collection				
	COLLECTION ROOF STRUCTURE From page LIWATONI/IPS/1 " " Above				
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	NEW 1000MT COLD ROOM				
	ELEMENT 1: SUBSTRUCTURES AND ALTERATIONS				
A	Dismantle existing walls and panels to allow for corridor. Make good disturbed surfaces and refix the panels.	SM	96		
	Stryofoams				
B	Excavations for foundations not exceeding 500mm deep in hard rock and cart away.	CM	48		
	Hardcore Filling				
C	300mm hardcore fill, handpacked depth not exceeding 300mm thick well compacted and levelled in 150mm thick layers.	SM	96		
D	50mm Quarry dust blinding spread on hardcore	SM	96		
	Soil Sterilization				
E	TERMIDOR 25EC or other equal and approved to surfaces of hardcore at the rate of 7litres per square metre, applied as per manufacturers prinetd instructions.	SM	96		
	Damproof membrane: 1000 gauge polythene sheet, lapped at joints and angles laid over binded hardcore (Measured nett no allowance for laps)				
F	Horizontal over 300mm wide	SM	96		
G	200mm thick coral block walling, machine cut grade 1 bedded and jointed in cement: sand mortar 1:4	SM	144		
H	20 Gauge hoop iron ties 25 mm wide 450 mm girth cast into concrete one end and built into mortar joint of walling at every alternate course.	LM	50		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	In-situ concrete work **Vibrated reinforced concrete (class 25) as described in:**				
A	Foundation Concrete	CM	17		
B	200mm thick slab	SM	96		
C	Ditto 200mm thick machine bases	SM	20		
	Reinforcements High Yield Ribbed Thermo Mechanically Treated (TMT) Steel Reinforcement to BS 4449 cut and bent in accordance with bar bending schedules including all tying wires and supports as described:-				
D	Assorted bars	KG	6,030		
E	Fabric mesh double layer reinforcement Ref No.A142 weighing 2.22Kg/m². No allowance made for laps	SM	96		
	Marine ply Formwork to:-				
F	Foundations	SM	38		
G	Edge of slab 150-225mm high	LM	96		
H	Ditto 225-300mm high	LM	12		
	Floor Finishes Cement and sand (1:3) screeding smooth trowelled laid on concrete bed (m.s)				
J	32mm thick cement and sand mix (1:3) screed, smooth trowelled laid on concrete bed(m.s)	SM	700		
K	25mm thick cement and sand (1:3) render to plinth surfaces	SM	22		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	COLLECTION				
	ELEMENT NO. 2				
	SUBSTRUCTURE				
	From page LIWATONI/CR/1				
	From page LIWATONI/CR/2				
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT 2: SUPERSTRUCTURE				
	WALLING				
A	200mm thick coral block walling, machine cut grade 1 bedded and jointed in cement: sand mortar 1:4	SM	288		
B	Ditto 150mm thick	SM	288		
	Hessian Based Bituminous Felt Damp Proof Course to BS 743 Type 5A (measured nett to allowance for laps).				
C	200mm Wide	LM	96		
D	150mm Wide ….....	LM	96		
E	20 Gauge hoop iron ties 25 mm wide 450 mm girth cast into concrete one end and built into mortar joint of walling at every alternate course.	NO	350		
	CONCRETE SUPERSTRUCTURE				
	In-situ concrete work **Vibrated reinforced concrete (class 25) as described in:**				
F	Beams	CM	15		
G	200mm thick Suspended slab	SM	96		
	High Yield Ribbed Thermo Mechanically Treated (TMT) Steel Reinforcement to BS 4449 cut and bent in accordance with bar bending schedules including all tying wires and supports as described:-				
H	Assorted bars	KG	3,480		
	Marine ply Formwork to:-				
J	Beams	SM	230		
K	Soffits of suspended slab	SM	96		
L	Edge of slab 150-225mm high	LM	96		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 3: STRUCTURAL STEEL ROOF				
	Structural steel work				
	All structural steelworks shall be in accordance with ASTM A50 KS02-104 grade 250, all welding in accordance with BS5135 and bolts and nuts, grade 4.6 to BS4360. All STEEL WORK shall be primed with red oxide before delivery to site				
	The following in 4No. Truss Girder (Spanning 11,700mm) Hoisted and placed in position machine room				
A	50 x 50 x 4mm SHS tie members	KG	3,770		
B	Ditto 100 x 75 x 4mm	KG	2,546		
C	75 x 75 x 4mm SHS Truss members	KG	2,876		
D	HD Bolts M16 x500mm long	KG	64		
E	210 x 210 x 6mm thickk MS plate	KG	148		
F	150 x 50 x 20 x 3mm ZED Purlins	LM	192		
G	16mm diameter sagrods	LM	35		
	Roof Covering				
H	Gauge 28prepainted IT4 Box profile roofing sheets, fixed to purlins in j-bolts with washers , weather caps and associated accessories, as manufactured by Mabati Rolling Mills or other equal and approved manufacturer.	SM	125		
J	225x25mm wrot cypress fascia board, prime grade fixed on to timber structure to details, primed before fixing.	LM	96		
	Prepare, Prime and Paint two undercoats, one finishing coat gloss paint on				
K	General metal surfaces 100-300mm girth	LM	867		
	Total Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	Rainwater Goods				
	28Gauge galvanised iron				
A	150 x 150mm U- Shaped prepainted sheet gutter, gauge 14 fixed to fascia board with and including approved brackets	LM	96		
B	Extra over gutter for outlet	NO	6		
C	Extra over gutters for 90 degrees bend	NO	6		
D	150mm diameter PVC down pipedown pipe fixed to wall with and including approved holderbats, finished in an undercaot and three finishing coats of silicone exterior paint or other equakl and approved.	LM	20		
E	Extra over ditto for swanneck	NO	6		
F	Ditto horse shoe	NO	6		
	Total Carried to Collection				
	COLLECTION ELEMENT NO. 3 ROOF STRUCTURE From page LIWATONI/CR/5 " " Above				
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	ELEMENT NO. 4: FINISHES				
	Floor Finishes				
	Cement and sand (1:3) screeding smooth trowelled laid on concrete bed (m.s)				
A	32mm thick cement and sand mix (1:3) screed, smooth trowelled laid on concrete bed(m.s)	SM	96		
B	Prepare surface, scratch coat, supply and apply resin rich, trowell applied heavy duty polyurethane floor screed as RT 6000 UT on screeded surface (m.s).	SM	96		
C	Ditto to edges of wall, junctions as skirting to walls	SM	48		
	Wall Finishes				
D	18mm Cement and sand backing (1:4) mix to receive cold room panels (m.s)	SM	288		
E	18mm Cement and sand backing (1:4) mix to suspended ceiling, smooth trowelled to receive cold room panels (m.s)	SM	96		
	External Finishes				
F	25mm thick cement and sand (1:3) render to plinth surfaces	SM	22		
G	18mm thick to external wall surfaces to recieve silicone exterior weather paint, applied as per manufacturers printed instructions and to Project Manager's approval.	SM	48		
H	Prepare and apply an undercoat and three finishing coat silicone exterior weather paint on rendered surcafes	SM	288		
J	Ditto to fascia, not exceeding 300mm girth	LM	96		
	Total Carried to Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	NEW COLD ROOM SUMMARY				
1	ELEMENT NO. 1 - SUBSTRUCTURES				
2	ELEMENT NO. 2 SUPERSTRUCTURE				
3	ELEMENT NO. 3 ROOF STRUCTURE				
4	ELEMENT NO. 4 FINISHES				
	Total Carried to Builder's Work Summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	EXTERNAL WORKS				
	Demolitions and alteration works				
	SEWERLINE				
A	Care fully demolish existing 150mm thick ground slab, to allow for trench excavation to receive 160mm diameter Pipe load and cart away all debris.	SM	14		
B	Excavate trench 750x750x1000mm to remove A252 brc mesh together with 500mm hardcore filling 0.40m deep	LM	95		
C	ditto to reduce level 1.0m deep.	LM	95		
D	Allow for plunking & strutting to sides of excavations	ITEM	1		
E	Allow for keeping all excavations free from general	ITEM	1		
	PIPE LAYING.				
F	Provide lay and joint 160mm diameter uPVC pipe class 41 to B.S 4660 on compacted murram bedding as per compacted murram bedding as per detailed drawing.	LM	95		
G	Provide lay and joint 200mm diameter uPVC pipe class 41 to B.S 4660 on compacted murram bedding as per compacted murram bedding as per detailed drawing.	LM	95		
H	Provide and compact 100mm approved quarrry dust or sand bedding for uPVC pipes.	SM	57		
J	Provide and place 150mm thick concrete surround around pipes across the road, (mix 1:3:6) to detail (50)5310, including all the necessary formwork	LM	95		
	MANHOLES				
K	Provide materials and erect manhole maximum depth 0.6m comprising 930 x 730 x 150mm thick 1:3:6 concrete bed,140 mm thick masonry walling,1:3:6 concrete benching 150mm ave. thickness,100mm thick 1:2:4 concrete cover slab, 1:4 cement / sand plaster,medium duty manhole cover and frame.Include all necessary formwork, excavation, cart away,return fill and ram, All to manhole type A	NO	4		
	Total Carried To Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
A	Provide materials and erect manhole maximum depth 0.6m comprising 1180 x 930 x 150mm thick 1:3:6 concrete bed,140 mm thick masonry walling,1:3:6 concrete benching 150mm ave. thickness,100mm thick 1:2:4 concrete cover slab, 1:4 cement / sand plaster,medium duty manhole cover and frame.Include all necessary formwork, excavation, cart away,return fill and ram, All to manhole type B	NO	5		
B	Provide materials and erect manhole maximum depth 0.6m comprising 1380 x 1180 x 150mm thick 1:3:6 concrete bed,140 mm thick masonry walling,1:3:6 concrete benching 150mm ave. thickness,100mm thick 1:2:4 concrete cover slab, 1:4 cement / sand plaster,medium duty manhole cover and frame.Include all necessary formwork, excavation, cart away,return fill and ram, All to manhole type C	NO	6		
	Testing and Commissioning				
C	Allow a Provisional Sum for testing of the whole foul drainage system in the presence of the Engineer/Project Manager and make good any defects, retest as necessary and leave the whole foul drainage system perfect and to the satisfaction of the Engineer/Project Manager.	SUM	1		
D	Allow for the connection of the new external drainage system to the bio diegester	SUM	1		
	Total Carried To Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	SEA WALL				
A	Demolish the existing 200mm thick concrete stepped block wall sloping at 1:2, average height 2.5m each.	SM	50		
B	demolish existing 300mm stone pitch layer behind the sloping seawall block wall	SM	50		
C	Remove and Cart away the filter cloth Provided and placed behind stone-pitch layer , held in position at the top and bottom by 50mm dia. mangrove poles.	SM	50		
D	Excavate,Remove and deposite in heaps to be re-use the Provided and consolidated sand fill in layers of 300mm behind the seawall	CM	5		
	WASTE WATER TREATMENT PLANT-BIODIGESTER				
	Supply, deliver, install, test and commission the following sewer treatment appliances complete with all the accessories including all connections to incoming drainage pipes, waste, jointing, supports and all plugging and screwing to walls and floors. Working drawings to be approved before commencement of the works. (A brief proposal shall however be submitted with the tender to assist in tender evaluation).				
E	Supply, deliver to site, fix, test and commission a packaged sewage treatment plants complete with film media, air blowers, vent pipes, interconnecting pipes, sanitee, control panel electrical items and accessories.The plant shall have a capacity of 40,000 litres per day. The plant to be complete with chrorination/disinfection section of the plant to make the effluent water safe for discharge. All the components of the plant shall be made from corrosion ressitant material. The system shall be underground with minimal parts being above ground and easy to maintain. The system shall be as Bio-microbic Highstrength Fast Waste Water Treatment Systems Model HighStrengthFAST® 9.0 or equal and approved.	NO.	4		
	Total Carried To Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	WASTE WATER TREATMENT PLANT-BIODIGESTER CONT.				
A	Pre-aeration air blower in the conservancy tank to help in concentration reduction in the tank during maintenance. The blower shall be as Bio-microbic Lixor Model Lixor 4.0 or equal and approved.	NO.	4		
B	Allow for getting approvals from NEMA, Water Authorities and Local Council Authority for the plant.	NO.	4		
C	Allow for detailed design and working drawings of the packaged treatment plant and associated civil works.	NO	4		
D	Allow for electrical wiring and control cabling for the treatment plant.	ITEM	4		
E	100mm diameter heavy gauge grey drainage pipes.	LM	80		
F	Allow for carrying out monthly effluent quality monitoring and maintenance of the plant for twelve months commencing from the date of practical completion.	ITEM	4		
G	Allow for preparation of the "As installed drawings", operation and maintenance manual of the plant after practical completion.	ITEM	1		
H	Allow for testing and commissioning of the sewage treatment plant installation to the satisfaction of the Engineer.	ITEM	1		
J	**Reconstruction of Sea Wall.** Construct a 200mm thick concrete stepped block wall sloping at 1:2, average height 1.5m each. (rate to include cost of making concrete blocks to class A1 and pointing of wall joints)	SM	50		
K	Provide weep-holes on the wall using 100mm diameter UPV pipes	NO.	45		
L	Construct a 300mm stone pitch layer behind the sloping seawall block wall	SM	50		
M	Provide and place behind stone-pitch layer approved filter cloth TS1000 or equivalent, held in position at the top and bottom by 50mm dia. mangrove poles. (rate to include cost of stitching -overlaps to be 300mm)	SM	80		
	Total Carried To Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
A	Provide and consolidate in layers of 300mm sand fill behind the seawall and other areas as directed by the Engineer	CM	7500		
B	Provide and consolidate in layers of 300mm rock fill behind the seawall and other areas as directed by the Engineer	CM	150		
C	Allow a provisional sum of Kshs.3,000,000,000 for any increment in Civil works to be expended in whole or part at the descretion of the Project Civil Engineer.	SUM			
D	**STATIONERY** Supply White A4 Photocopying Paper (80 gsm) reams	No.	10		
E	Supply A3 white Photocopying paper	No.	4		
F	Supply Box Files	No.	4		
G	Supply staple pins Boxes	No,	2		
H	Supply Paper Clips Boxes	No.	2		
J	External hard disk Transcend 2TB USB 3.1 Portable External Hard Drive 25M3 StoreJet	No.	5		
K	Lenovo Legion 5 15IAH7, Intel Core i7 12700H, 16GB DDR5 4800, 1TB SSD	No.	2		
	Total Carried To Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	SEWERLINE				
	COLLECTION				
1	Brought Forward from page……..1				
2	Brought Forward from page……..2				
3	Brought Forward from page……..3				
4	Brought Forward from page……..4				
5	Brought Forward from page……..5				
	Total Carried To Builder's Work Summary				

ITEM	DESCRIPTION	PAGE	AMOUNT
	BUILDER'S WORK SUMMARY		
1	CANNING LOIN AREA		
2	CHANGING ROOMS		
3	COOK, THAW,COOL, CUT AND LOBBY AREA		
4	CANNARY CLADDING		
5	FRESH AND FROZEN AREA		
6	COLD ROOM AND BOILER ROOM		
7	NEW CANOPY		
8	GATE		
9	GENERATOR HOUSE		
10	WASTE WATER TANKS		
11	FISH MEAL BUILDING		
12	ICE PLANT SUPPORT SLAB		
13	NEW COLD ROOM		
14	CIVIL WORKS		
	TOTAL BUILDER'S WORK CARRIED TO GRAND SUMMARY		

REPUBLIC OF KENYA

MINISTRY OF MINING, BLUE ECONOMY AND MARITIME AFFAIRS

STATE DEPARTMENT FOR BLUE ECONOMY AND FISHERIES

PROPOSED COMPLETION OF FRESH & FROZEN FISH PROCESSING SECTION AT LIWATONI COMPLEX, MOMBASA COUNTY

W.P ITEM NO: D116 CO/MSA/1802 JOB NO. 10464C

TENDER SPECIFICATIONS AND BILLS OF QUANTITIES FOR ELECTRICAL, GENERATOR AND ICT SYSTEM INSTALLATION WORKS

VOLUME 2

MARCH, 2024

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DEFINITIONS

The following terms and expressions used in the contract document shall have the following meanings:

The Employer	The Principal Secretary Ministry of Agriculture, Livestock & Fisheries State Department for Blue Economy and Fisheries, P.O. Box 58187-00200, NAIROBI
Project Manager	The Works Secretary State Department for Public Works P.O. Box 30743 – 00100 Nairobi
Architect	Chief Architect State Department for Public Works P. O. Box 30743 – 00100 Nairobi
Electrical Engineer	Chief Engineer (Electrical) State Department for Public Works P. O. Box 41191 – 00100 Nairobi
Mechanical Engineer	Chief Engineer (Mechanical [Bs]) State Department for Public Works P. O. Box 41191 – 00100 Nairobi
Quantity Surveyor	Chief Quantity Surveyor State Department for Public Works P. O. Box 30743 – 00100 Nairobi
Structural Engineer	Chief Engineer (Structural) State Department for Public Works P. O. Box 30743 – 00100 Nairobi
Contractor	The firm appointed to carry out Builders Works.
Sub-contractor	The firm appointed to carry out Electrical & ICT Installation Works
The Site	The Site is Located **at Liwatoni, Mombasa**

SECTION A

INSTRUCTIONS TO TENDERERS

PRELIMINARY & TECHNICAL EVALUATION CRITERIA

CONTENTS

DESCRIPTION

Contents ……EIW/A-1

Tender Evaluation Criteria ……EIW/A-2 – EIW/A-6

Note.
This criterion shall be used to evaluate the bidders proposed to carry out the specialized works who shall be domestic subcontractors to the main bidder on award of the contract.

TENDER EVALUATION CRITERIA

After tender opening, the tenders will be evaluated in **2 stages**, namely:

1. Preliminary Evaluation;
2. Technical Evaluation;

Note: This criterion shall be used to evaluate electrical works sub contracts

STAGE 1: PRELIMINARY EVALUATION

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

These conditions shall include the following:

S/No	PRELIMINARY EVALUATION CRITERIA / MANDATORY REQUIREMENTS
MR1	Valid Copy of Company Certificate of incorporation/registration;
MR2	Valid Tax Compliance Certificate;
MR3	Submission of valid CR12 form showing the list of directors or shareholding (issued within the last 12 months) or National Identity Card(s) for Sole Proprietorship
MR4	Valid copy of NCA Registration Certificate in Electrical installation works; **NCA 2 and above**
MR5	Valid copy of NCA Registration Certificate in both CCTV, Access Control and Structured cabling works (Telecommunication) installation works; **NCA 2 and above**
MR6	Valid Current Annual NCA contractor's Practicing license for works listed in MR4 and MR5 above.
MR7	Current Class of License with Energy and Petroleum Regulatory Authority (**EPRA Class A1**)
MR8	Copy of valid Registration license from Communication Authority of Kenya (CA)
MR9	Copy of valid Compliance Certificate from Communication Authority of Kenya;
MR10	**Manufacturer's Authorization Letters** in the format provided, for ALL the following items:- **Automatic voltage stabilizer (AVS), automatic PFC bank (APFCB), Diesel Generator,** ***CCTV cameras, Network Video Recorder, Access control readers, Active equipment, UPSs, cabling and network cabinets*** being
MR11	Attach **Technical brochures** for ALL the following items:- **AVS, APFC, Diesel Generator,** ***Light fittings, Switches and socket fittings, power cables, Isolators, Industrial plugs, Fire alarm system, Cable trunking, CCTV cameras, Network Video Recorder, Access readers, Active equipment, UPSs, cabling and network cabinets*** being offered by the bidder.
MR12	Dully filled, signed and stamped statement of compliance

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.

STAGE 2: TECHNICAL EVALUATION

The Sub-contractor shall be evaluated as follows;

a) Assessment for Eligibility

b) Compliance with Technical Specifications

A) ASSESSMENT FOR ELIGIBILITY

PARAMETERS

(i) Key personnel

(ii) Contract Completed in the last Five (5) years

(iii) Schedules of on-going projects

(iv) Schedules of Contractor's equipment

(v) Litigation History

TABLE 1: Assessment for Eligibility

Item	Description	Compliance √ or X
1.	**Key Personnel (Attach evidence)**	
	Director of the firm ☐ Holder of degree/ diploma in relevant field	
	At least 1No. degree/diploma holder of key personnel in relevant field ☐ Has at least a minimum of 10 years of relevant experience	
	At least 1No certificate holder of key personnel in relevant field ☐ Has at least a minimum of 5 years of relevant experience	
	At least 2No Artisans with trade test certificate in relevant field ☐ Artisans with at least a minimum of 5 years of relevant experience	
2.	**Contracts completed in the last five (5) years (Max of 3No. Projects) - <u>Provide Evidence I.e. Award of Contracts and/or Completion Certificates</u>** ☐ Projects of similar nature, complexity or magnitude	
3.	**On-going projects – <u>Provide Evidence I.e. Award of Contracts</u>** ☐ Three and below Projects of similar, nature complexity and magnitude	
4.	**Schedule of contractors equipment and transport (proof or evidence of ownership/Lease)**	
	a) Relevant Transport (at least 2No.) ☐ Means of transport	
	b) Relevant Equipment (at least 6No.) The Equipment includes but not limited to the following; 1. Motor and Phase Rotation Indicator 2. Digital Earth Loop Tester 3. Insulation Continuity Tester 4. Digital Earth Resistance Tester 5. Multimeter and Clamp Meter 6. Crimping tool 7. Fluke testers, 8. Splicing kit, ☐ Has relevant equipment for works being tendered	
5.	**Litigation History** ☐ Duly Filled	
	COMPLIANCE STATUS	

A) 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.

Tender Evaluation Committee to evaluate compliance to all technical specifications (Electrical, Data & Voice Installation Works) as detailed in the Section D (Particular specs) of this document.

The following table shall be used to determine the bidder's responsiveness to the technical specifications.

TABLE 2: Compliance to Technical Specifications

ITEM	DESCRIPTION (as described in particular specification)	TYPR/MAKE	COUNTRY OF ORIGIN	Complaint/ Non-Complaint (√ or X)
1.0	Automatic voltage stabilizer (AVS)			
2.0	Automatic power factor correction capacitor bank (APFCB)			
3.0	Diesel Generator			
4.0	Lighting Fittings			
5.0	Switches and Sockets			
6.0	Fire Alarm System (Addressable Type) i) Control Panel ii) Heat Detector iii) Smoke Detector iv) Manual Call Point v) Fire Beacon Light			
7.0	Cables i) Armoured Cables ii) Single Core PVC Insulated Cables iii) Fire Resistant Cables			
8.0	Distribution Board and MCBs/MCCBs			
9.0	Cable tray			
10.0	Cable trunking			
11.0	Network Switch			
12.0	Uninterruptible Power Supply (UPS)			
13.0	Cat 6A Cables			
14.0	Network Cabinets			
15.0	Fibre Optic Cable			
16.0	Data outlet plates			
17.0	CCTV Cameras			
18.0	Network Video Recorder			
19.0	Display screen			
20.0	Access Door Controller			
21.0	Access Control Card Readers			
	COMPLIANCE STATUS			

Bidders to attach Technical Brochures/Catalogues for each proposed item.

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.

SECTION B

GENERAL SPECIFICATIONS

OF

MATERIALS AND WORKS

PART 1. GENERAL SPECIFICATIONS OF WORKS

1.1 General

1.2 Standard of Materials

1.3 Workmanship

1.4 Procurement of Materials

1.5 Shop Drawings

1.6 Record Drawings

1.7 Regulations and Standards

1.8 Setting out Works

PART 2. GENERAL SPECIFICATIONS OF ELECTRICAL WORKS

2.1 Position of Electrical Plant and Apparatus

2.2 M.C.B Distribution Panels and Consumer Units

2.3 Fused Switchgear and Isolators

2.4 Conduits and Conduit Runs

2.5 Conduit Boxes and Accessories

2.6 Labels

2.7 Earthing

2.8 Cables and Flexible Cords

2.9 Armoured PVC Insulated and Sheathed Cables

2.10 Cable Supports; Markers and Tiles

2.11 PVC Insulated Cables

2.12 Heat Resisting Cables

2.13 Flexible Cords

2.14 Cable Ends and phase Colours

2.15 Cable Insulation Colours

2.16 Sub-circuit Wiring

2.17 Space Factor

2.18 Insulation

2.19 Lighting Switches

2.20 Sockets and Switched sockets

2.21 Fused Spur Boxes

2.22 Cooker Outlets

2.23 Connectors

2.24 Lamp holders

2.25 LED Lamps

2.26 lighting Fittings Street lighting Lanterns

2.27 Position of Points and Switches

2.28 Street/Security Lighting Columns

2.29 Timing Control Switch

2.30 Wiring System for Street Lighting

2.31 Metal control Pillar

2.32 Current Operated Earth leakage circuit breaker

2.33 MV Switchboard

2.34 Steel Conduits and Steel Trunking

2.35 Testing on Site

PART 1. GENERAL SPECIFICATIONS OF WORKS

1.1 GENERAL

This specification is to be read in conjunction with the drawings which are issued with it. Bills of quantities shall be the basis of all additions and omissions during the progress of the works.

1.2 STANDARD OF MATERIALS

Where the material and equipment are specifically described and named in the Specification followed by approved equal, they are so named or described for the purpose of establishing a standard to which the sub-contractor shall adhere.

Should the Sub-contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the Sub-contractor to remove the material in question immediately. The fact that this material has been installed shall have no bearing or influence on the decision by the Engineer.

All materials condemned by the Engineer as not approved for use, are to be removed from the premises and suitable materials delivered and installed in their place at the expense of the Sub-contractor. All materials required for the works shall be new and the best of the respective kind and shall be of a uniform pattern.

1.3 WORKMANSHIP

The workmanship and method of installation shall conform to the best standard practice. All work shall be performed by a skilled tradesman and to the satisfaction of the Engineer. Helpers shall have qualified supervision.

Any work that does not in the opinion of the Engineer conform to the best standard practice will be removed and reinstated at the Sub-contractors expense.

Permits, Certificates or Licenses must be held by all tradesmen for the type of work; in which they are involved where such permits, certificates or licenses exist under Government legislation.

1.4 PROCUREMENT OF MATERIALS

The sub-contractor is advised that no assistance can be given in the procurement or allotment of any materials or products to be used in and necessary for the construction and completion of the work.

Sub-contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required.

1.5 SHOP DRAWINGS

Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer.

Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

1.6 RECORD DRAWINGS

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

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

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

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

1.7 REGULATIONS AND STANDARDS

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

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

1.8 SETTING OUT WORK

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

PART 2. GENERAL SPECIFICATIONS OF ELECTRICAL WORKS

2.1 POSITIONS OF ELECTRICAL PLANT AND APPARATUS

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

2.2 MCB DISTRIBUTION PANELS AND CONSUMER UNITS

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

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

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

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

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

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

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

2.3 FUSED SWITCHGEAR AND ISOLATORS

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

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

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

Isolators shall be load breaking/fault making isolators.

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

2.4 CONDUITS AND CONDUIT RUNS

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

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

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

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

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

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

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

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

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

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

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

2.5 CONDUIT BOXES AND ACCESSORIES

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

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

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

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

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

2.6 LABELS

Labels fitted to switches and fuse boards; -

(i) Shall be Ivorine engraved black on white.

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

(iii) Shall be indicated on switches: -

- **a)** Reference number of switches
- **b)** Special current rating
- **c)** Item of equipment controlled

(iv) Shall indicate on MCB panels

- **d)** Reference number
- **e)** Type of board, i.e;, lighting, sockets, etc,.
- **f)** Size of cable supplying panel
- **g)** where to isolate feeder cable

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

2.7 EARTHING

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

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

(ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross-sectional area Copper tape shall be provided and all equipment including the

lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.

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

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

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

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

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

(viii) Earth plates will not be permitted

(ix) Where an earth rod is used the earth resistance shall be tested in the manner described in the current edition of the IEE Regulations, by the Sub-Contractor in the presence of the Engineer and the Sub-Contractor shall be responsible for the supply of all test equipment.

(x) Where copper tape is fixed to the building structure it shall be by means of purpose made non-ferrous saddles which space the conductor away from the structure a minimum distance of 20mm. Fixings, shall be made using purpose made plugs; No fixings requiring holes to be drilled through the tape will be accepted.

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

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

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

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

2.8 CABLES AND FLEXIBLE CORDS

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

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

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

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

2.9 ARMOURED P.V.C. INSULATED AND SHEATHED CABLES:

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

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

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

2.10 CABLE SUPPORTS, MARKERS AND TILES

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

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

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

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

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

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

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

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

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

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

2.11 PVC INSULATED CABLES

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

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

2.12 HEAT RESISTING CABLES

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

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

2.13 FLEXIBLE CORDS

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

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

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

2.14 CABLE ENDS AND PHASE COLOURS

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

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

2.15 CABLE INSULATION COLOURS

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

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

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

2.16 SUB-CIRCUIT WIRING

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

Lighting circuits P.V.C. cable.

(i) 1.5mm² for all lighting circuits indicated on the drawing.

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

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

(ii) 2.5mm² for one 15Amp socket.

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

The wiring sizes for lighting circuits and sockets are shown on the drawings. In such cases, the sizes shown on the drawings shall prevail over the sizes specified.

Wiring sizes for other appliances shall be shown on the drawing or specified in later clauses of this specification.

2.17 SPACE FACTOR

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

2.18 INSULATION

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

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

2.19 LIGHTING SWITCHES

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

2.20 SOCKETS AND SWITCHED SOCKETS

These shall be flush pattern in steel/pvc box and shall be of the gangs and type specified in the drawings.

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

2.21 FUSED SPUR BOXES

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

2.22 COOKER OUTLETS

These shall be flush mounted with 13-A switched socket outlet and neon indicator Lamps.

The cooker control units shall be as manufactured by "M.K. Electrical Company Ltd", or other approved equal KS 04 – 247: 1988

2.23 CONNECTORS

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

2.24 LAMPHOLDERS

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

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

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

2.25 LAMPS

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

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

LED lamps shall be used in all fittings unless otherwise specified. The minimum luminous flux allowed is 95 lumens per Watt, minimum life time of 50,000hrs, minimum power factor of 0.9, voltage range of 100-240V, THD <15% amongst others.

2.26 LIGHTING FITTINGS AND STREET LIGHTING LANTERNS

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

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

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

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

Minimum size of internal wiring shall be 20/0.20mm (23/0067). Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings. It is to be noted that some fittings are suspended as shown on the drawings.

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

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

2.27 POSITIONS OF POINTS AND SWITCHES

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

The Sub-contractor must consult with the Engineer in liaison with the Clerk of Works, or the General Foreman on site regarding the positions of all points before fixing any conduit etc. The Sub-Contractor shall be responsible for all alterations made necessary by the non-compliance with the clause.

2.28 CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

Current operated earth leakage circuit breaker shall conform to B.S.S. 4293:68 rated at 240 volts D.P. 50 cycles A.C. Mains.

The breaker shall be provided with test switch and fitted in weather proof enclosure for surface mounting. The rated load current and earth fault operating current shall be as specified in the drawings. These shall be as manufactured by Crabtree, Siemens or other equal and approved.
When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

2.29 STEEL CONDUITS AND STEEL TRUNKING

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

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

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

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

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

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

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

Where vertical sections of trunking are used which exceed 4.5m in length, staggered tie off points shall be provided at 4.5m intervals to support the weight of cables.

Unless otherwise stated, all trunking systems shall be painted as for conduit.

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

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

Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects.

Oil and any other insulating substance shall be removed from the screw threads; where conduits terminate in fuse-gear, distribution boards, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enameled tubing and galvanizing paint for galvanised tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit.

The inner radius of the bed shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in-box. Where straight runs of conduit are installed, draw-in-boxes shall be provided at distances not exceeding 15mm. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

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

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

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

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

All adaptable boxes and lids of the same size shall be interchangeable.
Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.

Where used in conjunction with mineral insulated copper sheathed cable, galvanized boxes shall be used and painted after erection.

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

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

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

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

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

2.30 TESTING ON SITE

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

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

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

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

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

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

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

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

(i) Where such equipment, etc., forms part of or is connected to a system whether primarily or of an electrical nature or otherwise (e.g. air conditioning system) the Sub-contractor shall attend on and assist in balancing, regulating testing and commissioning, or if primarily an electrical or other

system forming part of works, shall balance, regulate, test and commission the system to the service engineer's approval.

APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

The electrical sub-contractor shall comply with the following:-

1. Government Electrical Specifications No. 1 and No. 2.

2. All requirements of Kenya Power Company Limited, and Communications Authority of Kenya (CA).

GENERAL SPECIFICATIONS OF WORKS – ICT INSTALLATION WORKS

1. General
2. Standard of Materials
3. Workmanship
4. Procurement of Materials
5. Shop Drawings
6. Record Drawings
7. Regulations and Standards
8. Setting out Works

1. GENERAL

This specification is to be read in conjunction with the drawings which are issued with it. Bills of quantities shall be the basis of all additions and omissions during the progress of the works.

2. STANDARD OF MATERIALS

Where the material and equipment are specifically described and named in the Specification followed by approved equal, they are so named or described for the purpose of establishing a standard to which the sub-contractor shall adhere.

Should the Sub-contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the Sub-contractor to remove the material in question immediately. The fact that this material has been installed shall have no bearing or influence on the decision by the Engineer.

All materials condemned by the Engineer as not approved for use, are to be removed from the premises and suitable materials delivered and installed in their place at the expense of the Sub-contractor. All materials required for the works shall be new and the best of the respective kind and shall be of a uniform pattern.

3. WORKMANSHIP

The workmanship and method of installation shall conform to the best standard practice. All work shall be performed by a skilled tradesman and to the satisfaction of the Engineer. Helpers shall have qualified supervision.

Any work that does not in the opinion of the Engineer conform to the best standard practice will be removed and reinstated at the Sub-contractors expense.

Permits, Certificates or Licenses must be held by all tradesmen for the type of work; in which they are involved where such permits, certificates or licenses exist under Government legislation.

4. PROCUREMENT OF MATERIALS

The sub-contractor is advised that no assistance can be given in the procurement or allotment of any materials or products to be used in and necessary for the construction and completion of the work.

Sub-contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required.

5. SHOP DRAWINGS

Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer.

Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

6. RECORD DRAWINGS

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

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

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

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

7. REGULATIONS AND STANDARDS

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

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

8. SETTING OUT WORK

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

SECTION C

SCHEDULE OF CONTRACT DRAWINGS

SCHEDULE OF CONTRACT DRAWINGS

1.0 There are currently no drawings in this contract.

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

SECTION D

PARTICULAR & TECHNICAL SPECIFICATIONS

OF MATERIALS AND WORKS

PART 1

PARTICULAR SPECIFICATIONS OF MATERIALS AND WORKS

1.0 SITE LOCATION

The location of the proposed works is at **Liwatoni– Mombasa County**

2.0 SCOPE OF WORKS

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

- Careful removal of some existing electrical items/equipment, fittings & accessories and handing over to client for safe keeping
- Wiring and Installation of electrical fittings and accessories
- Installation of LV Switchboards and control switchgear
- Installation of power distribution board, cables and control switchgear
- Installation of fire detection & alarm system
- Diesel generating set
- Automatic power factor correction capacitor bank
- Automatic voltage stabilizer
- Cable trunking, trays and conduiting works
- LAN and data cabling terminations
- Optical fiber and terminations
- Data/voice outlets
- Equipment racks and cabinets
- UPS and backup batteries
- CCTV system installation works
- Access control system installation works

3.0 MATERIALS FOR THE WORKS

ALL Electrical items/fittings MUST be HACCP Compliant, NSF Food Grade i.e compliant to food safety standards (NSF) and rated for SALINE ENVIRONMENT /made from corrossion resistant materials.

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

4.0 BROCHURES FOR ALL ELECTRICAL EQUIPMENT AND FITTINGS

For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer's brochures detailing technical literature and specifications of all the required telecommunication equipment where applicable.

PART 2

TECHNICAL SPECIFICATIONS OF MATERIALS AND WORKS

AUTOMATIC VOLTAGE STABILIZER (2,000 KVA)

Specification	Minimum Requirement	Bidder's Specifications
Voltage stabilisation	independent phase control	
Selectable output voltage	from 210V to 255V (L-N) / from 360V to 440V (L-L)	
Frequency	50/60Hz ±5%	
Admitted load	Up to 100%	
Admitted load	100%	
Cooling	Natural ventilation (aided with fans over 45°)	
Ambient temperature	Wide AT operation from –20° C to 50° C.	
Max relative humidity	95%	
Admitted overload	200% 2 min.	
Harmonic distortion	None introduced	
Protection degree	IP21	
Instrumentation	Input & output digital multimetre	
Overvoltage protection	– Output class II surge arrestor – Soft start through supercapacitors in case of blackout	
Suitability	Suitable for all power factor loads	
Efficiency	Over 98%	
Warranty	2 (two) years Warranty workmanship and defects liability period for the entire AVS installation.	
Salient Features	Interrupting devices Over/undervoltage protection Manual bypass line Total protection kit Input isolating transformer Integrated automatic power factor correction system SPD surge arrestors EMI/RFI filters Neutral point reactors	

PART 3

1.0 TECHNICAL SPECIFICATIONS FOR LED LIGHT FITTINGS/LAMPS

3.1 LED BATTEN LIGHT FITTING TECHNICAL SPECIFICATIONS NSF P442, ETL, cETL, DLC Listing, IEC Compliant		
Item	**Minimum Specifications**	**Proposed solution**
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Operating	➢ voltage range: 130-300 V ac ➢ frequency range: 45-55 Hz ➢ Power factor ≥ 0.9 lagging ➢ THD>15% ➢ Ambient temperature range -10 to +35 °Operating ➢ Colour Consistency ≤ 5SDCM	
Performance	➢ luminous flux - 4900 lm ➢ System efficacy > 136lm/W ➢ Lamp colour temperature (NW)4000K / (CW)6500K ➢ Colour Rendering Index >80 ➢ Median useful life ≥ 30000 h ➢ Luminaire light beam spread - 120°	
Standards Compliance	CB/EMC/CE/ NSF P442, ETL, cETL, DLC Listing, IEC Compliant	
General	➢ Driver/power unit/transformer - PSU-E ➢ Optical cover/lens type - Polystyrene bowl/cover prismatic ➢ Protection class IEC - Safety class II (II)	

3.2 LED PANEL LIGHT FITTING TECHNICAL SPECIFICATIONS IEC Compliant		
Item	**Minimum Specifications**	**Proposed solution**
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Operating	➢ voltage range: 130-300 V ac ➢ frequency range: 45-55 Hz ➢ Power factor ≥ 0.9 lagging ➢ THD>15% ➢ Ambient temperature range -10 to +35 °Operating ➢ Colour Consistency ≤ 5SDCM	
Performance	➢ luminous flux - 4450 lm ➢ System efficacy > 127lm/W ➢ Lamp colour temperature (NW)4000K / (CW)6500K ➢ Colour Rendering Index >80 ➢ Median useful life ≥ 30000 h ➢ Luminaire light beam spread - 120°	
Standards Compliance	CB/EMC/CE, NSF P442, ETL, cETL, DLC Listing, IEC Compliant	
General	➢ Driver/power unit/transformer - PSU-E ➢ Optical cover/lens type - Polystyrene bowl/cover prismatic ➢ Protection class IEC - Safety class II (II)	

3.3 LED CIRCULAR LUMINAIRE		
TECHNICAL SPECIFICATIONS NSF P442, ETL, cETL, DLC Listing, IEC Compliant		
Item	**Minimum Specifications**	**Proposed solution**
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Operating	➢ voltage range: 130-300 V ac ➢ frequency range: 45-55 Hz ➢ Power factor ≥ 0.9 lagging ➢ THD>15% ➢ Ambient temperature range -10 to +35 °Operating ➢ Colour Consistency ≤ 5SDCM	
Performance	➢ luminous flux - 4900 lm ➢ System efficacy > 136lm/W ➢ Lamp colour temperature (NW)4000K / (CW)6500K ➢ Colour Rendering Index >80 ➢ Median useful life ≥ 30000 h ➢ Luminaire light beam spread - 120°	
Standards Compliance	CB/EMC/CE/NSF P442, ETL, cETL, DLC Listing, IEC Compliant	
General	➢ Driver/power unit/transformer - PSU-E ➢ Optical cover/lens type - Polystyrene bowl/cover prismatic ➢ Protection class IEC - Safety class II (II)	

2.00 TECHNICAL SPECIFICATIONS FOR STRUCTURED CABLING & IP CCTV SURVEILLANCE SYSTEM

2.01 EXTENT OF WORKS FOR SECURITY SURVEILLANCE SYSTEM

The security surveillance system should consider the following.

IP CCTV Camera. The cameras specified should be able to cover the distance with clear pictures. Consider whether there shall be need to support the fixed digital cameras with the Pan, Tilt and Zoom Cameras or not. Highly sensitive areas should be covered with more cameras able to take pictures of any person coming in both from the front and the rear. The resolution of the cameras should be able to give motion pictures that are clear.

LED Monitors. The color monitors must be of high resolution and preferably of plasma screen. The size of the monitor should be big enough to allow the operators make correct deductions both in real time operation and during playbacks.

IP Network Video Recording. The recording multiplexer resolution has to be equally high for the monitor to display with a high resolution.

The IP CCTV Surveillance system should be able to support the following;

- IP based recording system with motion detection.
- Digital zooming into recorded images/ life view
- Multi-level password protection and logging facilities
- Integrates with access control, burglar control, burglar alarms and Fire alarm system and other building management systems as may be specified by the engineer.
- Image compression for remote web live and playback viewing in case of IP.
- Multi display monitors
- Automatic daily archiving to hard drive or optical drive.
- Fully adjustable digital video motion detection with exclusion /inclusion multi regions per camera.
- Efficient video collection, storage and retrieval.
- Advanced and instant search capability
- Digitally signed recordings, with audit trails of all operator actions and system event.
- Storage capacity of the Network Video Recorder. Space to provide at least three months continuous recording and back up for automatic archiving for one year and redundancy
- Infra-red illuminators in poor lighting conditions
- Able to interface with other systems on the ground
- Support IP and PoE connectivity.

2.02 WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations for all IP cameras, cable routing and terminations, telecommunication outlets/ connectors, location of NVR, monitors and Edge switches.

2.03 MINIMUM REQUIREMENTS FOR THE PROPOSED IP CCTV SYSTEM

The cameras shall have the following minimum specifications but cameras with higher specifications shall be accepted:

a) IP Dome CCTV Camera

- **Housing constructed from high grade corrosion resistant, marine-grade 316L stainless steel.**
- 4 Mega Pixel Full HD IP Dome Camera with Infrared
- Built in Infrared 30 meters minimum
- imaging sensor with Wide Dynamic Range
- Motorized Varifocal Auto Iris lens (3-11mm)
- Minimum illumination 0.01lux (colour)
- IP network capable
- PoE capability
- H.265+ video compression
- 3D Noise reduction
- Accessible edge storage with internal MicroSD card slot
- Local Storage
- True day and night vision capability
- I/O - 1 Alarm in / 1 Alarm out
- 2 Way Audio
- Tampering detection, Face detection, Audio Detection, Motion detection & Privacy Masking and event triggered alarm processing
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating
- ONVIF Compliant

(State make and type and enclose brochures/ catalogues)

b) IP Bullet CCTV Camera

- Housing constructed from high grade corrosion resistant, marine-grade 316L stainless steel.
- 4 Mega Pixel Full HD IP Bullet Camera with Infrared
- Built in Infrared 30 meters minimum
- imaging sensor with Wide Dynamic Range
- Motorized Varifocal Auto Iris lens (3-11mm)
- Minimum illumination 0.01lux (colour)
- IP network capable
- PoE capability
- H.265+ video compression
- 3D Noise reduction
- Accessible edge storage with internal MicroSD card slot
- Local Storage
- True day and night vision capability
- I/O - 1 Alarm in / 1 Alarm out
- 2 Way Audio
- Tampering detection, Face detection, Audio Detection, Motion detection & Privacy Masking and event triggered alarm processing
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating
- ONVIF Compliant

e) IP PTZ CCTV Camera

- **Housing constructed from high grade corrosion resistant, marine-grade 316L stainless steel.**
- 5 Mega Pixel Full HD IP Dome Camera with Infrared
- Built in Infrared 100 meters minimum
- imaging sensor with Wide Dynamic Range
- Varifocal Auto Iris lens
- Minimum Adjustable zoom 16
- Minimum illumination 0.01lux (colour)
- IP network capable
- PoE capability
- H.265+ video compression
- 20X Optical zoom
- Accessible edge storage with internal Micro SD/SDHC/SDXC card slot
- Endless 360 degree pan rotation
- 180 Degree continuous tilt with auto flip
- 256 preset positions
- I/O - 1 Alarm in / 1 Alarm out
- True day and night vision capability
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating
- ONVIF Compliant

(State make and type, and enclose brochures/catalogues)

e) IP Discreet (Spy) Mini Dome Camera

2 Mega Pixel (1920 x 1080) resolution network outdoor Dome Camera with Infrared
Discreet, smoke-detector like design with uncovered lens
Aluminum and polycarbonate / ABS casing, Encapsulated electronics, Captive screws (resistorx 10) PVC free
30fps@2MP (H.265 / H.264)
Built in Infrared 40 meters minimum
Minimum illumination 0.06Lux (Color), 0Lux (B/W : IR LED on)
H.265+, H.264, MJPEG codec supported, Multiple streaming
True day and night vision capability, WDR (120dB) Simple focus, P-Iris
Audio Communication Bi-directional (2-way)
Motion detection, Directional detection, Fog detection, Defocus detection, Audio detection, Digital auto tracking, Sound classification, Tampering, Heat map, People counting, Queue management, Face detection
73º horizontal field of view
Accessible edge storage with internal Micro SD/SDHC/SDXC card slot
Endless 360 degree pan rotation
180 Degree continuous tilt with auto flip
I/O - 1 Alarm in / 1 Alarm out
Vandal proof IK-10 rating housing
Weather proof IP66 rating

(State make and type, and enclose brochures/catalogues)

2.04 MOUNTING BRACKETS

The Brackets shall:

Be suitable for wall or ceiling mounting of a single camera.
Be at least 5.5"length
Have an auto lock facility

2.05 CAMERA HOUSING

The camera housing shall:
Be IP66 rated with integral cable management.
Be Weatherproof and constructed from aluminium with epoxy coating.

2.21 LED DISPLAY SCREEN

DESCRIPTION	MINIMUM SPECIFICATIONS
Display	➢ **Technology -** LED ➢ **Display Type** – UHD ➢ **Screen Size - 65**" ➢ **Resolution** – 4K or higher ➢ **Contrast Ratio -** 5000:1 ➢ **Aspect Ratio -** 16:9 4:3
Video (Picture Quality)	➢ **HDR -** 4K Active HDR ➢ **Dynamic Tone Mapping -** HDR Dynamic Tone Mapping ➢ **Upscaler -** 4K Upscaler ➢ **Noise Reduction -** NR ➢ **HEVC (Video Decoder) -** 4K@60P, 10bit ➢ **VP9 (Video Decoder) -** 4K@60P, 10bit ➢ **Picture Mode -** Yes 9 modes (Vivid, Standard, Eco, Cinema, Sports, Game, HDR Effect, (ISF) Expert (Bright Room), (ISF) Expert (Dark Room))
Audio	➢ Two built in stereo speakers
Built In Audio Decoders	➢ BBE Digital, Virtual Dolby Surround Sound
Digital Comb Filter:	➢ With Digital comb filter
Digital cable:	➢ Digital Cable Ready
Progressive Scan	➢ With Progressive Scan
Supported HD Broadcast	➢ 720 P, 576 P, 1080i, 480 P,576i
Formats	➢ PAL, SECAM, NTSC
DTV Capability	➢ Ready
Picture-in-Picture (PIP):	➢ With (PIP)
Inputs supported:	➢ Component, Composite Video, VGA, DVI, HDMI (3), USB, Stereo Audio
Outputs Supported:	➢ Component, VGA, DVI, HDMI, Stereo Audio
Physical Characteristic	➢ Wall mountable

2.07 NETWORK VIDEO RECORDER

The network video recorder shall have the following minimum requirements:

- 32 Channels
- Recording speeds of at least 256Mbps for 32channel
- Gigabit Ethernet connection
- Multi-screen Display: Full/4/9/16 way or as appropriate.
- 3 Hot swap HDDs (RAID 5) at 8TB each
- external storage support capability
- VGA/HDMI local monitor
- Redundant hot swap power supply
- Network management/viewer software
- In built intelligent video analysis H.265+
- Compression
- ONVIF compatibility
- Web viewer supported
- PoE+ capability
- Storage capacity : continuous storage for at least six (6) months and back up storage for at least one year
- Smart Video Search Feature for streamlined Investigations
- Recording resolution of 5MP minimum
- IP address filtering, user access log, authentication and encryption
- Auto Launch of Video on specified Alarms/Events
- LED status indicator
- CE, UL certification

(State make and type, and enclose catalogues)

2.08 CCTV MANAGEMENT SOFTWARE

CCTV management software with the following minimum specifications:-

- Event Recording Scheme
- Operate Motion-Detector-Recording
- NTSC-PAL video recording.
- Be capable of recording real time images at full resolution and frames
- rate. Features for connection for alarm system Automatic Recycling
- Input, Output, Audio Alert Facilities
- Remote Viewing Facilities, TCP/IP, INTERNET, ISDN, modem
- Capability of streaming into client's existing LAN/ WAN infrastructure
- Ability to quickly search through thousands of hours of recorded video information
- Event-triggered video recording to reduce storage requirements
- Masks out disturbing areas, or areas of no interest, within the specified region
- Identifies & immediately alerts user to potential security breaches
- Features should be able to be used at very low frame rates
- Easy calibration for specific applications
- Color-matching matches user-specified colour to the video image
- Functions in outside environments with changing light
- conditions: Auto-learning of background feature
- Object saliency and object Consistency mechanisms to filter out phantom objects
- "Out of focus" condition is user-calibrated by level of Focus
- Automatic self-test of camera validity
- Motion Trajectory Analyzer provides advanced analysis of the motion of
- objects Seamless integration into Enterprise security knowledge management
- solution. Analysis of stationary objects

(State make and type, and enclose catalogues)

4.0 STRUCTURED CABLING

i) NETWORK CABINETS

DATA CABINET AND ACCESSORIES RACKS TECHNICAL SPECIFICATIONS		
Item	**Minimum Specifications**	**Proposed Solution**
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Product description	Rack -ventilated -(36U as per the BQ)	
Product type	Ventilated rack	
Rack sized	36"	
Dimensions	Minimum 600mm x 600mm to fit the active components	
Construction	• The front Clear Glass door, back door mesh door. • Front/rear locking double section door, enable ventilation and reliable operation. • Wire path on the top and bottom can be closed. • High grade knob and lock. • Wire groove with Wide cable manager on the two sides. • Detachable composite structure, more convenient for being shipped • Material: SPCC quality cold rolled powder coated steel • Color: (Silk Grey) • Surface finish: degrease, acid pickling, rust prevention and Parkerizing, pure water cleaning, static electricity plastic painting	
Power	• Pre-wired 240V AC conditioned grounded power circuit • 6 Outlet Power Distribution Unit Included • Supplied with Earth Bond Kit and Cage nuts	
Standards	Comply with ANSI/EIA RS-310-D, IEC297-2, DIN41494; PART1, DIN41494; PART7, GB/T3047; 2-92STANDARD	

ii) CABLES

a) HORIZONTAL CABLING

	Category 6A UTP 4-Pair Cable	Proposed Solution
Item	**Minimum specifications**	
Length	Reel in a box 305m	
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	• UTP • Nominal jacket OD: 8.5mm (0.33 in.) • 0.58mm (0.02 in.) solid (non-tinned) copper • Centre Isolation Member	
Jacket	8.5mm with Sequential meter markings	
Wire characteristics	**DC Resistance:** <8.5 O/100m **DC Resistance Unbalance:** 2% **Mutual Capacitance:** 5.6 nF/100m **Capacitance Unbalance:**<160 pF/100m **Characteristic Impedance(ohms):**1 - 250 MHz: 100 ± 15% 100 - 750 MHz: 100 ± 22% **NVP:** 67% **TCL:** 30-10 log (f/100)dB **PSANEXT:** 62.5-15log(f /100)dB **PSAACR-F:**38.2-20log(f /100)dB **Delay Skew:** = 45ns	
Industry Compliance	• ISO/IEC 11801 Ed. 2.2 (Class EA) • ISO/IEC 61156-5 (Category 6A) • TIA-568-C.2 (Category 6A) • LSOH: ISO/IEC 60332, IEC 60754, IEC 61034 • EN50399 Class Eca	
Physical Properties	**Pulling Tension (max):**110N (25 lbf) **Bend Radius (min):** 45.7mm (1.8 in.) **Installation Temperature:** 0 to 60°C (+32 to 140°F) **Storage Temperature:** -20 to 75°C (-4 to 167°F) **Operating Temperature:** -20 to 60°C (-4 to 140°F)	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (*Attach Manufacturer's Warranty Statement)* Minimum 15 Years Warranty	

b) PATCH CORDS: Category 6A double-ended, stranded modular cord 1/2/3/5 Meter

Item	Floor Distribution In Cabinet and user work-station areas	Proposed Solution
	Minimum specifications	
Length	1 & 3 meters	
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	MECHANICAL — PLUG Number of Plug Insertion Cycles: 2500 Min. Plug Retention Force: 50N (11.2 lbf) Plug Compatibility: Compatible with RJ45 Cable to Plug Tensile Strength (min.) 20 lbs.	
Jacket	Factory made	
Wire characteristics	MECHANICAL — CABLE (STRANDED) Wire Size Range (Nominal): 26 AWG 7x32 Stranded tinned copper Cable Construction: UTP dual jacketed Cable O.D. (nominal) 7.37mm (0.29 in.) outer, 6.43mm (0.25 in.) inner Wiring:T568A/B Jacket Type: CMG Bend Radius: 25mm (1.0 in.) 4-pair cables with 100-ohm impedance. Compliant to standards such as TIA/EIA – 268-B. 2-1 and IEC 61156-Made of polyethylene insulation Pulling force should support up to 50N/mm2 Low Smoke Zero Halogen outer sheath. MECHANICAL — CABLE (SOLID) Wire Size Range (Nominal): 23 AWG Solid bare copper Cable Construction: UTP Cable O.D. (nominal): 7.87mm (0.31 in.) Wiring: T568A/T568B Jacket Type: LSOH Bend Radius: 25mm (1.0 in.)	
Performance Specifications	ELECTRICAL Contact Resistance - 10 mΩ Input to Output Resistance - 200 mΩ Min. Dielectric Withstand Voltage (contact to contact) - 1000 V DC or AC peak Insulation Resistance - 500 mΩ Compatibility Backwards tCat 6 Current Rating @ 25° C - 1.5 A Power over Ethernet - Suitable for PoE Type1,2,3,4 and PoH Power over Ethernet < 10 mΩ/m @ 10 MHz MECHANICAL — GENERAL Operating Temperature - -10 to 60° C, (14 to 140° F) Flammability Rating - UL 94 V-0	

	Green Features RoHS, lead-free, halogen-free, PVC free **Plug Housing Materials -** Polycarbonate **Contact Materials -**50 microinches gold plating or equivalent **Plastic Materials -** Flame retardant thermoplastic **Screen** 360 degree enclosure **Marking -** P/N, length, performance level, QC	
Standards	**STANDARDS COMPLIANCE** • ANSI/TIA-568.2-D • ISO/IEC 11801-1 Ed 1.0 • IEEE 802.3an (10Gbase-T) • IEEE 802.3af (Type 1 PoE) • IEEE 802.3at (Type 2 PoE) • IEEE 802.3bt (Type 3 PoE) • IEEE 802.3bt (Type 4 PoE) • Power over HDBaseT (PoH) • IEC 60603-7, • IEC 60603-7-4, • UL Listed 1863 • IEC 60332-1 (LSOH), • IEC 60754 (LSOH) • IEC 61034 (LSOH), • ANSI/TIA-1096-A	
Warranty	End-to-End Manufacturer's Warranty on Cabling System(*Attach Manufacturer's Warranty Statement)* Minimum 15 Years	

c) CAT 6A UTP PATCH PANELS

Item	Minimum specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Ports	24/48 Ports	
Characteristics	Operating Temperature: -10 to 60 °C, (14 to 140 °F) Flammability Rating: UL 94 V-0 Green Features: RoHS, lead-free, halogen-free, PVC free Plastic Materials Flame retardant thermoplastic Dimensions (LxWxH):109.2 mmx 482.6mm x 44.2mm (4.30"x19.00" x1.74 ") Mounting: CEA-310-E 19-inch (482.6mm) rack Material – Panel: 18 gauge cold rolled steel, black e-coat Ground Lug Attachment: 3/8" 1 hole or two-hole lug (1"spacing)	
Industry Compliance	**STANDARDS COMPLIANCE** • ANSI/TIA-568-C.2 • ISO/IEC 11801 Ed 2.2 •ETLTested • IEC 60603-7 • IEC 60603-7-51 • IEEE 802.3an • IEEE 802.3af (PoE) • IEEE 802.3at (PoE+) • ANSI/TIA-1096-A	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (*Attach Manufacturer's Warranty Statement)* Minimum 15Years	

v) FACE PLATES - COMPLETE WITH TWIN SCREENED MAX MODULES

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Construction	Complete with screen Twin MAX RJ45 Modules • Double gang faceplates for each designated work area point. • UV resistant, high impact plastic preventing color fading and provides added durability	
Wiring	T568A and T568B	
Face Plate Characteristics	• Single • Label Covers- Faceplates include pressure-release designation label covers for quick, tool-less removal • With icon/label provision	
	• With doors/shutters • British Standard (85mm x 85mm) • White	
Module Characteristics	100/100/10Gbs Backward compatible	
	Max DC Resistance: 9.4ohms/100m 100-250Mhz: 100ohms±22% 1-100Mhz : 100ohms±15% NVP: 0.65	
Industry Compliance	• ISO/IEC 11801: 2002 2nd Edition(Category 6) • ANSI/TIA/IEC 754 and IEC 1034 • IEC 61156-5 1st Edition	
	• LSOH :IEC 754 and IEC 1034 • UL CMX • UL CMP and CSA FT6	
Warranty	End-to-End Manufacturer's Warranty on Cabling System (*Attach Manufacturer's Warranty Statement)* Minimum 15 Years	

d) FIBRE

i) BACKBONE MULTIMODE FIBRE OPTIC CABLE

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model (Mandatory)	
Construction	Steel Tape armoured with Glass Yarn	
Armour	Corrugated Steel Tape Armour	

Cable characteristics	- Support for 10GBASE-T -Low Density Polyethylene Sheath -Gel Filled Loose Buffer Tube -Level 1 Rodent Protection - Crash(N) at least 2500 -Torsion (Turns/M) not more than 5 - Multimode	
Fibre Specifications	-8-Core indoor Premium fiber meeting IEEE 802.3 10 Gigabit Ethernet Standard as well as IEC-60793-2-10 and TIA-492AAAC specifications for laser bandwidth Differential Mode Delay(DMD) specifications	
	- 900 μm tight buffer - 250μm coated optical fibre - Length markings in 2 ft. increments - Available in OFNR, OFNP and LSOH constructions - jacket Material is Lead Free - RoHS compliant	
Industry Compliance	- ISO/IEC 11801:2002 OM3	
	-ANSI/TIA/EIA-568-B.3	
	- ANSI/TIA/EIA-568-B.3-1	
	- ANSI/TIA-598-C -Telcordia GR-409-CORE - LSOH: IEC 60332-1, IEC 61034, IEC 60754 - OFNR: Communications Type OFNR(UL) and FT4 c(UL) - TIA-492AAAC laser bandwidth DMD specification	
	- IEC 60793-2-49 and TIA/EIA 455-220 DMD measurement test procedure	

e) ACTIVE DEVICES

i) NETWORK SWITCH (24 port/48port) – CISCO C9300

Item	Minimum Specifications	Proposed solution
Brand	State the brand, model and attach Technical Brochure (Mandatory) – The Switch should currently be supported by the Manufacturer and not less than 5 years to end of life.	
Features	• Full Power over Ethernet Plus (PoE+) capability • Downlinks total 10/100/1000 MBPS or PoE+ copper ports: 24, 48 ports data • Uplink configuration: Modular uplink options (2 No. 1G Gigabit Ethernet Combo) • Default primary AC power supply: 240VAC • Fans: FRU redundant • Operational efficiency with optional backplane	

	stacking, supporting stacking bandwidth up to 52 Gbps • Switch Fabric forwarding Bandwidth of 64GBPS or more. • Total stack throughput bandwidth of 16 GBPS or more. • UADP 2.0 Mini with integrated CPU • AES-128 MACsec encryption • Layer 3 capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access • Advanced network monitoring using Full Flexible NetFlow • Plug and Play (PnP) enabled • Should support IEEE 802.1, SSH, SNMP • Should support Jumbo frames •	
Specs	• More than 12,000 MAC addresses. • Default AC power supply AC 240V • Switching capacity: > 20 Gbps for 10 port > 52 Gbps for 26 port > 56 Gbps for 28 port > 104 Gbps for 48 port • Forwarding rate: >14.88 Mpps for 10 port >38.69 Mpps for 26 port >41.66 Mpps for 28 port >77.38 Mpps for 48 port • 195W POE Budget • Total number of MAC addresses: >8000 for 26 port >16000 for 28 port • Total number of IPv4 routes (ARP plus learned routes) : > 32 static routes for 26 port > 990 static routes for 28 port • Packet buffer per SKU: >12 MB Buffer for 26 port >1.5 MB Buffer for 28 port • Mean time between failures (hours) - >430341	
RAM& accessories	• Flash->= 256 MB	
Support	Locally Available Technical Support Services(*Manufacturer's Letter of Authorization Mandatory)*	
Warranty	Manufacturer's Limited Lifetime Warranty	

ii) WIRELESS ACCESS POINT

Item	Minimum specification	Proposed solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Features	➢ Networking Interface - (3) 10/100/1000 Ethernet Ports ➢ Buttons - Reset ➢ Power Method - 802.3at PoE+ Supported ➢ Power Supply - UniFi PoE Switch (Not Included) ➢ Power Save - Supported ➢ PoE Out - 48V Pass-Through (Pins 1, 2+; 3, 6-) ➢ Maximum Power Consumption with PoE Passthrough – 7W 19W* ➢ Maximum TX Power 2.4 GHz 20dBm 50GHz 20 dBm ➢ Antennas - (1) Dual-Band Antenna, Single-Polarity 2.4 GHz 1 dBi 5 GHz 2 dBi ➢ Wi-Fi Standards - 802.11 a/b/g/n/r/k/v/ac ➢ Wireless Security - WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES) ➢ BSSID - Up to 8 per Radio ➢ Mounting - 1-Gang Electrical Wall Box (Not Included) ➢ Operating Temperature - -10 to 50° C (14 to 122° F) ➢ Operating Humidity 5 to 95% Noncondensing ➢ Certifications CE, FCC, IC * Requires 802.3at PoE+ switch	
Advanced Traffic Management	➢ VLAN - 802.1Q ➢ Advanced QoS - Per-User Rate Limiting ➢ Guest Traffic Isolation - Supported ➢ WMM - Voice, Video, Best Effort, and Background ➢ Concurrent Clients - 250+	
Supported Data Rates (Mbps)	➢ Standard - Data Rates ➢ 802.11ac - 6.5 Mbps to 867 Mbps (MCS0 - MCS9 NSS1/2, VHT 20/40/80) ➢ 802.11n - 6.5 Mbps to 300 Mbps (MCS0 - MCS15, HT 20/40) ➢ 802.11a - 6, 9, 12, 18, 24, 36, 48, 54 Mbps ➢ 802.11g - 6, 9, 12, 18, 24, 36, 48, 54 Mbps ➢	

iv) Uninterruptible Power Supply

RACK MOUNT UPS

DESCRIPTION	MINIMUM SPECIFICATIONS	
Output	➢ Max Configurable Power (Watts) – 1.5KWatts/ 2.0KVA ➢ Output Voltage Note - Configurable for 220 : 230 or 240 nominal output voltage ➢ Output Voltage Distortion - Less than 2 % ➢ Output Frequency (sync to mains) - 50/60 Hz +/- 3 Hz Sync to mains ➢ Other Output Voltages - 220, 240 ➢ Load Crest Factor - 3 : 1 ➢ Topology - Double conversion online ➢ Waveform type - Sine wave ➢ Bypass - Internal bypass (automatic and manual)	
Input	➢ Input frequency - 40 - 70 Hz Auto-sensing ➢ Input voltage range for main operations - 100 - 275 Adjustable (half load), 160 - 275V ➢ Number of Power Cords - 3 ➢ Other Input Voltages - 220, 240	
Batteries and Runtime	➢ Battery type - Lead-acid battery ➢ Typical recharge time - 3hour(s) ➢ Nominal Battery Voltage - 96 V ➢ Expected Battery Life (years) - 3 - 5 ➢ RBC Quantity - 1 ➢ Battery Charge Power (Watts) - 168 Watts ➢ Extendable Run Time - 1 ➢ Battery Volt-Amp-Hour Capacity - 505	
Communications & Management	➢ Interface Port(s) - RJ-45 Serial, Smart-Slot, USB ➢ Control panel - Multifunction LCD status and control console ➢ Audible Alarm - Audible and visible alarms prioritized by severity ➢ Emergency Power Off (EPO) - Yes ➢ Available SmartSlot™ Interface Quantity - 1	
Environmental	➢ Operating Temperature - 0 - 40 °C ➢ Operating Relative Humidity - 0 - 95 (Non-condensing) % ➢ Operating Elevation - 0 - 3048meters ➢ Storage Temperature - (-15 - 45 °C) ➢ Storage Elevation - 0 - 15240meters ➢ Audible noise at 1 meter from surface of unit - 55.0dBA ➢ Online thermal dissipation - 703.0BTU/hr ➢ Protection Class - IP20	
Conformance	➢ Approvals - CE, CE Mark, EAC, EN/IEC 62040-1, EN/IEC 62040-2, RCM, VDE ➢ **Standard warranty - 3 years repair or replace (excluding battery) and 2 years for battery**	
Surge Protection	➢ Surge energy rating - 340Joules	

16.0 COMPLETION AND COMMISSIONING OF STRUCTURED CABLING WORKS

16.1 Upon completion of the installation, all cabling links must be tested for the following parameters, using Level Three testers: -

a) Category 6A Cable Tests

1. Wire Map
2. Length
3. Insertion Loss (Attenuation)
4. NEXT Loss
5. PSNEXT Loss
6. ELFEXT Loss, pair-to-pair
7. PSELFEXT Loss
8. Return Loss
9. ACR (Attenuation to crosstalk ratio)
10. PSACR
11. Propagation Delay
12. Delay Skew

b) Fibre Optic Cable Tests

1. Link attenuation (insertion loss)
2. Length

Any failing link must be diagnosed and corrected. The corrective action shall be followed with a new test to prove that the corrected link meets the performance requirements.

The results should be recorded in one or several measure books showing test results of the cable components. In addition, the measurements must be recorded on two soft copies (CD-ROM).

16.2 All components must be tested and a Completion Certificate issued stating the following:

a. Number of outlets
b. Type of cable
c. Date completed
d. Type of Warranty

In addition, an "as-built" package must be submitted with the following information

a. Updated floor plans
b. Wire/cable routing schematic
c. Facility assignment records
d. Horizontal cable test results
e. Fibre Backbone test results

17.0 Documentation

The contractor shall avail documentation (2 copies) detailing the layout and devices or components of the system and must include all information for maintenance technicians to run, service, extend or maintain the network. In particular, the documentation must be structured and contain the following:

a. Synopsis of the cabling (primary and secondary)
b. Charts of the distribution highlighting the details of the elements that have been installed
c. Detailed map of socket layout (2 Soft copies on CD-ROM should be availed)
d. Reports on measurements (2 Soft copies on CD-ROM should be availed)

The CD-ROMs provided shall include the software tools required to view, inspect and print any selection of test reports.

18.0 Warranty and Support

18.1 The Contractor will be required to give a per link warranty of at least fifteen (15) years for the structured cabling infrastructure and must provide a site certification certificate from the manufacturer of the cabling infrastructure not more than 30 days after completion of tests.

18.2 In the event of failure of the core switch, the contractor will be required to deliver any necessary parts on the next business day after determining that parts replacement is required, during the standard work week (8 hours a day, 5 days a week). This support will be carried out by a field engineer and will run for a period of Twenty Four months from the date of commissioning of the LAN.

18.3 The contractor will be required to provide a sixty months warranty on the edge switches from the date of commissioning of the LAN.

19.0 ADDITIONAL NOTES

Tenderers should take note of the following

a) The network should be capable of carrying data, voice and video. QOS should be considered as part of installation and configuration of the network.
b) All active LAN equipment should be from the same manufacturer for seamless integration, management and maintenance.
c) Each floor should have a telecommunication Closet to house the necessary structured cabling components and active equipment.

20.0 BROCHURES AND TECHNICAL LITERATURE

Tenderers **must** enclose together with their submitted bids brochures detailing technical Literature and specifications of the active components of the structured cabling system. The brochures shall be used to evaluate the suitability of these components.

Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified.

2.11 NETWORK CONTROL EQUIPMENT AT THE NETWORK CORE

The active control equipment at the core should have the following features:

a) Backplane/switch fabric Bandwidth Capacity of 150 GBPS or more.
b) IEEE 802.3 compliant for power over Ethernet
c) IEEE 802.1 based security compliant
d) SNMP compliant for security
e) Layer 2/3/4 switch
f) Should support Gigabit Ethernet to the desktop g) Should have at least 12-slots
h) The core switches should have two links to each edge switch configured in active/active configuration. The links should deliver 2GBPS throughput when all ports are active.
i) The core switch should have redundant power supply, redundant fan tray and redundant CPU/ supervisor engine installed
j) Fiber cable linking stacks on each edge switch to the core should be connected to 1000Base X(GBIC) port on the core switch using star topology
k) Should be installed with the latest version of system software at the time of delivery. l) Should support Quality of service for various applications.
m) Active devices shall be rack mounted.
n) Active devices used at the LAN edge must be stackable and shall attach to the backbone cabling at 1000mbps.
o) Where more than one active device is required to satisfactorily serve the floor data outlet distribution requirements they shall be stacked using interface operating at the backbone speed.

(State make and type, and enclose catalogues)

2.12 LABELING

a) Horizontal and backbone cables shall be labeled at each end. The cable or its label shall be marked with its identifier.
b) A unique identifier shall be marked on each faceplate to identify it as connecting hardware.
c) Each port on the face plate shall be labeled with its identifier.
d) A unique identifier shall be marked on each piece of connecting hardware to identify it as a connecting hardware.
e) Each port on the connecting hardware shall be labeled with its identifier.
f) A unique identifier shall be marked on each port on the connecting faceplate to identify it as a connecting hardware.

2.18 NETWORK MANAGEMENT SYSTEM

The Network Management System (NMS) enables Service Providers to Manage all Links in the Network from a Network Operations Center (NOC). With NMS, Service providers should monitor and configure up to 10,000 links.

Bidders must propose the manufacturers Network Management system for centralized configuration, maintenance and troubleshooting of active equipment. Third party standalone systems should not be offered as part of the solution.

Features and functionalities of the system should include the following:

a) Should be compatible with Microsoft windows/Linux operating systems

b) Graphical User Interface for central Management and network viewing
c) Network discovery and inventory management
d) VLAN, multicast, security and load-balancing/fail over configuration
e) Downloading and saving of log file from the device flash memory
f) Centralized upgrade/backup and archiving of active devices
g) Export of network topology to JPEG or other standard formats

3.00 TECHNICAL SPECIFICATIONS FOR ACCESS CONTROL SYSTEM

DESCRIPTION OF THE PROJECT

The works comprise the supply, Installation, Testing and Commissioning of ACCESS CONTROL SYSTEM and the associated cabling works as listed in the Bills of Quantities.

1.0 ACCESS CONTROL - SYSTEM

The main components of an access control system are:

a) Intelligent System Controller and Server

b) The proximity card reader

c) The proximity cards

d) The magnetic locks

e) Biometric readers

2.0 TECHNICAL SPECIFICATION

THE SYSTEM SHOULD BE INSTALLED IN ACCORDANCE TO BS EN 60839-11-1:2013

3.01 ACCESS SYSTEM CONTROLLER

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	• The System Controllers shall be intelligent hardware devices with a full on-board database of tags and access data. • The System Controllers shall operate in a truly standalone mode when there is no network connection available to the ACS database engine module. • Each system controller/cluster controller shall be capable of storing up to **1000 tags**, and shall be capable of buffering up to **100 thousand transactions** should the connection to the ACS polling module be lost. • The ACS controller shall be capable of facilitating more tags and transactions if coupled with another master device (System Controller or Application Controller) which increases storage and processing capacity. • The System Controllers shall allow for the easy expansion of door controllers without the need to physically wire power and communications between these devices. • Supports full off-line functionality, including anti-pass back, access rights, emergency and lockdown modes. • RS485 – with connectivity speeds of 38,400 Baud • TCP/IP Ethernet connectivity – with support for up to 100Mbps connectivity speeds • Serial BUS – with connectivity speeds of 7,600 Baud. • Database on global Microsoft SQL platform, using HTML5 • Simple integration with CCTV, intrusion and Fire alarms	

	• Uses AES 128-bit Encryption through a Diffie Hellman key exchange to ensure secure communications • Stores all information locally on the Cluster Controller	
Key Functions	• The ACS server console shall provide an auto detect function that shall poll the RS485 bus, or the LAN/WAN for any ACS controllers • The ACS controllers shall respond back with their respective factory assigned addresses which shall be automatically inserted into the ACS database. • The ACS system controllers logically addresses shall automatically be assigned to the devices without any user intervention. • The ACS System Controller shall support up to 64 physical devices connected via RS485 terminal, communications bus, TCP/IP or proprietary solutions. • Proprietary door controllers for connection of proprietary ACS readers. • 3rd Party door controllers for connection of 3rd Party door readers such as biometric devices. • Door Controllers with the following, or a combination of the following, components built in to facilitate the opening of doors and the monitoring of doors, Dry contact relays, Digital inputs, Ports for connection to ACS readers, Communications port for 3rd Party readers, RS485 and SBUS connectivity. • Each Door Controller shall support ≥ two (2) readers. • A Software utility to upgrade Firmware while installed on-site, without removal of the Cluster Controller.	
Performance	• TCP/IP, RS485 and Serial Bus Communication	
Hardware	• Ethernet and RS485 communication protocols • 32-bit ARM Cortex M3 processor • Operating temperature of -25°C to +60°C • 4KB Ram 48KB Flash Memory • 8 LED diagnostic indicators • Anti-tamper switch • Reset button • Real time clock battery backup	
Power	• Input voltage of 12 VDC to 15 VDC Polarity Sensitive, 140mA current, 1.7W Power, Reverse polarity & over-current protection	
Environmental class	• IP 20,	
Certifications	• UL(US), CE(EU), SABS (RSA) ROHS	
Housing	• Plastic housing 18.6cm (l) x 7.9cm (w) x 5.7cm (h) • Housing material black ABS plastic or IPS boxed solution	
Data Transfer	• Encrypted	
Warranty	Comprehensive 3 Years Manufacturer's Warranty (*Attach Manufacturer's Warranty Statement*)	

3.02: BIOMETRIC CARD READER

Category	Feature	Specification
Main	Biometric	Fingerprint •Sensor type Optical (multispectral imaging)
	IP Rating	IP65
	RF Option*	➢ BS2-OMPW: 13.56Mhz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa, NFC ➢ BS2-OIPW: 13.56MHz iCLASS SE/SR/Seos ➢ BS2-OHPW: 125kHz HID Prox ➢ BS2-OEPW: 125kHz EM
Capacity	Max. User (1:1)	500,000
	Max. User (1:N)	20,000
	Max. Template (1:1)	1,000,000 (Two templates per finger)
	Max. Template (1:N)	40,000 (Two templates per finger)
	Max. Text Log	3,000,000
Interface	Wi-Fi	Yes
	TCP/IP	Yes
	RS-485	1ch Host or Slave (Selectable)
	Wiegand	1ch Input, 1ch Output
	TTL Input	2ch Inputs, 2chOutputs
	Relay	1 Relay
	USB	USB 2.0 (Host)
	Sound	Buzzer Single tone
	Status	LED Tri-coloured status LED
Relay	Voltage	Max. 24VDC
	Current	0.5A, Max. 1.A
Hardware	CPU	1.0 GHz
	Memory	8GB Flash + 256 MB RAM
	LCD	2.8" QVGA Color LCD
	LED	Multi-Color
	Sound	16-bit Hi-Fi
	Operating Temp.	-20°C ~ 50°C
	Tamper	Yes
	Power	9V ~ 18V
	PoE	Enabled
	Certificates	CE, FCC, KC, RoHS, REACH, WEEE

3.03: RFID CARD READER

General Features

- Mobile card (NFC and BLE)
- Industry standard communication via OSDP
- Multi-type hardware structure
- Enhanced security with the Secure Element
- IP67 - Water and dust proof
- IK08 - Vandal proof
- Multi-class RFID card reading
- Issue the smart card by using BioStar 2

Particular Specifications

125kHz card compatibility - EM
13.56MHz card compatibility - MIFARE, MIFARE Plus, DESFire/EV1, FeliCa
Mobile card - NFC, BLE
IP rating - IP67
IK rating - IK08
Installation type - Mullion
Keypad - Nil
RS-485 - 1ch (OSDP compatible)
Wiegand - 1ch output
TTL - 1 tamper output, 3ch LED, buzzer control
Sound - Multi-tone buzzer
Operating Temperature - -35℃ ~ 65℃
Operating Humidity - 0% ~ 95%, non-condensing
Power - DC 12V
Certificates - CE, FCC, KC, RoHS, REACH, WEEE, SIG

3.04: MAGNETIC LOCK

Standard: ANSI/BHMA A156.23 Grade 1 compliant

Key Feature: Electromagnetic Narrow Line (projects only 2-11/16 into the opening) EMLock, 1200 lbs/600lbs holding force and failsafe access control, Clear anodized aluminum, wire chamber and integrated PC board with wiring terminal block, dual 12/24VDC input designed to ensure trouble free interface with electronic access control systems, automatic door operators, peripheral equipment and fire life safety systems for emergency release.

Electrical Data: 300mA/540mA @ 24VDC/12VDC

Sensor: Magnetic bond sensor, Door status sensor and LED Status indicator

3.05: WEB BASED ACCESS CONTROL SYSTEM SOFTWARE

Key Feature: PC based software should communicate with multiple Access Control Reader Controllers using Ethernet LAN interface. It should communicate with the access control readers to configure them, to fetch swipe data and to monitor their health. It should generate various reports including Access granted, Access Denied, Attempted Entry, Unused Alarm Entry, Duress Alarms log w.r.t. Date & Time. The reports can be generated for one employee, a group of employees or for a department.

- Basic Access Control, Basic Time Attendance and Enrollment Management
- Compatible with all reader Hardware
- Time, User and Zone based Access Control
- Access Zones, Access Modes and Access Level configuration
- Advanced Access Control Features Such as 2-Person Rule, First-in User Rule, Anti-pass Back, Guard Tour, Duress Detection, Time Stamping and More
- Input and Output Linking
- Various Reports Generation Desired Features of software
- Reader Master – Should allow editing of various access points and their interface details viz. IP address, Unit ID, Com Port.
- Employee Master - Allows editing of employee details, like name, employee number, shift, access zones.
- Reader Configuration - Allows modification of reader parameters, like operating mode, door open time, welcome string, Alarm settings, Timeouts, etc. These parameters are also stored in the local database.
- Card Personaliser / Finger Encoding (option): Allows Mifare card/ Finger print encoding based on the employee master information. Needs externally connected personaliser.
- Offline Data Gathering – Periodically polls all the connected readers for swipe data and displays with user photograph if available. Data is available in near real-time (within 30 seconds).
- Headcount – Zonewise presence of employees is available. Alternately employee can be tracked within a zone.
- Clock Data Editing - Allows editing of the time data (by administrators with time data edit permission).
- Database: MYSQL
- Export Function - Export function can be used to export data to a CSV file.
- Time Synchronization - Time can be synchronized of all the connected readers on a periodic basis.
- Large Data -Upto 10Gb data can be stored in the current tables. Older data is moved to archives. Instantaneous Reports are available on the current table data.
- Easy of Operation: User can group different readers and employees. Different actions can be applied to selected group of readers or employees.
- It shall be possible to administer and view the ACS sites remotely via an HTML5 compliant browser using any HTML 5 compatible device
- Capacity of 100 users or more

3.06: ACCESS CONTROL POWER SUPPLY

Key Features

- AC power failure supervision relay
- Battery failure / low battery supervision relay- Batteries are disconnected from the output circuit prior to deep discharge preventing battery destruction.
- The output filtering stabilizes the DC output voltage and eliminates AC line noise. The solid state regulator maintains the selected output voltage at 12VDC or 24VDC regardless of the output load changes, including battery charging.
- DC Power failure supervision relay
- Auxiliary output relay
- Relays rated 3A@24VDC, 3A@240VAC
- Adjustable voltage ranges to compensate for voltage drop
- Built-in backup battery charger (battery not included)
- Selectable 2.2k 9 End-of-Line (EOL) resistor for AC failure and battery failure supervision relays via DIP switch
- Selectable delay timer (5 seconds, 5 minutes, 5 hours) for AC failure supervision relay via DIP switch
- LED Status indicator for AC input, DC output and channel outputs
- Unique heat sinking configuration provides cooler operation, longer life and trouble-free operation

Power

- Input: 110~240VAC
- Operating Input voltage: 110~240 VAC
- Field-selectable 12 or 24 VDC output
- Total continuous output current: 5A@12VDC, 2.5A@24VDC
- Individually fused power output (PTC-type fuses) rated at 1.1A, fail-safe or fail-secure modes.
- AC Input fuse rated at 3.15A

Enclosure

- Heavy-duty steel case with ventilation holes
- Enclosure large enough to fit two (2) 12V/12Ah batteries
- Removable steel cover for easy access to power connections
- Power cord and battery leads included.

3.07: ACCESS CONTROL COMPUTER WORKSTATION

DESCRIPTION	MINIMUM SPECIFICATIONS
General	➢ **Brand:** HP ➢ **Operating System:** Windows 10 ➢ **Chipset:** intel ➢ **Processor:** Core i7 ➢ **Processor Speed:** 3.6 GHz ➢ **RAM Type;** DDR ➢ **RAM Capacity:** 16 GB ➢ **HDD Type:** SATA ➢ **HDD Capacity:** 1TB ➢ **Graphics Card:** Yes
Input Device Features	➢ **Keyboard type –** Wired ➢ **Mouse type** – Wired
Display Features	➢ Monitor type – LED ➢ Monitor Size – 23.8inch
Ports and Connectivity Features	➢ **USB Port –** Yes ➢ **Ethernet -** Yes ➢ **HDMI -** No ➢ **DVI -** No ➢ **VGA -** Yes ➢ **Memory Card Slot -** 2

3.08: PUSH TO EXIT BUTTON

TECHNICAL SPECIFICATIONS

Compliant Standards: NFPA Compliant

Item	Minimum Specifications
Brand	State the brand, model and attach Technical Brochure (Mandatory)
Key Features	➢ illuminated switch button ➢ high impact resistant material ➢ Integrated electronic timer, adj. 1-60 sec, 12/24VDC, DPDT 2Amp contact ➢ Wire Leads 6", 20 Gauge ➢ Stainless Steel – Standard ➢ 1 Green LED ➢ narrow frame mount exit switch

3.09: PROXIMITY CARDS

TECHNICAL SPECIFICATIONS Compliant Standards: ISO/IEC 15693		
Item	**Minimum Specifications**	
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	• 13.56 MHz read/write contactless smart card technology provides high-speed, reliable communications with high data integrity. • Constructed with ABS shell and PVC cover label, offering durable packaging. • Available in 2k bit (256 Byte), two application area configurations only. • iCLASS technology ensures high security with mutual authentication, encrypted data transfer, and 64-bit diversified keys for read/write capabilities. • Meets ISO 15693 standard for contactless communications. • A PVC Overlay allows for on-site Photo ID production using most direct image printers. • triple DES encryption.	
Data Retention	• 10 years	
Write Endurance	• Min. 100,000 cycles	
Memory Type	• EEPROM, read/write	
Baud Rate	• 26 Kbps	
Transaction Time	• <100ms typical	
Operating Humidity	• 5-95% non-condensing	
Operating Temperature	• -40° to 160° F (-40° to 70° C)	
Card Construction	• ABS Shell with PVC Cover Label.	
Weight	• 0.24 oz (6.8 g)	
Typical Maximum Read Range	• R10: 1.5-2.5" (3.8-6.3 cm) • R30/RW300: 1.5-3.0" (3.8-7.6 cm) • R40/RW400: 2.5-4.5" (5.1-10.2 cm) • RK40/RWK400: 3.0-4.0" (6.3-8.9 cm)	
Warranty	Comprehensive Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

3.10: OVERRIDE KEY SWITCH

TECHNICAL SPECIFICATIONS		
Item	**Minimum Specifications**	
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	• Tamper Resistant, Recessed Cylinder • Tamper Resistant Spanner Screws • Heavy Duty All Steel Assembly • Stainless Steel Faceplates of 0.25" Thickness of Aluminum • Large Actuator for Positive and Consistent Activation • 6 Amp @ 30 VDC Resistive • 7", 22 Gauge Wire Leads • Compatible with 1.0" or 1.375" Mortise Cylinder (included) • Anti-Tamper Sensor, SPDT • Turning the key left or right actuates and latches the contact. Contact position is maintained until the key is inserted and turned again.	

3.11: EMERGENCY EXIT DEVICE

TECHNICAL SPECIFICATIONS Compliant Standards: CE marked to BS EN 1125		
Item	**Minimum Specifications**	
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	• Suitable for push face of outward opening doors • 3 point locking comprising • Single point central deadlatch (active leaf • 2 point upper and lower pullman latches (inactive leaf) • Non-handed for maximum flexibility • Max. door leaf width : 900mm or 1200mm • Anti-thrust steel deadlatch • Adjustable steel strike • Rods with integral cover • Complete with signage and fixing instructions • Supplied complete with adjustable flat, corner and floor strikes to suit various door frame overlap sizes • push bar and rods can be cut down to size • Suitable for timber and metal application • Silver finish • Signage as required by BS EN 1125 annex A19, colored green & white as detailed in BS5499	
Warranty	Comprehensive Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

PART 4 (A) -PARTICULAR SPECIFICATIONS FOR STANDBY GENERATING SYSTEM

DESCRIPTION

1. Location of Site
2. Climatic Condition
3. Operating Conditions
4. Functional objects
5. Scope of the Contract
6. Performance objectives
7. Generating Set Arrangements
8. Diesel Engine
   - General
   - Fuel Oil System
   - Lubricating Oil System
   - Starting of Engine
   - Cooling System
   - Governing System
   - Exhaust System
   - Engine Instruments
   - Pipe work, Valves and Fittings

9.0. The Generator (Alternator and Exciter)

9.1 General

9.2 Excitation

9.3 Electrical Control Panel

9.4 Lock-out

9.5 Fault Indication

9.6 Starting Battery and Charger

9.7 Wiring and Earthing

9.8 Contactors

9.9 Relays

9.10 Fuses

9.11 Rectifiers, capacitors and solid state components

9.12 Enclosures for Equipment

10.0 Lifting Gear and Handling

10.0 Commissioning

PARTICULAR SPECIFICATION FOR THE STANDBY GENERATING SYSTEM.

1 Location of site

The site for the proposed Contract Works is **Liwatoni - Mombasa County.**

2 Climatic Condition

The following climatic conditions apply at the site of the Contract Works and the equipment, materials and installations shall be suitable for these conditions:

Mean maximum temperature	30.9 ^{o}C D.B.
Mean minimum temperature	26.6 ^{o}C D.B.
Range of relative humidity	73% - 84%
Salt content in the atmosphere	0.2%
Altitude	1795 meters above sea level
Latitude	04^{o} 0'S, 39^{o} 36'E
Solar radiation, June	780 mean max. Langleys.

3 Operating Conditions

The equipment and all components shall be suitable for the operation in ambient conditions of 5^{0} C to 40^{0}C and up to 100% relative humidity

i) in an unheated ventilated building
ii) in the open air as specified

Unless otherwise stated all ratings of equipment and components shall be interpreted as site rating and NOT sea level or other ratings.

4 Functional Objectives

The set shall be capable of operating continuously and satisfactorily in a medium dust laden atmosphere as defined in BS 1701 and in accordance with BS 649.

The generating set is required for standby duty and will be connected to the switchboard through a circuit. It shall have an automatic mains failure control, appropriately interlocked with the other incoming supply. Provisions shall be made in the control circuit of the generator for automatic and remote push button control, including the terminals and cable glands for all external cables, which will be supplied by others, where specified. It shall also be possible to start, operate and stop the set manually, independent of any automatic features

Within the operating conditions specified in part 3 above the set shall be capable of starting and accepting full load within the shortest possible time, and in any case, in not more than 10 seconds. Any special features included to achieve this shall be stated in Section F.

5. Scope of the Contract Works

The work covered by this Specification includes the design, manufacture, supply, delivery, installation, commissioning and testing to the satisfaction of the Engineer and maintenance for a period of twelve months of a new generating set complete with all necessary ancillary equipment.

The equipment to comprise 1350KVA, 415 volts/3 phase /50Hz prime rated two diesel generator sets with all integral accessories, and all necessary equipment for the safe and efficient working of the set. The diesel generator set will be site rated at level of 2184 metres, Kenya Datum.

Diesel generator set to include:

a) Push button starting, starting battery and mains power supply trickle charger to be included.
b) 72 hour operational running capacity auxiliary fuel oil storage tank, loose transfer pump and duplex oil strainer.
c) An integral belly/ base fuel tank for daily service with an operational running capacity of 8 hours
d) All interconnecting pipe work, valves and fittings between the storage tank, base tank and the diesel engine.
e) An automatic generator control unit
f) A diesel generator control cubicle
g) Acoustic enclosure/ sound attenuated canopy
h) All local wiring
i) Maintenance tools and spare parts as specified.

6 Performance Objective

The output rating of the set in KVA, the voltage, the number of phases and the frequency shall be as specified in Bill No.2 Schedule 1 of the Bills of Quantities.

Within the operating conditions specified, the set equipped with its standard air intake filters, shall be capable of delivering its rated output continuously at rated voltage and 0.8 lagging power factor and of delivering 10% in excess of the continuous maximum rating for a period of one hour in any 12 hour period.

The steady state voltage shall be maintained within 2 ½ % of the rated voltage under control of the voltage regulator between the cold start ambient conditions and the maximum working temperature, from no load to 10% overload and from unity to 0.8 lagging power factor. After any change of load the voltage shall not vary by more than + 15% of the rated voltage and shall return to within +/- 3% within 3 seconds and to within 2 ½ % of rated voltage within 1 seconds. On starting the voltage overshoot shall not exceed 15% and shall return to within 3% in not more than 3 seconds.

The governing of the set shall be such that the steady load speed band shall not exceed 1% of rated speed. Sudden removal of the full load at rated frequency shall not cause the frequency to rise above 110% of the rated frequency and it shall return to within 105% of the rated frequency within 3 seconds. The resultant steady state frequency shall return to 104% within 15 seconds. If full load is then reimposed the frequency shall not fall below 94% of rated frequency and shall return to 99% within 3 seconds and to the rated frequency within 15 seconds. The cyclic irregularity of the set at full load shall not be worse than 1/150.
The deviated interference shall be suppressed to the limit specified in BS 800 and BS 833.

7. Generating Set Arrangement

Unless otherwise indicated the set and its auxiliaries shall be mounted on sufficiently substantial under base. All items which must be held in correct relative alignment shall be located by means of dowels.
The set shall be designed and supplied for operation bolted to the floor on robust anti-vibration and shock absorbing devices. They shall have adjusting screws for optimum setting and leveling and be so designed and installed that no appreciable engine vibration shall be transmitted to the floor or to any surrounding.
Bearings shall be suitable for operation over long periods without the need for replacement of the lubricant. Oil lubricated bearings shall be fitted with a visible oil level gauge.

8. Diesel Engine

8.1 General

The engine shall comply in design and performance with BS.649 "Diesel Engines for General purposes" or its approved equivalent. The engine shall be designed for satisfactory operation on fuel oil and lubricating oils complying with BS. 2869.

The engine shall be totally enclosed, with forced lubrication from an integral pump having on the suction side a course strainer and on the delivery side a dual' full flow' fine filter with a changeover cock incorporating pressure by-pass, so that the oil flow to the engine is maintained if the filter should choke. Alternatively a single filter of the self-cleaning type fitted with a by-pass relief valve and having the same filtration performance may be provided. Manual lubrication of any part of the engine will not be accepted. The capacity of the lubricating oil system shall be sufficient to enable the engine to run continuously for 12 hours at any load without replacement.

A filter with a by-pass relief valve shall be inserted in the fuel line immediately before the pump(s). The fuel filter element shall be incapable of passing particles larger than micrometers. The fuel system shall be so arranged that fuel resulting from filter, pump or pipe spillage shall be incapable of entering the engine sump.
Air filters complying with KS 06-294: 1986, Grade 'A' and Grade 'B' suitable for use in a dusty atmosphere shall be fitted on the engine air intake(s)

No significant critical speed of the complete shaft system, including the generator, shall be within 15% of the rated speed. A manually reset over speed trip shall be fitted to stop the engine if its speed exceeds the rated speed by 15%. A mechanical trip is preferred but an electrical over speed trip may be offered. Both types shall be equipped with a pair of contacts which close on operation of the trip. If the device is belt driven, at least two belts shall be provided and the drive shall be capable of carrying full load with one belt removed.

The set shall be arranged such that on shut-down the cooling water temperature shall not rise with residual heat so that the high water temperature lock-out operates. The engine may be naturally aspirated as pressure charged, or as indicated.

The starting shall be by means of electricity supplied from a starter battery. The starter motor shall be of axial type, de-energizing by a device operated from the engine. A means of manual starting shall also be provided. Suitable means shall be provided for running by hand the engine main shaft and the associated generator to facilitate inspection and overhaul.

If weekly test runs are insufficient to prevent the drying out of the bearings, means shall be provided to ensure that the bearing surfaces are adequately and automatically wetted with lubricating oil either periodically or immediately prior to every start.

The engine shall be capable of being started from any crank position. A thermostatically controlled 240-volt immersion heater may be fitted in the engine lubricating oil sump to facilitate starting. The heating surface loading of any lubricating oil heater(s) shall not exceed 0.015 watt per square millimeter to avoid carbonization of oil.

An efficient exhaust silencer with adequate draining facilities shall be supplied, and shall either be mounted on the set or installed in a generator room constructed as shown on the drawing indicated. The exhaust silencer system shall be so arranged that it may be readily relocated if required. Where any additional piping bends and fittings are specified, the manufacturer shall advise on any problems involved.

8.2 Fuel Oil System

An auxiliary fuel storage tank whose minimum capacity shall be sufficient to run the engine continuously on full load for 72 hours shall be installed in the position indicated in the contract drawing. It shall be supplied complete with supports.
The tank shall be fitted with a hand operated fuel with a flexible suction hose to permit filling from a drum on the floor.
A three way cock shall be fitted in the line from tank to the engine to enable the fuel to be supplied from a source other than the storage tank.

The position of the cock shall be clearly marked 'MANUAL, AUTOMATIC, OFF' as applicable.

A duplex oil filter shall be supplied between the storage tank and the diesel engine. The duplex filter shall be capable of being cleaned without dismantling, or in interruption of the fuel flow, and shall be easily maintainable. The tank shall be equipped with a graduated dipstick, a clearly visible contents' gauge (not of the site glass type) and with drain, vent, overflow and inlet and outlet connection.
The set shall also have an integral belly/base fuel tank for daily services with an operational running capacity of 8 hours.

8.3 Lubricating Oil System

An engine driven integral gear type lubricating oil pump shall be provided. The lubricating oil system shall include an oil cooler and fine mesh filters, together with devices to indicate lubricating oil pressure and to initiate a 240 volt A.C. Lubricating oil Low pressure Alarm, Lubricating Oil High Temperature Alarm and Cooling Water High Temperature Alarm.

As separate 240 volt A.C. Motor driven automatic lubricating oil priming pump shall be provided for intermittent operation when the diesel is lying idle.

8.4 Starting of Engine

The diesel generator set shall have facilities for local and remote push button starting, with a Local/ Remote/ Automatic selector switch at the local panel.
On mains failure the engine shall be capable of being automatically started from battery located near the generator set.

The battery shall be complete with drip tray and trickle charger.
All necessary relays, contacts, switches and miscellaneous items for the starting sequence shall be supplied and installed in the local control panel.

The system shall be designed to give maximum reliability in starting.
The Contractor shall state in detail his proposals to ensure reliable starting and prevention of deterioration of the diesel engine, generator and exciter during idle periods.

All manually operated valves and controls on whose setting the correct operation of the automatic starting equipment depends shall be provided with locking devices.

8.5 Cooling System

The engine may be air or water cooled unless a preference is indicated.

8.5.1 Air Cooling of Engine

Cooling air for the engine and lubricating oil shall be provided by fan(s) mechanically driven from the engine. The cooling system shall be adequate for the total requirements of the engine when running on continuous full load and on 10% overload for one hour in accordance with BS 649 and under the conditions of Section 3.

The engine shall be so designed that the cooling air discharges into or is drawn through a reasonably airtight ducted assembly enclosing the lubricating oil cooler, the cylinder barrels and the cylinder heads of the engine.
This assembly shall terminate in a flanged outlet to which trunking may be readily attached when necessary, to enable hot air from the cooling system to be discharged outside the building.

Belt driven fans shall have at least two belts and the drive shall be capable of transmitting the full load with one belt removed. The cooling air temperature shall be controlled so as to maintain a safe working temperature of the cylinder hand(s) and the engine shall shut down if the maximum is exceeded.

8.5.2 Water Cooling of Engine

A radiator of the air blast type shall be provided. It shall either have separate sections for water and for lubricating oil or be arranged for jacket water cooling only.

The radiator shall be mounted on the set and the fan(s) shall be mechanically driven from the engine. Where indicated the radiators shall be suitable for remote wall or floor mounting, in which case the fan shall be electric motor driven from a supply similar in voltage, phase and frequency to the alternator output and shall be started on line.

Where remotely mounted, the fan shall only operate when generating set is running and shall be controlled by a thermostat mounted in the radiator such that the fan motor will start on rising temperature 50^0C and stop on falling temperature.

Belt driven fans shall be provided with at least two belts and the drive shall be capable of transmitting the full load with one belt removed. Circulation of the jacket water and lubricating oil through the respective radiator sections and /or heat exchanger shall be by means of pumps mechanically driven by the engine. Belt driven pumps shall be provided with at least two belts and drive shall be capable of transmitting the full load with one belt removed.

Circulation by thermo-syphon will be accepted provided the engine will operate under the conditions of section 6 and in accordance with BS 649.
An easily visible flow indicator provided with contacts shall be fitted in the water outlet from the engine; the contacts shall close in the 'no flow' condition and shut down the set.

Alternatively in thermosyphon systems and sealed or pressurized radiator systems the flow indicator may be dispensed with providing the engine shuts down by the operation of the high temperature or low oil pressure safety devices in accordance with section 8.3.

A thermostatically controlled diverter valve shall be inserted in the engine water discharge pipe with a return to the circulating pipe section, to maintain the circulating water at the optimum temperature irrespective of the load. Alternatively a thermostatic bypass will be accepted.

A radiator make-up/expansion tank, fitted with float control inlet, shall be provided. If a sealed or pressurized unit is offered the tank may be dispensed with.
Where indicated provision shall be made on the radiator framework to permit the attachment of ducting for the discharge air.

A thermometer shall be mounted near the cylinder head(s) to indicate water temperature. Where a lubricating oil cooler is fitted, thermometers shall be mounted at the oil inlet too and outlet from the engine. Alternatively, thermocouple may be provided at all thermometer positions and taken to an instrument panel.

Adequate drains shall be provided at low points in the water and lubricating oil systems of the radiator and, where applicable, of the heat exchanger.

8.6 Governing System

Governing shall conform to B.S. 640 Class A. The governor shall control the frequency within the limits stated in Section 6 Part. Manual speed adjustment shall be provided over a range of +/-15% of the rated speed at any load. The governor system shall be of the mechanical or hydraulic type. In addition the engine shall be fitted with an approved overspeed trip device which shall operate independently of the normal speed governor and shall act directly upon the fuel supply to the engine.

The overspeed shall act at a speed of 12% to 15% in excess of normal operating speed.

8.7 Exhaust System

The diesel engine shall be provided with a suitable exhaust system for horizontal discharge outside the diesel generator room.
The silencer shall be of spark arresting type and shall be equipped with cleaning and draining arrangements.

If an exhaust driven turbo-charger is supplied it shall include air intake filters, mani-folds and outlet manifolds.

All necessary ducting, piping, supports and lagging required for the system shall be included.

Weatherproof wall boxes permitting expansion shall be fitted where the exhaust piping passes through the building wall or roof. Pipe work shall be connected at site by butt weld connections or use of flanged joints. The use of screwed connectors shall be avoided.

Flanges shall conform to the appropriate Table of B.S.10: 1962. Welding of flanges at site shall be carried out in accordance with B.S.806. The faces of flanges shall be machined and the backs shall be machined or spot faced to receive the bolt heads.

Valves and fittings shall be of approved design and manufacture and shall be subject to the same tests as the highest pressure piping or vessel to which they are connected.

8.8 Engine Instruments

Unless otherwise indicated the following instruments shall be provided:

(a) a lubricating oil pressure gauge
(b) a running hours meter
(c) a tachometer
(d) a water thermometer
(e) an exhaust gas pyrometer or thermometer mounted near the mani-fold
(f) lubricating oil thermometers on the inlet to and outlet from the engine, when a lubricating oil cooler if fitted
(g) Exhaust turbo-blower pressure gauge(s) as applicable

8.9 Pipe work, Valves and Fittings

All piping shall comply with requirements of KS-259:11989 for mild steel pipes.
Provision shall be made for ready handing of all parts of the plant during assembly or disassembly of the unit.

Adequate provision shall be made for attaching lifting devices, slings and eyebolts.

9. The Generator (Alternator and Exciter)

9.1 General

The generator shall comply with B.S.2613:197, for service in tropical conditions, and shall withstand being idle for considerable periods without any harmful drop in the insulation resistance.

The generators shall have prime rated net output of 1350KVA as specified in the schedules of the Bills of Quantities, at 0.8 lagging power factor, 415 volts, 3 phase, 4 wire, 50 Hertz with brushless rotating rectifier excitation system and voltage regulator. It shall be directly coupled to the engine and be sized such that it will accept the maximum output of the engine including overload. The output voltage shall be maintained within plus or minus 2 ½ % from no load to full load conditions. The alternator shall be capable of operating within the range of plus or minus 15% of the nominal voltage according to the automatic voltage regulator.

Three phase machines shall be star connected, and a diagram showing the terminal marking and phase rotation shall be provided in the terminal box. Cables connecting the machine winding and machine terminals shall not have a higher de-rating factor for temperature than the windings.

The insulation shall comply with BS 2757 excluding Classes Y and A. The insulation shall have an oil, moisture and fungus proof finish, with a surface which will not retain dust or condensation. It shall be possible to put the set in service after long periods in unheated storage without necessarily drying out the insulation.

The alternator shall be capable of withstanding a short circuit for three seconds when under the control of the automatic voltage regulator.

9.2 Excitation

Excitation shall be by means of brushless direct coupled exciter armature.

The alternators shall be designed for an excitation voltage at full load of not less than 50 Volts unless prior approval is given.

9.3 ELECTRICAL CONTROL PANEL

The Automatic Mains Failure control panel shall be provided and fitted with the following:-

a) Two four pole contactors and two TP & N incoming MCCB's each of suitable rating for controlling the supply from the mains transformer and standby generator.
b) An automatic voltage regulator for the set.

c) Control equipments as necessary including phase failure protection relay for both the mains supply and the generator supply (with both under and over voltage protection) and phase sequence protection relay for the mains supply all to fulfill the functional requirements and automatic changeover as detailed in Part 9.3.2
d) One ammeter and a selector switch to measure each phase current and neutral current
e) One voltmeter and a selector switch to read line to line and line to neutral voltage
f) A frequency meter
The meters shall comply with BS 89, table 7.

9.3.1 General

The set is to be used for mains failure duty and an automatic starting panel shall be provided which shall contain all necessary equipment for controlling the automatic starting and stopping of the set, lubricating oil priming (if necessary), all auxiliaries, fault warnings and shut downs. All faults, warning and shut-downs shall be separately indicated. There shall be test facilities for indication lamps, etc, preferably by means of a single test button.

Means shall be provided for isolating all supplies to the starting panel either by an isolating switch or by withdrawable fuses.

When the set is stopped other than under lock-out conditions, it shall be self-resetting ready for the next start.

The set shall be suitable for starting by manual means. e.g. by cranking or direct operation of the starter solenoid.

All switches and push buttons shall be clearly marked to indicate their function.

It shall be possible to operate the ‘Start’ and ‘Stop’ buttons and to see the ‘Set Failure’ indications without opening the panel doors.

9.3.2 Automatic Changeover Controls

The controls shall be installed and wired in the machine control panel.
The control shall be provided such that on failure of the normal electricity supply, it will automatically initiate the starting of and effect the transfer of load to the standby generator. The schematic for the controls shall be approved by the Electrical Engineer before manufacture commences.

Where failure of the normal supply is referred to, it shall be defined as follows:

(a) Complete loss of voltage in one line 0r in all the three lines

b) Falling of voltage below 85% of the normal voltage between two lines or line and neutral

(c) Voltage overshoot to 110% of the normal voltage between two lines or line and neutral

d) Incorrect phase sequence

On failure of the normal supply, the unit shall operate in the following manner:

(a) After a delay, adjustable from 0 to 15 seconds (to avoid operation by a transient dip in voltage) a signal shall be given to start the standby generating set.

(b) On receipt of a signal from the standby generating set that it is ready to take load, and providing that the failure of the normal supply still persists, the normal supply contactor in the control panel shall open and the standby contactor shall close. If the normal supply has been restored before the changeover has taken place, the contactor shall not operate and the starting relay contacts shall open to initiate the shutting down of the standby generating set.

When the standby supply is in operation and the normal supply is restored and remains within 10% of rated voltage on all phases for a pre-set time (adjustable up to 120 second) the standby contactor shall open and the normal supply contactor shall close; the starting relay contacts shall then open to shut down the generating set.

Provision shall be made so that automatic return to normal supply can be prevented if required.

Once a start signal has been sent to standby generating set, the engine starting sequence shall be allowed to continue until the set is ready to take the load before a stopping signal is sent.

A push button labelled ‘Test’ shall be provided to enable a failure of normal supply to be simulated. If the button is pressed and released the equipment shall complete the starting sequence, and when the set is ready to take load it shall be shut down. If the button is held depressed the equipment shall change over to the standby supply when the set is ready to take load.

Indicating lamps or illuminated panels shall be provided on the front of the panel. They shall be appropriately labelled, easily visible and shall give the following information:

‘Main Supply Available’
‘Generator Supply Available’
‘Mains Supply on load’
‘Generator Supply on load’

9.4 Lock out

9.4.1 General

The set shall stop and lock out to prevent further starting when:

a) It fails to start when the electric starter motor has been in operation for 20 seconds under automatic start condition.

b) The lubricating oil pressure falls to a value at which it would be unsafe to continue running the engine.

c) The cooling water does not flow, when the engine is fitted with a visible flow indicator on the cooling water system.

d) (i) In water cooled engines the cooling water temperature exceeds a predetermined limit.

(ii) In air cooled engines the cylinder head temperature exceeds a safe maximum.

e) The overspeed trip has operated.

9.4.2 Failure of the circuits concerned in sub-section 9.4.1 (b) to 9.4.1(e) shall cause a set to shut down. Reset of lock out shall be by hand.

9.5 Fault indication

Each lock-out detailed in section 9.4.1 shall be indicated by a lamp on the panel together with an indication of the fault causing the shut-down. The fault warning lights shall be set to operate before the lock-out.

9.6 Starting Battery and Charger

The battery shall be 24 volts and capable of with-standing the loads imposed upon it by its specified duties. It may be of lead-acid or alkaline type and shall be of sufficient capacity for four starts in succession once in an eight-hour period. Auxiliary circuits connected to the battery shall be protected by fuses.

The battery shall be used to supply an automatic starting and control equipment, and relay operation shall not be impaired when the battery is supplying current to the starter motor.

A single phase supply for battery charging shall be available from the main M.V SWITCHBOARD.

A charger shall be provided which will recharge the battery after engine starting and maintain it in a charged condition when the set is standing or is in service. It may also supply the load of any automatic starting and control equipments, and an additional load up to 24 watts when the set is running and in service.

An alternative quick charge rate shall be provided. The charger shall be fitted with an ammeter to measure the charger and discharge current excluding the starter motor current.

9.7 Wiring and Earthing

Power cables and small wiring cables interconnecting major components shall be of the heat and oil resistant type and shall be metal sheathed or run in metal ducts or metal conduit, which shall be coded and terminated with lugs or eyes or to be soldered, the terminations shall be clearly marked with the numbers and letters of the terminals to which they are connected. Terminals shall be numbered or lettered, easily accessible and fitted with individual insulating barriers or adequately spaced. Barriers shall be fitted to separate control terminals from power wiring terminals.

All metal work housing electrical equipment shall be bonded to a brass earthing terminal and connected to station Earth and as detailed in the schedule.

9.8 Contactors

Contactors shall have magnetic circuits designed for a.c or d.c operation and shall be rated in accordance with ks 04-182:1982.Four pole- contactors shall be fitted for three phase-equipment and two-pole contactors for single phase equipments. Main and auxiliary contacts shall be silver faced or better.

9.9 Relays

Relays shall preferably be of sealed type mounted in approved plug-in bias with spring loaded retainers but if this is not practicable they shall be mounted on individual sub-bases and wired so that easy access is obtained to soldered connections. Unsealed relays shall be enclosed in individual or common dust protecting cases.

Time delays, if of the pneumatic type, shall operate on filtered air. The thermal type of time delay relay will not be accepted.

9.10 Fuses

Fuses shall comply with KS-183:1978. A spare fuse cartridge for each pole shall be mounted inside each equipment.

9.11 Rectifiers, Capacitors and solid State components

Rectifiers, capacitors and solid state components shall be suitable for any transient voltage and high currents likely to be uncounted during the operation of the equipment and for the internal operating temperature of the enclosures at the specified maximum external ambient temperature.

9.12 Enclosures for Equipment

Enclosures for electrical and control equipment shall be drip proof and dust protecting, with adequate front and rear access as necessary for maintenance and repair. Special attention shall be given to the method of construction and to the mounting of the components to minimize the effect of vibration. Diagrams of connections in durable form shall be mounted inside the enclosures.

10 Lifting Gear and Handling.

Provision shall be made for ready handling of all parts of the plant during assembly or disassembly of the unit. Adequate provision shall be made for attaching lifting devices, slings and eyebolts.

11 Commissioning

The Contractor shall include for fully commissioning the set and its control equipment and for the purpose of the required tests, shall provide all necessary instrument s, tools, fuel and lubricating oil.

The following tests and checks as applicable shall be carried out by the contractor in the presence of the electrical engineer or his representative.

a) Check that the main frame is level in all directions, engine and generator shafts are in proper alignment and the vibration absorbing devices are properly installed and located.

b) Check water and sump oil levels and that the water jacket and radiation heaters (if fitted) are in working order.

c) Check the battery electrolyte levels and the specific gravity.

d) Examine the containers in which the fuel and lubricating oils were delivered and check that the type and grade of oils are as recommended for the unit.

e) Ensure that sufficient fuel oil is in the fuel tank for a two hours test run.

g) Check engine bolts, main drive coupling, valve clearance, fuel pumps settings, governor settings, pipeline connections, water hose, exhaust couplings, flexible pipe work etc, and where a separate cooling water tank is fitted, that the water levels is satisfactory and the ball valve and overflow work.

h) Check all outgoing connections on the generator and the control panel. All lugs for principal connections shall have clean and bright contact surfaces. A suitable abrasive shall be used where necessary.

i) Check access panels and doors for proper opening and closing and for functioning of any interlocks fitted.

j) With the set isolated from the main supply and the selector switch in the ‘manual’ position, start the engine by means of the ‘start’ push button and allow it to run up to normal speed. Check that the main battery charger is automatically switched off to avoid its being overloaded by the reduction in voltage across the battery. Where a battery charging dynamo is fitted, check that the main battery charger is disconnected by the operation of the auxiliary contact during the time the engine is running.

k) Check instruments and gauges for normal operation and response and that the generator voltage is being maintained within the prescribed limits, making due allowance for no-load conditions. Compare the reading of the frequency meter with that of engine tachometer, where both are fitted

i) Stop engine by turning selector switch to off position and verify that the generator contactor opens at between 95% and 85% of normal voltage. Re-check water and oil levels.

m) Turn selector switch to ‘Auto’ position. Disconnect the sensing circuit supply and check that the set starts, the mains contactor opens, and the generator contactor closes in correct order. Reconnect the sensing circuit to verify that the engine stops on restoration of the mains supply and the contactors operate correctly. Check voltage sensing and time delays on each phase in turn and also the push buttons for mains failure simulation and engine stopping operate correctly.

NOTE: Running of the engine for any length of time under no load condition is undesirable and tests calling for such operation should be carried out in as short time as possible consistent with thoroughness.

n) Operate the necessary isolators and switches to put the set on standby for essential services network with the mains failure simulation push, verify that the set operates correctly with the appropriate time delay for taking up load and that the carrying of the load and its distribution over three phases are satisfactory.

o) Run the set at various loads for periods totaling at least 30 minutes. Check that the voltage and frequency are being maintained within the required limits with large alterations of load. Note the rate of charge on the dynamo ammeter with the engine running (if a dynamo is fitted), and the rate of charge on the battery charging ammeter with the engine stopped. Check against manufacturers recommendations and adjust charging rates if necessary.

p) Check that the various engine safeguards operate satisfactorily.

q) Check the vibration absorbing devices for proper operation and that performance of all flexible connections, both mechanical and electrical, is satisfactory.

r) When all tests are satisfactory and agreed with the Engineer or his representative, the lubricating oil and water levels shall be finally checked, the fuel oil tank replenished and set left in normal operating order.

s) An initial supply of all lubricating oils and greases shall be provided by the Contractor.

t) Additional lubricating oil shall be provided for recharging the engine sump once together with a supply of lubricating oils and greases to cover the normal use and serving of the set during the 12 months maintenance period referred to in Part 14 of Section D.

PART 4 (B) - INFORMATION TO BE SUPPLIED BY THE TENDERER

DESCRIPTION

1. General

2. Information on the set to be supplied

3. Deviations from the specifications

1. GENERAL

a) The tenderer shall complete the next Page in full with details of the set he is offering.

b) Any equipment which he wishes to offer but which does not comply with the specification shall be fully detailed in Part 3 of section F together with details of any other deviation or omissions which he may wish to make.

Any tender which is submitted without filling these sections will be deemed non responsive.

c) The tenderers shall be required to submit, together with their tenders, brochures detailing technical specifications of the generator set they intend to supply. Any tender which is submitted without the brochures will be deemed non-responsive.

2 – INFORMATION OF THE SET TO BE SUPPLIED

ITEM	EQUIPMENT	DETAILS
1.	**Diesel Engine**	
	Make	.....
	Type	.....
	Net continuous rating (B.S.649)	
	(a) at sea level	.....KVA
	(b) at site	.....KVA
	Speed	.....Rev/min
	Supercharger	
	Make	.....
	Type	.....
	Air cooling	Not Applicable
	Quantity of air required	
	Details of ducting	
	Water cooling	To be Applicable
	Details of water cooling circuits	
	Radiator:	
	Make	.....
	Type	.....
	Length	.....mm
	Breadth	.....mm
	Height	.....mm

ITEM	EQUIPMENT	DETAILS
	Aspiration Method	
	Quantity of air required	.....
2.	**Auxiliaries**	.....
	Filters Coolers Primary pumps Tachometer and drive Governor Special cold start devices Running hours meter Safety devices High temperature Low pressure (lubricating oil) Cooling water flow trip over speed trip Speed sensing devices Lubricating oil thermometers: Number Position (s) Water thermometer Position Exhaust thermometer Position Starting Battery Battery charger Immersion Heater	
3.	**Lubrication**	
	Recommended oil (s)	
	Sump	
	Elsewhere (state where)	
4.	**Alternator and Exciter**	
	Make and type	
	Bearings	
	Insulation class (BS.2757)	.....
		Grade quantity (litres)

/ITEM	EQUIPMENT	DETAILS
5.	**Electrical Control Panel**	
	Main circuit breaker	.....Amps
	Bypass switches	.....Amps
	Automatic changeover contactor	.....Amps
	Automatic voltage regulator	.....Volts
	Ammeter selector switch	.....
	Voltmeter selector switch	.....
	Frequency meter	.....Hertz
	Ammeters –------ No.	.....Amps
	Voltmeters –.....No.	.....Volts
	Power factor meter	.....KVAR
	Other equipment – give details	.....
6.	**Performance data**	Rated output % / Consumption (Litres/hour)
	Fuel consumption	110 .....
		100 .....
		75 .....
		50 .....
	Maximum output	Ambient temperature. ^{0}C / Out-put KVA
		40 .....
		30 .....
		20 .....
		10

ITEM	EQUIPMENT	DETAILS
6.	Performance Data (cont'd)	
	Voltage regulation	……..%
	Frequency regulation	……..%
	Time to accept 75% full load from 5^0C	……Seconds
	Time to accept 100% full load from 5^0C	……Seconds
	Time to accept 100% full load from 40^0C	……Seconds
7.	**Physical Details**	
	Auxiliary fuel storage tank for 72 hour operational running capacity	……..Litres
	Size of set	mm long……mm wide……. mm high……
	Total weight of set	……..Kg.
	Overall dimensions of set	mm long…….mm wide……. mm high……
	Weight of heaviest component	……..Kg.
	Weather proofing	
	Integral belly/base fuel tank for daily service for 8 hour operation capacity	……. Litres
8.	**Operational Details**	
	Description of Operation Sequence of the automatic control	
	Details of drawings, literature, etc., included with tender.	

3.0 BROCHURES AND TECHNICAL LITERATURE

Tenderers must enclose together with their submitted bids brochures detailing technical Literature and specifications of the active components of the access control system. The brochures shall be used to evaluate the suitability of these components. Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified.

SECTION E

SCHEDULE OF UNIT RATES

SCHEDULE OF UNIT RATES

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

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

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

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

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

6. Any bid returned with unfilled Schedule of Unit Rates shall be considered technically non- responsive, and the bidder shall automatically be disqualified.

SCHEDULE OF UNIT RATES
(MUST be completed by the Tenderer)

NO	DESCRIPTION	QTY	UNIT	UNIT RATE KSHS
1	**Air Circuit Breakers**			
	a) 2000A TP	1	No	
	b) 1600A TP	1	No	
	c) 1250A TP	1	No	
	d) 800A TP	1	No	
2	**Moulded Case Circuit Breakers**			
	a) 630A TP	1	No	
	b) 500 A TP	1	No	
	c) 315A TP	1	No	
	d) 250A TP	1	No	
3	**HG Stainless steel Conduits**			
	a) 38mm	1	No	
	b) 50mm	1	No	
4	IP 66 **200** watts high bay LED lights complete with drivers, plastic housing and fixing accessories	1	No	
5	IP 66, 400W LED Corrosion Proof floodlight, As Phillips/ Leadvance or approved equivalent	1	No	

ICT

1.	12 port edge switch POE capabilities	No.	1	
2.	Single port Cat 6A angled Faceplate	No	1	
3.	5KVA UPS	No	1	
4.	12U Wall Mounted cabinet	No.	1	
5.	12 port CAT6A data patch panel	No.	1	
6.	CAT6A SFTP Cable as Siemon	No.	1	
7.	CAT 6A STP 4-Pair Cable	No.	1	
8	12 Channel NVR 10TB, 128Mbps	No.	1	
9	32" LED monitors/display	No	1	

SECTION F

BILLS OF QUANTITIES

BILLS OF QUANTITIES

A) PRICING OF PRELIMINARIES ITEMS.

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

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

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

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

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

B) NOTES FOR BILLS OF QUANTITIES

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

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

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

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

   Should the sub-contractor install any material not specified here in before receiving **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**.

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

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

PROPOSED COMPLETION OF FRESH AND FROZEN FISH PROCESSING SECTION AT LIWATONI COMPLEX, MOMBASA COUNTY
ELECTRICAL INSTALLATION WORKS

Preliminaries

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
1	Discrepancies clause 1.02				
2	Conditions of sub-contract Agreement clause 1.03				
3	Payments clause1.04				
4	Site location clause 1.06				
5	Scope of Contract Works clause 1.08				
6	Extent of the Contractor's Duties clause 1.09				
7	Firm price contract clause 1.12				
8	Variation clause 1.13				
9	Prime cost and provisional sum clause 3.14 (insert profit and attendance which is a percentage of expended PC or provisional sum.)				
10	Bond clause 1.15				
11	Government Legislation and Regulations clause 1.16				
12	Import Duty and Value Added Tax clause 1.17(Note this clause applies for materials supplied only. VAT will also be paid by the sub-contractor as allowed in the summary page)				
13	Insurance company Fees clause 1.18				
14	Provision of services by the Main contractor clause 1.19				
15	Samples and Materials Generally clause 1.21				
	SUB-TOTAL CARRIED TO PAGE H/P-5				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
16	Supplies clause 1.20				
17	Bills of Quantities clause 1.23 Contractor's Office in Kenya clause 1.24				
18	Builder's Work clause 1.25				
19	Setting to work and Regulating system clause 1.29				
20	Identification of plant components clause 1.30				
21	Working Drawings clause 1.32				
22	Record Drawings(As Installed) and Instructions clause 1.33				
23	Maintenance Manual clause 1.34				
24	Hand over clause 1.35				
25	Painting clause 1.36				
26	Testing and Inspection – manufactured plant clause 1.38				
27	Testing and Inspection – Installation clause 1.39				
	Storage of Materials clause 1.41				
	Initial Maintenance clause 1.42				
	SUB-TOTAL CARRIED TO PAGE H/P-5				

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
29	Local and other Authorities notices and fees clause 1.60				
30	Temporary Works clause 1.63				
31	Patent Rights clause 1.64				
32	Mobilization and Demobilization Clause 1.65				
33	Extended Preliminaries Clause 1.66 (see Appendix - clause 1.70)				
34	Supervision by Engineer and Site Meetings Clause 1.67	1	Item	100,000	100,000.00
35	Allow for profit and Attendance for the above				
36	Amendment to Scope of Sub-contract Works Clause 1.68				
37	Contractor obligation and Employers Obligation clause 1.69.				
	Sub-total above				
	Sub-total brought forward from page H/P-3 **Sub-total brought forward from page H/P-4**				
	TOTAL FOR SCHEDULE No. 1- PRELIMINARIES- CARRIED FORWARDTO PRICE SUMMARY PAGE				

ELECTRICAL INSTALLATION WORKS

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	ALL Electrical items/fittings MUST be HACCP Compliant, NSF Food Grade i.e compliant to food safety standards (NSF) and rated for SALINE ENVIRONMENT /made from corrossion resistant materials.				
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS AND SWITCHES				
1.01a	Lighting points wired in 3 x 2.5mm^2 PVC/SC CU cables drawn in 20mmØ surface mounted HG/PVC conduits complete with all necessary accessories but excluding switches for:-				
	i) One way switching	10	No.		
	ii) Two way switching	7	No.		
1.01b	As above but wired in 3 x 1.5mm^2 PVC/SC CU cables for:-				
	i) One way switching	15	No.		
	ii) Two way switching	6	No.		
1.01c	Lighting points wired in 3-core x 1.5 sq. mm flexible cables drops to lighting points complete with connectors and other accessories as necessary	38	No.		
1.02a	10A, moulded plastic ivory white switch plates as MK or approved equivalent as follows:-				
	i) One gang two way	7	No.		
	ii) Two gang two way	6	No.		
	iii) Three gang two way	2	No.		
	iv) Four gang two way	3	No.		
1.02c	10A, water prroof switch plates as MK Range or approved equivalent as follows:-				
	i) One gang two way	2	No.		
	ii) Two gang two way	2	No.		
	iii) Three gang two way	2	No.		
	iv) Four gang two way	1	No.		
1.02d	Ceiling mounted PIR Occupany switch (Presence / lux level detector as Schnider or Approved Equivalent:(Busch watchdog presence detector for ceiling mounting)	6	No.		
	Total carried to Collection Page				

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
1.03	Lighting fittings complete with lamps of appropriate wattage and colour rendering and fixing materials as follows:-				
	(a) **Type B1** - IP 66 1200mm, 2x18 watts LED lamps complete with polycarbonate diffusser, drivers, plastic housing and fixing accessories	30	No		
	(b) **Type B2** - IP 65 1200mm, 2x18 watts LED lamps complete with polycarbonate diffusser, drivers, plastic housing and fixing accessories	18	No		
	(c) **Type D1** - IP 65 recessed / surface mounted downlighter complete with 24 LED lamps complete with drivers, plastic housing and fixing accessories	34	No		
	(d) **Type FL** - IP 66, 250W LED Corrosion Proof floodlight, As Phillips/Leadvance or approved equivalent	10	No		
	(e) **Type HB** - IP 66 100 watts high bay LED lights complete with drivers, plastic housing and fixing accessories	4	No		
	(f) **Type G** - IP 65 Shallow surface luminaire with circular opal diffuser and white stand-off ring, with 18W LED lamp. As Thorn Oyster 65 Round or Approved Equivalent	6	No		
	(g) **Type M** - Emergency square surface luminaire with opal diffuser and white polycarbonate body with rechargeable battery, LED control gear for 28W As Thorn or Approved Equivalent	8	No		
1.04	Self-contained single sided EXIT sign with 8W fluorescent lamp for non-maintained emergency lighting for 3 hour duration as Thorn EF X3 or approved equivalent.	10	No.		
	POWER POINTS				
1.05	Raw power socket outlet power points comprising wiring in 3 x 2.5mm^2 PVC/SC CU cables drawn in 25mmØ concealed HG PVC conduits/trunking including all conduit accessories but excluding plates	25	No.		
1.06	13A moulded switched socket outlet plates as MK or approved equivalent as follows:				
	i) Single switched	1	No.		
	ii) Twin switched	14	No.		
1.07	13A,WATERPROOF moulded ivory white switched socket outlet plates as MK or approved equivalent as follows:				
	i) Single switched	2	No.		
	ii) Twin switched	8	No.		
	Total carried to Collection Page				

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
1.08	Power points comprising wiring in 3 x 2.5mm^2 PVC/SC/CU cables drawn in 25mmØ concealed HG PVC conduits complete with all necessary accessories **(Avg. cable run of 15m)**	4	No.		
1.09	As above but wired in 3 x 4.0mm^2 PVC/SC/CU cables	4	No.		
1.10	As above but wired in 3 x 6.0mm^2 PVC/SC/CU cables	3	No.		
1.11	As above but wired in 3 x 10.0mm^2 PVC/SC/CU cables	2	No.		
1.12	Power points comprising wiring in 5 x 2.5mm^2 PVC/SC/CU cables drawn in 25mmØ concealed HG PVC conduits complete with all necessary accessories **(Avg. cable run of 10m)**	3	No.		
1.13	As above but wired in 5 x 4.0mm^2 PVC/SC/CU cables	3	No.		
1.14	As above but wired in 5 x 6.0mm^2 PVC/SC/CU cables	4	No.		
1.15	Power points comprising wiring in 3core 2.5mm^2 PVC insulated Cu. cables drawn in 32mmØ concealed HG PVC conduits complete with all necessary accessories **(Avg. cable run of 15m)**	5	No.		
1.16	As above but wired in 3core 4.0mm^2 PVC insulated Cu. cables	3	No.		
1.17	As above but wired in 3core 6mm^2 PVC insulated Cu. cables	4	No.		
1.18	Power points comprising wiring in 5core 2.5mm^2 PVC insulated Cu. cables drawn in 32mmØ concealed HG PVC conduits complete with all necessary accessories (Avg. cable run of 10m)	5	No.		
1.19	As above but wired in 5core 4.0mm^2 PVC insulated Cu. cables	4	No.		
1.20	As above but wired in 5core 6.0mm^2 PVC insulated Cu. cables	5	No.		
1.21	20A, DP control switch with neon light and cord outlet for item above as MK or approved equivalent	6	No.		
1.22	20A, Fan speed control faceplate with rotary knob and cord outlet for item above as PANASONIC or approved equivalent	10	No.		
1.23	20A, unswitched fused spur DP control switch with neon light and cord outlet for item above as MK or approved equivalent	2	No.		
1.24	20 - 32A SPN, 50Hz moulded isolator c/w waterproof housing for item above as Legrand or approved equivalent	5	No.		
Total carried to Collection Page					

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
1.25	25-45A TPN, 50Hz moulded isolator c/w waterproof housing for item above labelled "As per application" as Legrand or approved equivalent	5	No.		
1.26	16-32A 3 Pin Watertight Industrial Schuko socket outlets labelled "As per application" as Legrand or approved equivalent	8	No.		
1.27	16-32A 5 Pin Watertight Industrial Schuko socket outlets labelled "As per application" as Legrand or approved equivalent	6	No.		
	FIRE ALARM SYSTEM				
1.26	Fire Alarm points comprising wiring in 1.5mm^2 heat resistant cables drawn in 20mmØ concealed HG PVC conduits	68	No.		
1.27	Addressable Photoelectric Smoke Detector as Menvier or Approved Equivalent	50	No.		
1.28	Addressable Rate of Rise Heat Detector as Menvier or Approved equivalent	5	No.		
1.29	Addressable Manual Fire Alarm 'Break Glass' call points as MENVIER or approved equivalent.	6	No.		
1.30	Addressable Electronic Fire Alarm sounder complete with Red Flashing beacon as MENVIER or approved equivalent.	4	No.		
1.31	Microprocessor based Addressable Fire Alarm Repeater Panel as Menvier or Approved Equivalent	2	No.		
1.32	Microprocessor based 4-Loop Addressable Fire Alarm control Panel as Menvier or Approved Equivalent	1	No.		
Total carried to Collection Page					

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	DATA/TELEPHONE/TELEVISION & ACCESS CONTROL				
1.33	200 X 50mm - 2 compartment, High Grade PVC trunking complete with bends, outlet plates and other necessary accessories as Marshall Tufflex, REHAU or equivalent and approved	250	LM		
1.33	75 X 50mm - PVC trunking complete with bends, outlet plates and other necessary accessories as Marshall Tufflex, REHAU or equivalent and approved	200	LM		
1.55	25 X 25mm mini - PVC trunking complete with bends As Manufactured by Power Technics	100	Lm		
1.34	Data/Telephone outlet points comprising 25mmØ concealed HG PVC conduits complete with draw wire.	10	No.		
1.36	300x300x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories	10	No		
1.37	C.C.T.V points comprising draw wire in concealed 20mm Ø HG PVC Conduits all emanating from the server room/security office	20	No.		
1.38	Access control points comprising draw wire in concealed 20mm Ø HG PVC Conduits all emanating from the server room/security office	10	No.		
1.39	2x50mmØ PVC HG conduit linking the Draw Boxes	600	LM		
	Total carried to Collection Page				

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
	POWER DISTRIBUTION				
	Supply, Install, Test and Commission the following Distribution Boards as Eaton or approved equivalent				
	RAW POWER DISTRIBUTION BOARDS				
1.50	150A, 8 to 12-Way, TPN DB surface/flush mounted as EATON or approved equivalent	3	No.		
1.51	100A, 4 to 6-Way, TPN DB surface/flush mounted as EATON or approved	2	No.		
1.51	100A, 4 to 6-Way, SPN CU surface/flush mounted as EATON or approved	2	No.		
1.52	SP Miniature circuit breakers for the distribution boards above				
	i) 10A SP MCB	12	No.		
	ii) 20A SP MCB	10	No.		
	iii) 30A SP MCB	7	No.		
	iv) 25A TP MCB	9	No.		
	v) 45A SP MCB	2	No.		
	vi) 45A TP MCB	5	No.		
	vi) 63A TP MCB	4	No.		
	vii) TP blanking plates	8	No.		
	SUB-MAINS & FEEDER CABLES				
1.53	25 mm^2 4-C PVC/SWA/PVC copper cable to DB above c/w approriate cable lugs **(Provisional qunatity - Actual length to be confirmed on site)**	1	Lm		
	i) Cable glands for above cable	1	No.		
1.54	300 x 50mm 16 SWG stainless steel sheet metal cable tray complete with anchor bolts, tees, bends and all fixing accessories	800	LM		
1.54	100 x 50mm 16 SWG stainless steel sheet metal cable tray complete with anchor bolts, tees, bends and all fixing accessories	520	LM		
1.55	50 x 50mm 16SWG stainless steel **mesh type** cable tray complete with anchor bolts, tees, bends and all fixing accessories	400	LM		
1.55	75 x 50mm 16SWG stainless steel **mesh type** cable tray complete with anchor bolts, tees, bends and all fixing accessories	100	LM		
1.56	300x300x75mm recessed galvanised sheet steel draw boxes compete with powder coated cover and all other necessary accessories	10	No.		
1.57	Allow for labelling the distribution boards under this section including all the incoming and outgoing circuits as per the specifications to Engineer's approval.	2	Item		
1.59	Complete Earthing and bonding to the installations to IEE regulations	1	Item		
	Total carried to Collection Page				

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
1.00	**POWER DISTRIBUTION CABLES**				
	SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION THE FOLLOWING:-				
	Provisional quantity - Actual length to be confirmed on site				
1.20	240mm^2 4-C XLPE/SWA/PVC copper cable drawn in cable tray / duct c/w approriate cable lugs as ***East African Cable*** *(EAC)* or approved equivalent	1	Lm		
	a) Cable gland a for above cable	1	No.		
1.21	As "detto" but 185mm^2	600	Lm		
	a) Cable gland for above cable	2	No.		
1.22	As "detto" but 150mm^2	1	Lm		
	a) Cable gland for above cable	1	No.		
1.23	As "detto" but 95mm^2	1	Lm		
	a) Cable gland for above cable	1	No.		
1.23	As "detto" but 70mm^2	270	Lm		
	a) Cable gland for above cable	1	No.		
1.24	As "detto" but 50mm^2	230	Lm		
	a) Cable gland for above cable	1	No.		
1.24	As "detto" but 35mm^2	210	Lm		
	a) Cable gland for above cable	1	No.		
1.24	As "detto" but 25mm^2	240	Lm		
	a) Cable gland for above cable	1	No.		
1.24	As "detto" but 16mm^2	105	Lm		
	a) Cable gland for above cable	1	No.		
	Total carried to Collection Page				

Item	Description	Qty	Unit	Rate Kshs	Cost Kshs
1.00	**DUCTING** **Supply and lay the following uPVC ducts c/w necessary accessories at 600mm below ground level across drive ways and concrete areas, to Engineer's approval**				
1.10	100mm uPVC duct	400	LM		
1.20	200mm uPVC duct	500	LM		
2.00	**TRENCHING**				
2.20	Trenching at an average depth of 750 mm laying, back filling of trenches, and laying of "DANGER-HATARI " cable tiling (for cable running along non-concrete areas), reinstatement and making of good of ground as directed by the Engineer on site	200	M		
2.20	Interlocking concrete tiles marked DANGER-HATARI	100	No		
2.20	Cable route markers marked DANGER-HATARI to approval	50	No		
3.00	**MANHOLES**				
3.10	PMH A-1500 x 1200 x 600 mm deep manhole with conrete metal cover to engineer's approval	5	No		
3.20	PMH B-1200 x 1200 x 600 mm deep manhole with conrete metal cover to engineer's approval	4	No		
3.30	PMH B-900 x 900 x 600 mm deep manhole with conrete metal cover to engineer's approval	7	No		
3.40	PMH C-600 x 450 x 450 mm deep manhole with conrete metal cover to engineer's approval	2	No		
	Total carried to Collection Page				

ITEM	DESCRIPTION	QTY	UNIT	RATE (Kshs)	COST (Kshs)
A	**LOW VOLTAGE MAIN SWITCH-BOARD AND SUB-BOARDS SYSTEM** **(Bidders to visit site during pretender site meeting to establish the extent of works done and existing componets on site to be incorporated so as to determined the quotations for these Panel boards)**				
A1	Supply, install, test and commission fully front access metal clad IP 42 low voltage switchboard LV "MS", 3 -phase, 5000Amps 4 poles copper busbars, 4500Amps motorised ACB mains incomer, 415V / 240V, 50 Hz, Form 4B, 65kA rms for one second, indoor, dustproof cubicle suitable for floor mounting complete with the following components: -2 No 4500A Adj. TP/N motorised ACB main incomer for manis and gen set complete with shunt trip unit; - 4500Amps automatic changeover switch complete with ATS/AMF units, mech/electrical interlock for incomers. - 1 No Power Logic meter; - 5000A TP/N copper bus bars with support brackets; - 1No - 315A, 35kA TP out going MCCBs; - 1No - 1600A, 35kA TP out going MCCBs; - 2No - 1250A, 35kA TP out going MCCBs; - 1No - 800A, 35kA TP out going MCCBs; - 1No - 80A, 35kA TP out going MCCBs; - 1No - 63A, 35kA TP out going MCCBs; - 1No - 250A, 35kA TP out going MCCBs; - 1No - 630A, 35kA TP out going MCCBs; - 4No - 400A, 35kA TP out going MCCBs; - 6No TP and 3No.SP spare ways; - Earth bar (appropriately sized); - 2 Set 4500/5A current transformers; - 1 Set Red / Yellow / Blue phase LED indicators; - 1No 400V surge protector complete with 100Amps HRC fuse; - Firemans switch including interwiring with the main main incommer. - all necessary interconnecting cables; - all other necessary accessories not described above.	1	Item		
A1.1	1250kVAR, 12 steps automatic power factor correction capacitor bank complete with associated controls;	1	Item		
A1.2	Modular type 2,000kVA Automatic voltage stabilizer as **ORTEA** manufacture and complete with interconnection cables	1	Item		
A1.3	Allow for labelling the switch board under this section including all the incoming and outgoing circuits as per specifications	1	Item		
A1.4	50x10mm compensation of potential main earth copper bar with porcelain insulators and provisions for connections to water pipes, cooking gas system, lightning protection system, main power switching panel, UPS and other utilities	1	Item		
A1.5	Supply and install earthing arrangements for the low voltage switchboard under this section comprising 25x3mm copper tape lead, 1800mm long x 15mm diameter copper earth electrode as ***Furse*** or approved equivalent complete with driving stud and tape to rod clamp, 300mm x 300mm x 300mm deep concrete inspection earth pit with removable waterproof cover, 900mm x 900mm copper earth mat, soil conditioning agents comprising (marconite and bentonite) charcoal necessary to to achieve earthing value below 10-Ohms and all other necessary accessories as per the requirements of the technical specifications. Rate to include excavation and backfilling of 750mm x750mmx2000mm deep pit for the items described above	1	Item		
	SUB-TOTAL CARRIED FORWARD TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE (Kshs)	COST (Kshs)
	TOTAL FROM ABOVE B/F				
A/7	Supply, install, test and commission fully front access metal clad IP 32 low voltage sub-board "SB2", 3 -phase, 1000Amps 4 poles copper busbars, 800Amps MCCB mains incomer, 415V / 240V, 50 Hz, Form 3B, 35kA rms for one second, indoor, dustproof cubicle suitable for floor mounting complete with the following components: -1 No 800A TP/N main incomer isolator; - 1000A TP/N copper bus bars with support brackets; - Earth bar (appropriately sized); - 2No - 80A, 22kA TP out going MCCB; - 3No - 20A, 22kA TP out going MCCB; - 1No - 200A, 22kA TP out going MCCB; - 12No - 32A, 22kA TP out going MCCB; - 2No SP spare ways; - 2No TP spare ways; - 1 Set 800/5A current transformers with 0-1000Amps ammeter; - 1 Set Red / Yellow / Blue phase LED indicators; - 1No 0-600V voltmeter with suitable 5A fuse switch; - 1No 0-100A ammeter with suitable current transformer as per drawing - all necessary interconnecting cables; - all other necessary accessories not described above.	1	Item		
A/8	Supply, install, test and commission 185 sq.mm PVC /SWA/ PVC 4-core copper cable complete with brass compression glands, PVC shroud, cable lugs and any other necessary accessories from the main low voltage switch board LV "MS" located in the main switch room	210	LM		
	SUB-TOTAL CARRIED FORWARD TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE (Kshs)	COST (Kshs)
	TOTAL FROM ABOVE B/F				
A/9	Supply, install, test and commission fully front access metal clad IP 32 low voltage sub-board "SB5", 3 -phase, 315Amps 4 poles copper busbars, 250Amps MCCB mains incomer, 415V / 240V, 50 Hz, Form 3B, 35kA rms for one second, indoor, dustproof cubicle suitable for floor mounting complete with the following components: -1 No 250A TP/N main incomer isolator; - 315A TP/N copper bus bars with support brackets; - Earth bar (appropriately sized); - 2No - 10A, 22kA TP out going MCCB; - 4No - 32A, 22kA TP out going MCCB; - 1No - 125A, 22kA TP out going MCCB; - 2No SP spare ways; - 2No TP spare ways; - 1 Set 250/5A current transformers with 0-315Amps ammeter; - 1 Set Red / Yellow / Blue phase LED indicators; - 1No 0-600V voltmeter with suitable 5A fuse switch; - 1No 0-315A ammeter with suitable current transformer as per drawing - all necessary interconnecting cables; - all other necessary accessories not described above.	1	Item		
A/10	Supply, install, test and commission 1x95 sq.mm PVC /SWA/ PVC 4-core copper cable complete with brass compression glands, PVC shroud, cable lugs and any other necessary accessories from the main low voltage switch board LV "MS" located in the main switch room	10	LM		
A/9	Supply, install, test and commission fully front access metal clad IP 32 low voltage sub-board "SB8", 3 -phase, 750Amps 4 poles copper busbars, 630Amps MCCB mains incomer, 415V / 240V, 50 Hz, Form 3B, 35kA rms for one second, indoor, dustproof cubicle suitable for floor mounting complete with the following components: -1 No 630A Adj. TP/N main incomer MCCB - 750A TP/N copper bus bars with support brackets; - Earth bar (appropriately sized); - 21No - 20A, 22kA TP out going MCCB; - 5No - 250A, 35kA TP out going MCCBs; - 1No - 125A, 22kA TP out going MCCBs; - 1No - 100A, 22kA TP out going MCCBs; - 1No - 320A, 22kA TP out going MCCBs; - 4No TP spare ways; - 1 Set 250/5A current transformers with 0-315Amps ammeter; - 1 Set Red / Yellow / Blue phase LED indicators; - 1No 0-600V voltmeter with suitable 5A fuse switch; - 1No 0-315A ammeter with suitable current transformer as per drawing - all necessary interconnecting cables; - all other necessary accessories not described above.	1	Item		
A/10	Supply, install, test and commission 1x185 sq.mm PVC /SWA/ PVC 4-core copper cable complete with brass compression glands, PVC shroud, cable lugs and any other necessary accessories from the main low voltage switch board LV "MS" located in the main switch room	120	LM		
	SUB-TOTAL CARRIED FORWARD TO NEXT PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE (Kshs)	COST (Kshs)
	TOTAL FROM ABOVE B/F				
A/11	Supply, install, test and commission fully front access metal clad IP 32 low voltage Feeder Pillar "FP1", 3 -phase, 1500 Amps 4 poles copper busbars, 1200Amps motorised ACB mains incomer, 415V / 240V, 50 Hz, Form 3B, 35kA rms for one second, indoor, dustproof cubicle suitable for floor mounting complete with the following components: -1 No 1200A Adj. TP/N motorised ACB main incomer; - 1500A TP/N copper bus bars with support brackets; - Earth bar (appropriately sized); - 4No - 250A, 35kA TP out going MCCB; - 2No - 63A, 22kA TP out going MCCB; - 2No TP spare ways; - 1 Set 250/5A current transformers with 0-315Amps ammeter; - 1 Set Red / Yellow / Blue phase LED indicators; - 1No 0-600V voltmeter with suitable 5A fuse switch; - 1No 0-315A ammeter with suitable current transformer as per drawing - all necessary interconnecting cables; - all other necessary accessories not described above.	1	Item		
	Supply, install, test and commission 1x95 sq.mm PVC /SWA/ PVC 4-core copper cable complete with brass compression glands, PVC shroud, cable lugs and any other necessary accessories from the main low voltage switch board LV "MS" located in the main switch room	60	LM		
A/33	Supply and install earthing arrangements for the distribution panels above comprising 35 sqm copper cable lead, 1800mm long x 15mm diameter copper earth electrode as ***Furse*** or approved equivalent complete with driving stud and tape to rod clamp, 300mm x 300mm x 300mm deep concrete inspection earth pit with removable waterproof cover, 900mm x 900mm copper earth mat, soil conditioning agents comprising (marconite and bentonite) charcoal necessary to to achieve earthing value below 10-Ohms and all other necessary accessories as per the requirements of the technical specifications. Rate to include excavation and backfilling of 450mm x450mmx450mm deep pit for the items described above	5	Item		
A/59	Allow for liaison with Kenya Power and relocation and connection of the existing 2 No 1000kVA transformers to the new power room location through a safe relocation process as guided by Kenya Power Company.	1	Item		
A/59	Allow for disconnection, relocation and reconnection of all existing electrical serivices to be incoporated under phase 1 construction works	1	Item		
	SUB-TOTAL CARRIED FORWARD TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE (Kshs)	COST (Kshs)

COLLECTION PAGE

Item	Description	Cost Kshs
1	TOTAL B/F Page H/1……..	
2	TOTAL B/F Page H/2……..	
3	TOTAL B/F Page H/3……..	
4	TOTAL B/F Page H/4……..	
5	TOTAL B/F Page H/5……..	
6	TOTAL B/F Page H/6……..	
7	TOTAL B/F Page H/7……..	
8	TOTAL B/F Page H/8……..	
9	TOTAL B/F Page H/13……..	
	Total for Electrical Installation C/F to Summary Page	

GENERATOR INSTALLATION WORKS

BILL NO.2 SCHEDULE 1 - GENERATOR SET

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
1.1	Supply, deliver to site, install, test and commission a prime rated 1350KVA 3 phase, 415V, 50Hz diesel generating set with a continuous power factor of 0.8 lagging and as fully described in the particular specifications. The generator set is to be complete with a sound attenuated canopy and an integral base/belly daily service fuel tank with and operational running capacity of 8 hours.	1	No		
1.1	As above but open type without canopy **(Provide rate only)**	0	No		
1.2	Supply, deliver to site and install a steel exhaust pipe of not less than 14 SWG and of adequate diameter running from the generating set to the outside of the generator house	1	Item		
1.3	Connect the exhaust pipe above in item 1.2 using steel pipes of adequate diameter, and flexible piping off engine exhaust manifold complete with heavy duty silencer	1	Item		
1.4	Complete earthing of generating set to electrical engineer's approval (inclusive of manhole with watertight cover)	1	Item		
1.5	Allow for testing and commissioning the generating system installation using load bank capable of delivering full load (provide test certificate)	1	Item		
1.6	Install, test and commissioning of the existing on site 500KVA (new) and 200kVA (used) diesel generating sets.	1	No		
1.7	Appropriately rated synchronization panel for 1350KVA, 500KVA and (1350KVA to be procured in future)	1	No		
	SUB-TOTAL C/F TO PRICE SUMMARY PAGE				

BILL NO.2 SCHEDULE 2- AMF CONTROL PANEL

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	Supply, deliver to site, install, test and commission the following:				
2.1	An electrical control panel complete with suitable rated incoming MCCBs and contactors for automatic change over operation and complete with all other control accessories as fully described in clauses 9.3 to 9.10 of the particular specifications	1	No		
2.2	Suitably rated manual by-pass switch with clearly labeled **NORMAL-OFF-BYPASS** positions, **and shall such be wired that when the switch is on either OFF or BYPASS position, the generator shall receive no signal to start**	1	No.		
2.3	12 Volts battery as specified in clause 9.6 of the particular specifications	1	No.		
2.4	Armoured cables complete with glands and pvc sleeves:				
	(a) 185 mm sq. Single core XLPE/SWA/PVC copper cable	80	M		
	(b) 4.0mm2, 4 core, XLPE/SWA/PVC copper cable (2runs)	40	M		
2.7	Interwire the control panel with the Mains L.V board (installed by others)	1	Item		
	SUB-TOTAL C/F TO PRICE SUMMARY PAGE				

BILL NO. 2SCHEDULE 3- RECOMMENDED SPARE PARTS AND LUBRICATORS

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
	For the supply to the site of the following spare parts and lubricators:				
3.1	Oil Filters	4	No.		
3.2	Air Filters	4	No.		
3.3	Fuel Filters	4	No.		
3.4	Fuel injector nozzle to suit the set	4	No.		
3.5	Set of Fan belts to suit the set	1	No.		
3.6	10 litres container of sump oil of grade.....*	1	No.		
3.7	2 kilogram grease in a tin of grade .....*	1	No.		
3.8	10 litre plastic container of distilled water	1	No.		
3.9	20 litre of engine oil in a tin of grade.....*	1	No.		
3.1	Generator fuel. .....*	2000	Ltr		
3.1	Any other spare parts recommended by Tenderer **				
	*The tenderer to fill in the Grade quality to be supplied				
	**The tenderer to fill in the details and price of items but the price not to be included in total carried forward to summary page				
	SUB-TOTAL C/F TO PRICE SUMMARY PAGE				

BILL NO.2 SCHEDULE 4 -TOOLS TO BE SUPPLIED WITH THE SET

ITEM	DESCRIPTION	UNIT	QTY	RATE	KSHS
	For the supply to site of the following tools:				
4.1	Metal tool box with lock and two keys	No.	1		
4.2	Set of 8 No. Chrome vanadium ring spanners in sizes to suit the set	No.	1		
4.3	ditto but open ended spanners	No.	1		
4.4	Set of 3 screwdrivers, 75mm, 200mm and 300mm plus one	No.	1		
4.5	200mm Philips type	No.	1		
4.6	Set of feeler gauges	No.	1		
4.7	Grease gun to suit greasing points	No.	1		
4.8	Oil can, trigger type	No.	1		
	Any other special tools which the tenderer recommends should be purchased as an optional:*****				
	NOTE* Tenderer should give detail and prices of item 9 but the price not to be included in total carried forward.				
	SUB-TOTAL C/F TO PRICE SUMMARY PAGE				

BILL NO.2 SCHEDULE 5 – AUXILIARY FUEL TANK

ITEM	DESCRIPTION	QTY	UNIT	RATE	KSHS
5.1	Supply, deliver to site and install, to the approval of the project manager, and connect to the daily service base/belly fuel tank, an auxiliary fuel tank with level indicator and with an operational running capacity of 72 hours. The tank is to be of **stainless steel plate**s of minimum thickness of 3mm complete with stand and all interconnecting galvanised G.I pipe work.	1	No		
5.2	Supply, install, test and commission a 240 V ac fuel booster pump complete with a suitable rated motor DOL starter and all interconnecting accessories and G. I piping	1	Item		
	SUB-TOTAL C/F TO PRICE SUMMARY PAGE				

SUMMARY PAGE

Item	Description	Amount
1.0	Sub-Total for Bill No.2: Schedule 1 - Generator Set	
2.0	Sub-Total for Bill No.2: Schedule 2 - AMF Panel	
3.0	Sub-Total for Bill No.2: Schedule 3 - Recommended Spare Parts and Lubricators	
4.0	Sub-Total for Bill No.2: Schedule 4 - Tools to be Supplied with the Set	
5.0	Sub-Total for Bill No.2: Schedule 5 - Auxiliary Fuel Tank	
	SUB-TOTAL FOR GENERATOR C/F TO PRICE SUMMARY PAGE	

SCHEDULE No.1:- IP CCTV SYSTEM INSTALLATIONS

Item	Description	Qty	Unit	Rate	Kshs.
	Supply, Install, Test, integration and Commission the following as described in the specifications: The proposed equipment MUST be rates for SALINE ENVIRONMENT/made from corrossion resistant materials.				
1.01	Oudoor, IP POE, Vandal resistant Bullet camera as described in the technical specifications of this document and complete with housing, appropriate mounting brackets and all other accessories to engineers approval	10	No.		
1.02	As "detto" but Dome camera	8	No.		
1.03	Outdoor, IP POE Vandal resistant PTZ dome camera as described in the technical specifications of this document and complete all other accessories to engineers approval	5	No.		
1.05	1M RJ45-RJ45 Cat 6A UTP factory terminated patch cord as Siemons or approved equivalent to be used at work station.	23	No		
1.07	Cat 6A UTP 4-pair cable as Siemons or approved equivalent	1800	M		
1.08	24 Port Managed Gigabit Ethernet Switch with PoE plus (at least 600W) and 4 SFP Ports and modules as CISCO catalyst switch (*currently available in the market and being supported by Cisco*) or approved equivalent	1	No.		
1.11	65" LED HD panel display screens complete with necessary equipment, device and accessories	1	No.		
1.12	Operator workstation hardware/Desktop computer complete with software as described in particular specifications complete with necessary accessories	1	Item		
1.13	32Channels IP Network video recorder with PoE complete with minimum recording speed of 256mbps, minimum recording HDD 24TB, video management software, redundant power supply and all other accessories and as described in the particular specifications	1	No.		
1.18	Allow for providing operation & maintainance manuals and "as built" drawings after complete installation of the CCTV system (5 sets)	1	Item		
1.19	Any other items necessary to complete the above installation as per the system you propose to install. Please list the items, price and include in your totals a) b) c) d)	1	Lot		
	Total for SCHEDULE No.1:-CCTV C/F to Summary Page				

SCHEDULE No.2:- ACCESSS CONTROL SYSTEM INSTALLATION

Item	Description	Qty	Unit	Rate	Kshs.
	Supply, install, test and commission the following.				
4.01	Software module for access control with Time and attendance capabilities and with ability to be integrated with CCTV system and compatible with the access control system to be supplied	1	Item		
4.02	TCP/IP enabled Door input controller unit with twenty input and two output complete with power unit as described in particular specifications	1	No.		
4.03	Heavy duty 500Kg- Force magnetic door lock	5	No.		
4.04	IP67 RFID Card Reader, 125kHz & 13.56MHZ Card Reader, Wiegand Interface, 12-digit Keypad, as described in particular specifications	2	No.		
4.05	Multi-discipline biometric time and attendance reader (BMTA), Supports RS485 and TCP/IP. Supports both 125kHz & 13.56MHz, finger, card and pin authentication as Suprema BioStation 2 or equal and approved equivalent	3	No.		
4.06	A sturdy door exit button/switch	5	No.		
4.07	Access control door Power supply module/ units with battery and charger for Battery Backup as specified in particular specifications	1	No.		
4.08	Mortise door lock cylinder c/w non duplicatable keys for each door, capable of operating the lock when power is available or not	5	No.		
4.09	Emergency Break glasses	5	No.		
4.10	Biometric Finger Print & Cards Enrolment Reader/station	1	No.		
4.11	Heavy duty door-closers as UNION, YALE or approved equivalent	5	No.		
4.12	Smart card containing photograph of individual employees as specified in particular specifications	50	No.		
4.13	Laptop Core i7, 8GB Memory, 1TB HDD + 8GB SSD Storage, 15.6" Full HD 1080p Display, NVIDIA GeForce GTX 960M 4 GB GDDR5 as Dell Inspiron i7559 or approved equivalent	1	No.		
4.14	Cat 6 UTP 4-pair screened cable as Siemons pulled from the door controllers to the PoE switch	250	M		
4.15	Wire the entire access control system using 12 core 1.5mm² fire resistant cable.	250	M		
4.16	Allow for full graphic customization and programming of the installed system.	1	Item		
4.17	Any other items necessary to successfully complete the above installation as per the system you propose to install. Please list the items and price a) b) c)	1	Item		
	Sub-total for SCHEDULE No.2:-Access Control System Installation Works C/F to Main Summary Page				

SCHEDULE No.3:- STRUCTURED CABLING WORKS

Item	Description	Qty	Unit	Rate	Kshs.
1.0	**Horizontal Data Cabling**				
1.11	36HU free standing metal cabinet/ with glass door complete with Cable Managers, fans, power outlet points, grounding kits and castors. The data cabinet to be complete with 1No. APC Power Distribution Units (PDU) to accommodate power for the active devices to engineers approval	1	No.		
1.2	As "detto" but 22U	1	No.		
1.3	48port RJ45 cat 6A (or latest) patch panel for UTP termination as Siemons B1:B15 or approved equivalent.	1	No.		
1.4	1M RJ45-RJ45 Cat 6A (or latest) UTP factory terminated patch cord as Siemons or approved equivalent to be used in cabinet.	28	No.		
1.5	2U vertical cable managers/organizers and as Siemon or approved equivalent	2	No.		
1.6	Cat 6A (or latest) UTP 4-pair cable as Siemons or approved equivalent laid between cabinet and work station.	1400	M		
1.7	3M RJ45-RJ45 Cat 6A (or latest) UTP factory terminated patch cord as Siemons or approved equivalent to be used at work station.	28	No.		
1.9	RJ45 Cat 6A (or latest) UTP (Dual) outlet complete with faceplate and labeling system as Siemons or approved equivalent.	14	No.		
1.91	Backbone cabling to Server room				
	a) 1000 Base-X 8 Core fibre optic cable	50	M		
	b) Fibre optic patch leads	4	Item		
2.0	**Active Components**				
2.1	48 Port Managed Gigabit Ethernet Switch with PoE plus (at least 800W) and 4 SFP Ports and modules as CISCO catalyst switch (*currently available in the market and being supported by Cisco*) or approved equivalent	1	No.		
2.5	Allow for interlinking the switches	1	Item		
2.3	Ceiling/Wall mounted wireless Access point to be PoE including all accessories as Cisco Aironet 1815 Series (*currently available in the market and being supported by Cisco*) or approved equivalent	1	No.		
4.00	**General Requirements**				
4.10	Earthing the system at the Cabinet level	1	Item		
4.20	2500VA Rack mountable Uninterruptible power supply unit **(Provisional - To be supplied only as per requirement on site)**	1	No.		
4.30	Any other items necessary to complete the structured cabling satisfactorily. (List and give quantities of the items) a)…….. b)…….. c)……..…… d)……..……				
	Sub-total for SCHEDULE No.3:- Structured Cabilng C/F to Summary page				

SUMMARY PAGE

Item	Description	KSHS
1.0	Sub-total for CCTV system B/F from page H/7	
2.0	Sub-total for Access Control System B/F from page H/14	
3.0	Sub-total for Structured Cabling B/F from page H/14	
4.0	Allow for Testing, commissioning and integration of the whole installed system	
5.0	Allow for training of (5No. Users/equipment operators as described in the technical specifications of this document	
6.0	Provisional sum for ISP Connectivity charges	**50,000**
	Total for ICT works (IP CCTV System, Structured Cabling & Access Control System Installations works) C/F to Grand summary page	

GRAND SUMMARY PAGE

Item	Description	KSHS
1.0	Total for Preliminaries B/F from page H/P-5	
2.0	Total for Electrical Installations works B/F from page H/E-13	
3.0	Total for ICT System Installations works B/F from page H/ICT-4	
4.0	Total for Generator Installations works B/F from page H/DG -6	
5.0	Allow for training and certification of (5No. Users/equipment operators and 2No. Technical staff from SDPW) as described in the technical specifications of this document	
6.0	Allow for 4 sets (in A1 coloured print outs and soft copy in PDF format) of "As installed" drawings and Schematic wiring diagram to Engineer's approval	
7.0	Allow for preparing and presenting warranty and documentation, ALL works cabling layout diagrams, indelible point labels and preparing and submitting individual test results of network cables (for each point and for all point to be submitted as a bound report). Attach printed results and soft copy	
	Grand total for Electrical, ICT System and Generator Installations works C/F to Main Summary page	

SECTION G

TECHNICAL SCHEDULE

OF

ITEMS TO BE SUPPLIED

TECHNICAL SCHEDULE

1.0 The technical schedule shall be submitted by tenderers to facilitate and enable the Project Manager to evaluate the tenders

2.0 The filling of this schedule forms part of Technical Evaluation of the tenders, and bidders shall therefore be required to indicate the type/make and country of origin of all the materials and equipment they intend to offer to the employer as listed in the technical schedule.

3.0 Any bid returned with unfilled Technical Schedule shall be considered technically non-responsive, and the bidder shall automatically be disqualified.

TECHNICAL SCHEDULE OF ITEMS TO BE SUPPLIED
(To be Completed by the Tenderer as a Mandatory Requirement)

ITEM	DESCRIPTION	TYPR/MAKE	COUNTRY OF ORIGIN
	Automatic voltage stabilizer (AVS)		
1.0	Automatic power factor correction capacitor bank (APFCB)		
2.0	Diesel Generator		
3.0	Lighting Fittings		
4.0	Switches and Sockets		
5.0	Motion Sensor switch		
6.0	Fire Alarm System (Addressable Type) i) Control Panel ii) Heat Detector iii) Smoke Detector iv) Manual Call Point v) Fire Beacon Light		
7.0	Cables i) Armoured Cables ii) Single Core PVC Insulated Cables iii) Fire Resistant Cables		
5.0	Distribution Board and MCBs/MCCBs		
8.0	Cable tray		
9.0	Cable trunking		
10.0	Network Switch		
11.0	Wireless Access Point		
12.0	Uninterruptible Power Supply (UPS)		
13.0	Cat 6A Cables		
14.0	Network Cabinets		
15.0	Fibre Optic Cable		
16.0	Data outlet plates		
17.0	Patch Panels		
18.0	CCTV Cameras		
19.0	Network Video Recorder		
20.0	Display screen		
21.0	Access Control Card Readers		
22.0	Access Door controller		
23.0	High voltage surge protector (AVS)		

Detailed manufacturer's Brochures detailing Technical Literature and specifications on the above items MUST be attached and Items to be supplied highlighted (Model and Make).

SECTION H

STANDARD FORMS

CONTENTS OF SECTION H

	TITLE	PAGE
1.	Contents	EIW- H/1
2.	Key Personnel	EIW- H/2
3.	Schedule of Contracts completed in the last five (5) years	EIW- H/3
4.	Schedule of on-going projects	EIW- H/4
5.	Schedule of major items of Contractor's Equipment	EIW- H/5
6.	Details of Litigation or Arbitration Proceedings	EIW- H/6
7.	Commissioning Guide for Electrical Installation works	EIW-H/7 – EIW-H/13

NOTE:

Tenderers must duly fill these Standard Forms as a mandatory requirement as they will form part the evaluation criteria.

KEY PERSONNEL

Qualifications and experience of key personnel proposed for administration and execution of the Contract.

POSITION	NAME	HIGHEST QUALIFICATION *(Attach proof)*	YEARS OF EXPERIENCE (GENERAL)	YEARS OF EXPERIENCE IN PROPOSED POSITION

I certify that the above information is correct.

…….. …… ……

Title Signature Date

CONTRACTS COMPLETED IN THE LAST FIVE (5) YEARS

Work performed on works of a similar nature, complexity and volume over the last 5 years.

PROJECT NAME	NAME OF CLIENT	TYPE OF WORK AND YEAR OF COMPLETION	VALUE OF CONTRACT (Kshs.)

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

…… …… ……

Title Signature Date

SCHEDULE OF ON-GOING PROJECTS

Details of on-going or committed projects, including expected completion date.

PROJECT NAME	NAME OF CLIENT	CONTRACT SUM	% COMPLETE	COMPLETION DATE

I certify that the above works are currently being carried out by ourselves.

…… …… ……

Title Signature Date

SCHEDULE OF MAJOR ITEMS OF CONTRACTOR'S EQUIPMENT PROPOSED FOR CARRYING OUT THE WORKS (Attach proof of ownership)

ITEM OF EQUIPMENT	DESCRIPTION, MAKE AND AGE (Years)	CONDITION (New, good, poor) and number available	OWNED, LEASED (From whom?), or to be purchased (From whom?)

DETAILS OF LITIGATION OR ARBITRATION PROCEEDINGS IN WHICH THE TENDERER HAS BEEN INVOLVED AS ONE OF THE PARTIES IN THE LAST 5 YEARS

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Code: E/CG/01

REPUBLIC OF KENYA

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING & URBAN DEVELOPMENT

STATE DEPARTMENT FOR PUBLIC WORKS

(ELECTRICAL DEPARTMENT)

PROPOSED COMPLETION OF FRESH AND FROZEN FISH PROCESSING SECTION AT LIWATONI COMPLEX, MOMBASA COUNTY

W.P ITEM NO: D116 CO/MSA/1802 JOB NO. 10464B

TESTING & COMMISSIONING GUIDE

FOR

ELECTRICAL INSTALLATION WORKS ON SITE

Issued by:

The Chief Engineer (Electrical),
State Department for Public Works,
P.O. BOX 41191 – 00100 GPO,
NAIROBI.

MINISTRY OF LANDS, PUBLIC WORKS HOUSING & URBAN DEVELOPMENT

STATE DEPARTMENT FOR PUBLIC WORKS
ELECTRICAL DEPARTMENT

TESTING AND COMMISSIONING OF ELECTRICAL INSTALLATION WORKS ON SITE.

PROJECT NAME: .....

W.P. NO. ..... JOB NO.....

PROJECT SITE.....

CLIENT.....

The Sub contractor shall test in accordance with the relevant section of IEE regulations, Rule 3 of the Electrical Power Act for additional tests not covered by the regulations, Government Electrical specifications I & II and the Kenya Power & Lighting Co. Ltd by-laws.

A PRELIMINARY CHECKS

The Engineer shall check to establish the following data:-

ITEM	DESCRIPTION			REMARKS
(i)	Type of installation (New/Renovation/Addition/ to existing installation)			
(ii)	a) Power supply 240V/415V/11KV b) Frequency of the mains supply c) Installation power factor			....
(iii)	Method of Metering (New /Monitoring/Existing meter)			
(iv)	Are Testing/Measuring instruments available			
(v)	Are there maintenance/operational manuals for specialized systems (if any)			
(vi)	List of 'As installed drawings'	Drg No.	Description	

B TESTS

ITEM	TEST DESCRPTION	OBSERVATIONS/ RESULTS	REMARKS
1	**Tests shall be carried out to ensure:**		
	a) All fuses and single pole switches are installed in live conductor		
	b) All outlets and switched socket outlets are connected to 'LIVE' conductor in the Terminal marked so and each earth pin effectively bonded to earth continuity system		
	c) Verify continuity of all final conductors of each 'Ring' circuit. **(0.05 to 0.8Ω)**	.....Ohms	
	d) All radial circuits emanate from respective distribution boards/consumer units and that they do not supply any other Equipment		
	e) The correct phase sequence is maintained throughout the installation		
	f) Effective 'Discrimination' in the arrangement of protective devices. i.e. a fault in the furthest power point/Lighting point should not blow or trip Fuses/MCBs respective in the Meter board.		
2	**Inspect to ensure:**		
	a) No terminal in the Ceiling Rose is 'LIVE' when the corresponding switch is in the off position.		
	b) All conduit termination conduit boxes, Consumer unit, DB's and Adaptable boxes have smooth edges and are properly bushed.		
	c) All fixed metal works close to Electrical installation are bonded to earth continuity conductor.		
	d) All Fuse ways and Circuit breakers for final sub circuits are properly labeled		

B TESTS CONT'D

ITEM	TEST DESCRPTION	OBSERVATIONS/ RESULTS	REMARKS
3	**Carry out the following tests:**		
	a) Insulation Resistance tests i) Between phases a) R -Y b) R -B c) B-Y ii) Phase to Neutral a) R - N b) Y - N c) B - N iii) Phase to Earth a) R - E b) Y -E c) B -E **Minimum thresholds for above and for:** i) ELV circuits (SELV & PELV) = 0.25 MΩ ii) LV Circuits up to 500V = 0.5 MΩ iii) LV Circuits above 500V = 1 MΩ	……. ……MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ ……..MΩ	
	b) Earth continuity conductor impedance **(0.005 to 2Ω)**	……..Ohms	
	c) Earth fault Loop impedance **(0 - 2000 Ω)**	……..Ohms	
	d) Earth Electrode resistance **(Less than 4Ω)**	……....Ohms	
	e) Earth Lead resistance **(Less than 4Ω)**	……..Ohms	
	f) The operation of protection MCCBS & MCBS (Tripping under faulty conditions)		
	g) Check the mechanical toggling (make & break) of all the switches to installed accessories.		
4	**Underground cabling, Check for:**		
	i) Continuity of the phases		
	ii) Factory tests done (avail certification)		
	iii) Proper termination		
	iv) Route markers		

B TESTS CONT'D

ITEM	TEST DESCRPTION			OBSERVATIONS/ RESULTS	REMARKS
5	**Installed load** i) Lighting points (No.) ii) Socket outlets (No.) iii) Motors (Give rating) iv) **Other machines (Attach list if more)**				
	Item	**Description**	**Rating**		
6	**Type of Earthing**: TN-C/TN-S/ TN-C-S/TT/IT.				
7	**LV switchboard:** The board shall be checked to ascertain the following				
	i) Rating of the switchboard				
	ii) Rating of main incomer MCCB				
	iii) Form of construction (1/2B/3B/4)				
	iv) Degree of protection (IP rating)				
	v) Nameplates for identification of all circuits entering/leaving switchgear				
	vi) Proper Electrical & Mechanical operation of functional parts i.e MCCBs, Indicating meters, CTs & VTs .				
	vii) Check cable terminations, type & terminals				
	viii) General comments on the appearance of the finished mechanical assembly including welding, full nuts & tightness of bolted parts.				
8	**Fireman's switch.**				
	i) Make and manufacturer				
	ii) The rating of the switch				
	iii) Test for the Electrical and Mechanical operation of the switch				
	iv) State the types of loads supported by the maintained board on the switch.				
	**** see foot note**				

General comments on the Electrical installation:-

Testing and Commissioning witnessed by:

S.D.P.W REPRESENTATIVE/ PROJECT ENGINEER:-

Name ……Designation…….....

Sign…… Date……..……..

CONTRACTOR'S REPRESENTATIVE:-

Name ……Designation…….....

Sign…… Date……..……..

**If there are other defects noted, list them on a separate sheet and attach.

STATEMENT OF COMPLIANCE

(a) I confirm compliance with all clauses in this tender specification.

(b) I confirm that I have not and will not make any payment to any person which can be perceived as in inducement to enable me win this tender.

Signed ……for and on behalf of the Tenderer.

Date ……

MECHANICAL INSTALLATION WORKS

VOLUME 3

TENDER SPECIFICATION
AND
BILL OF QUANTITIES
FOR
SUPPLY, DELIVER, INSTALL TEST AND COMMISSION OF
MECHANICAL INSTALLATION WORKS

SECTION A

GENERAL MECHANICAL SPECIFICATIONS

GENERAL MECHANICAL SPECIFICATION

1. General

This section specifies the general requirement for plant, equipment and materials forming part of the ContractorWorks and shall apply except where specifically stated elsewhere in the Specification or on the Contract Drawings.

2. Quality of Materials

All plant, equipment and materials supplied as part of the Scontract 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 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 Contractor.

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

Materials and apparatus supplied by others for installation and connection by the Contractor shall be carefully examined on receipt. Should any defects be noted, the 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.

3. Regulations and Standards

The Contractor 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

4. Electrical Requirements

Plant and equipment supplied under this Contractor 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 Contractor. All other wiring and connections to equipment shall form part of this Contractor and be the responsibility of the Contractor.
The 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 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.

5. **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 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 Contractor shall replace this equipment at his own cost.

6. **Site Supervision**

The Contractor shall ensure that there is an English-speaking supervisor on the site at all times during normal working hours.

7. **Installation**

Installation of all special plant and equipment shall be carried out by the Contractor under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent in accordance with the best standards of modern practice and to the relevant regulations and standards described under Clause 2.03 of this Section.

8. **Testing**

8.1 General

The Contractor's attention is drawn to Part 'C' Clause 1.38 of the "Preliminaries and General Conditions".

8.2 Material Tests

All material for plant and equipment to be installed under this Contractorshall 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 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 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.

8.3 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 Contractor shall give two week's notice to the Engineer of the manufacturer's intention to carry out such tests and inspections.

The Engineer or his representative shall be entitled to witness such tests and inspections. The cost of such tests and inspections shall be borne by the Contractor.

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

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

8.4 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 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 Contractor and the specified tests shall then be applied.

The 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.

9. **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.

10. **Welding**

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.

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.

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.

10.4 Welders Qualifications

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

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

SECTION B

PARTICULAR SPECIFICATIONS OF

COLD ROOMS INSTALLATION

PARTICULAR SPECIFICATIONS FOR COLD ROOM INSTALLATION

11. **Scope of Work**

The work to be carried out comprises the supply, delivery, installation, testing and commissioning mechanical building services, Machine and equipment installation works as specified in the material schedule.

12. Design Conditions for Cold rooms

Mean ambient temperature 33ºC DB
Storage temperature -25 o to -18oC Storage humidity (average) 90%
Evaporator cooling loads for each coldroom as per the specification in the bill of quantities

13. **Vapour Barrier & Water Proofing**

Before the application of the insulation to the structure a vapour barrier shall be applied to the entire internal surface. This shall consist of an even layer of Flinkote type 3 or equal and approved applied to manufactures instructions. The top surface of the floor insulation shall be water proofed using asphalt saturated and coated vapour barrier paper of not more than 0.3 perms permeance or other equal and approved, lapped at least 80mm and tacked in place.

The vapour seal must be approved by the Engineer before insulation work is commenced.

14. **Insulation and Final Wall Finishes**

150mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled with a fire resistant mineral fiber core bonded with metal facings, suitable for fire rated wall Panels achieve three hour fire resistance ratings with a unique hidden fastener for increased aesthetic sound attenuated, insulating value as show below. Core material shall be non-toxic, does not release gases in a fire and has a smoke developed rating of zero. It is also water repellent and free of (H) CFCs and recyclable.

a) Non hygroscopic
b) Fire-Retardant
c) K-value of 0.035W/M2K
d) 20microns White Polyester Silicon coating (food quality)
e) UL listed /FM approved

15. **Insulated Door**

The door and frame shall be fabricated from heavy seasoned timber and insulated with two layers of Insulated door 3000mm x 3000mm high sliding door made out o150mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled with a fire resistant mineral fiber core bonded with metal facings, suitable for fire rated wall Panels achieve three hour fire resistance ratings with a unique hidden fastener for increased aesthetic sound attenuated, Core material shall be non-toxic, does not release gases in a fire and has a smoke developed rating of zero. It is also water repellent, free of (H)CFCs and recyclable. Insulating value as show below

a) Non hygroscopic
b) Fire-Retardant
c) K-value of 0.035W/M2K
d) 20microns White Polyester Silicon coating (food quality)

e) sizes: 3000mm x 3000mm
f) UL listed /FM approved
g) The Door shall made complete with a cold room door lock and automatic electric sliding mechanism. and lighting micro switches

16. **Evaporator**

The evaporator shall consist of a cooling coil, air-circulating fan, fan guard, defrost electric heater element and a thermostatic expansion valve. The valve shall be pressure equalized and manually adjustable. A timer unit shall be mounted in the control panel to control both the de-frosting intervals and defrosting period – both of which shall be variable.

It shall be ceiling type unit with a drip tray fitted with a drain pipe to the outside of the building. The unit shall be as GUNTNER or equal and approved.

17. **Condensing Unit**

The condensing unit shall be of capacity to match with the evaporator-cooling load while using refrigerant R134a under specified conditions or any other non-ozone depleting refrigerant. The unit shall be air-cooled semi hermetic with automatic capacity control for evaporator demand.

It shall be provided with suitable anti-vibration mountings and an initial oil change in the compressor. The unit shall be complete with compressor, electric motor, air-cooled condenser of non-ferrous construction, liquid receiver, all mounted on a common base. The unit shall be as BITZER or equal and approved and shall be mounted in the adjoining compressor room.

18. **Refrigeration Pipework.**

Pipework shall be approved copper tubing and fitting and shall be properly fixed in conformity with 'Trane Refrigeration Manual' or any other manufacturer printed installation instructions. The suction line shall be insulated with at least 25mm thickness of Armaflex or other approved material, which shall not have insulating properties inferior to those of cork. The condensing unit shall be approximately 3 meters from evaporator unit.

19. **Refrigeration Components**

The system shall be provided with the following components all similar to or equal to those manufactured by DANFOSS

- Filter drier
- Sight glass with moisture indicator
- Solenoid valve
- HP/LP cut out
- Suction & delivery gauges
- Room thermostat
- 100mm diameter surface mounted dial thermometer in degree Celsius

20. **Control Panel**

The control panel shall be fabricated from Aluminium sheet of minimum SWG18 with a hinged door and then powder coated after manufacture. It shall be provided with an integral lock. It shall be complete with;

1. Isolator fitted on the door
2. Controlling thermostat with temp range from -40^0C to 33^0C
3. 80mm dial thermometer with temp range from -40^0C to 33^0C
4. Contactors for defrosting Coils
5. Motor starters and current overload relays

6. MCB's
7. Phase failure relay with over and under voltage protection
8. Timer switch for defrost control
9. Push buttons for start and stop
10. Audible and visual high temperature alarm with manual reset

The panel shall also have green light running indicators, red "door open" light and equipment circuit trip lights.

21. **Electrical Installation**

The electrical Contractor shall be responsible for providing power to the control panel and for providing a local Isolator and connecting power to it. The cold room Contractor shall be responsible for the final connections to the above equipment, all control wiring and for all wiring within the control panel.

22. Testing and Commissioning

Before insulation of the suction pipe the refrigeration system shall be tested for pressure and leaks using the combined pressure and leaks testing method. The refrigeration system shall be charged with R134a refrigerant and entire system raised to test pressure using nitrogen or other inert gas. The test pressure shall be twice the working pressure for the system.

Leaks shall be checked using soap bubble followed by using of electronic leak detector. After system is proved leak proof, it shall be maintained under test pressure for 24 hours. If at the end of this time the gauge pressure has fallen, the complete system shall be re-tested. After the successful completion of the test, the system shall be evacuated using vacuum for 24 hours. If there is loss of vacuum the system shall be dehydrated again and left under vacuum for a further 24 hrs until the system is effectively dehydrated.

After this the system shall be charged with the correct type and quantity of the refrigerant. The system shall then be set to work and adjusted to ensure that it operates correctly and design conditions are archived. It shall be left to operate for 72 Hrs and room temperatures recorded for this period using an automatic room temperature sensor/recorder. The compressor shall be provided with identification plates stating the type of refrigerant used and the quantity required for the system

SECTION C:

PARTICULAR SPECIFICATIONS
FOR
PLUMBING AND DRAINAGE

PARTICULAR SPECIFICATIONS FOR PLUMBING AND DRAINAGE

23. GENERAL

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

24. MATERIALS AND STANDARDS

24.1 **Pipe work and Fittings**

Pipe work materials are to be used as follows:

a) CPVC Pipework

The pipe work for the plumbing installation shall be chlorinated polyvinyl chloride (CPVC) tubing which meets the requirements of SDR 11 of ASTM F441 and be suitable for potable water installations.

The pipe fittings shall CPVC pipe fittings and shall meet or exceed the requirements of ASTM D2846.
They will conform to ASTM F441 and ASTM F442, ASTM F1970. All changes in direction will be with standard bends or long radius fittings.

All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493 and primers that meet or exceed the requirements of ASTM F656. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement and primer shall be listed by NSF International for use with potable water, and approved by the pipe and fittings manufacturers.

b) Galvanized Steel Pipe work

Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with B.S. 1387 Medium Grade, with tapered pipe threads in accordance with B.S. 21. All fittings shall be malleable iron and manufactured in accordance with B.S. 143.

Pipe joints shall be screwed and socketed and sufficient coupling unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

Galvanized steel pipe work, 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant. All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter under Section 'C' of the Specification.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and B.S. 143 respectively.

c) Copper Tubing

All copper tubing shall be manufactured in accordance with B.S. 2871 from C.160 'Phosphorous De-oxidized Non-Arsenical Copper' in accordance with B.S. 1172.

Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be with compression fittings manufactured in accordance with B.S. 864.

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

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

d) P.V.C. (Hard) Pressure Pipes and Fittings

All P.V.C. pipes and fittings shall be manufactured in accordance with B.S. 3505: 1968.

Jointing

The method of jointing to be employed shall be that of solvent welding, using the pipe and manufacturer's approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion.

Testing

Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure of the class of pipe used. Testing shall be carried out as soon as practical after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipe slowly to avoid risk of damage due to surge.

e) A.B.S. Waste System

Where indicated on the Drawings and Schedules, the Sub-contractor shall supply and fix A.B.S. waste pipes and fittings.

The pipes, traps and fittings shall be in accordance with the relevant British Standards, including B.S. 3943, and fixed generally in accordance with manufacturer's instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding, the manufacturer's instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding. The manufacturer's recommended method of joint preparation and fixing shall be followed.
Standard brackets, as supplied for use with this system, shall be used wherever possible. Where the building structure renders this impracticable the Sub-contractor shall provide purpose made supports, centres of which shall not exceed one meter.

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

f) PVC Soil System

The Sub-contractor shall supply and fix PVC soil pipes and fittings as indicated on the Drawings and Schedules. Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer's instructions and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer whose fixing instructions shall be strictly 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.

24.2 **Valves**

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

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

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

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

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.

24.3 **Waste Fitment Traps**

a) Standard and Deep Seal P & S Traps
Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.

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

b) Anti-Syphon Traps
Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littleshampton, Sussex, England.

The trade name for traps manufactured by this company is ‘Grevak’.

24.4 **Pipe Supports**

a) General
This sub-clause deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.

The Sub-contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.

The Sub-contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) CPVC Pipework

The pipe work for the plumbing installation shall be chlorinated polyvinyl chloride (CPVC) tubing which meets the requirements of SDR 11 of ASTM F441 and be suitable for potable water installations.

The pipe fittings shall CPVC pipe fittings and shall meet or exceed the requirements of ASTM D2846.
They will conform to ASTM F441 and ASTM F442, ASTM F1970. All changes in direction will be with standard bends or long radius fittings.

All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493 and primers that meet or exceed the requirements of ASTM F656. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement and primer shall be listed by NSF International for use with potable water, and approved by the pipe and fittings manufacturers.

b) Steel and Copper Pipes and Tubes

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

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

Size Nominal Bores	Copper Tube to B.S. 659	Steel Tube 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.

24.5 **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.

24.6 **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.

25. INSTALLATION

25.1 **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.

25.2 **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.

26. TESTING AND INSPECTION

26.1 **Site Tests – Pipework Systems**

a) Above Ground Internal Water Services Installation

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

If preferred, the Sub-contractor may test the pipelines in sections. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.
During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

The Sub-contractor shall take all necessary precautions to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced at the Sub-contractor's expenses.

d) Above Ground Soil Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.

Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted. Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.

In all respects, tests shall comply with the requirements of B.S. 5572.

26.2 **Site Test – Performance**

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

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

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

i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.

ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors approved by the Engineer.

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

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

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

Pressure gauges should be recalibrated before the tests.

The Sub-contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

27. STERILISATION OF COLD WATER SYSTEM

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

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

SECTION D:

PARTICULAR SPECIFICATION FOR PORTABLE FIRE EXTINGUISHER BOOSTED HOSE REEL SYSTEM,

28. General

The particular specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers, Hose Reel, Fire Hydrant and Dry Riser. The Sub-contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the contract drawings but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the Sub-contractor there is a difference between the requirements of the Specifications and the Contract Drawings, he shall clarify these differences with the Engineer before tendering.

28.1 Scope of Works

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

28.2 Water/CO2 Extinguishers

These shall be 9-litre water filled CO2 cartridge operated portable fire extinguishers and shall comply with B.S. 1382: 1948 and to the requirements of B.S.4523: 1977. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

a) Method of operation.
b) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.
c) Name and address of the manufacturer or responsible vendor.
d) The nominal charge of the liquid in imperial gallons and litres.
e) The liquid level to which the extinguisher is to be charged.
f) The year of manufacture.
g) A declaration to the effect that the extinguisher has been tested to a pressure of 24.1 bar (350 psi.).
h) The number of British Standard 'B.S' 1382 or B.S. 5423: 1977.

28.4 Portable Carbon Dioxide Fire Extinguishers

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 3326: 1960 and B.S. 5423: 1977.

The body of extinguisher shall be a seamless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.

The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of
206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers:-

a) The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.
b) Method of operation.
c) The words "Re-charge immediately after use".
d) Instructions for periodic checking.
e) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
f) The manufacturers name or identification markings

28.5 Dry Chemical Powder Portable Fire Extinguisher

The portable dry powder fire extinguishers shall comply with BS3465: 1962 and BS 5423. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470: 1972 and shall be suitably protected against corrosion.

The dry powder charge shall be not-toxic and retain 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.

28.6 Air Foam Fire Extinguisher

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. 5423 with the following specifications:-

Cylinder: to B.S. 1449
Necking: to be 76mm outside diameter steel EN 3A $2^3/_4$ X 8TPI female thread**.**
Head cap: to be plastic moulding acetyl resin.

CO_2 Cylinder: to be 75gm P.V.C coated.
Internal Finish: to be polythene lining on phosphate coating.
External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

28.7 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.

29. Boosted Hose Reel System

29.1 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.

29.2 Hose Reel Pumps

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

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

29.3 Control Panel

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

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

(a) 'On' push button for setting the control panel to live.
(b) Green indicator light for indicating control panel live.
(c) Duty / Stand-by pump auto change over.
(d) Duty pump run green indicator light.
(e) Stand-by pump run green indicator light.
(f) Duty pump fail red indicator light.
(g) Stand-by pump fail red indicator light.
(h) Low water condition pump cut-out with red indicator light.

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

29.4 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-galvanized cabinet recessed on the wall. The hose reels shall be installed at 1.5 meters centre above the finished floor level in locations shown in the contract drawings.

29.5 Pipe Work

The pipe work for the hose reel installation shall be chlorinated polyvinyl chloride (CPVC) tubing which meets the requirements of SCH 40 or SCH 80 of ASTM F442 SDR 13.5 and be suitable for fire fighting installations. The pipes shall be CPVC Pipes approved for fire installation by NFPA and FOC such as BlazeMaster CPVC pipe and fittings or equal and approved. The pipes shall be installed in accordance with the manufacturer's written installation instructions and design manual. The pipe work and all associated fittings shall be in approved colour for fire fittings.

29.6 Pipe Fittings

The pipe fittings shall CPVC pipe fittings and shall meet or exceed the requirements of ASTM D2846.
They will conform to ASTM F438 (Sch. 40) and ASTM F439 (Sch. 80), ASTM F1970. All changes in direction will be with standard bends or long radius fittings. No elbows will be provided. The fittings shall be CPVC fittings approved for fire installation by NFPA and FOC such as BlazeMaster CPVC pipe and fittings or equal and approved. The pipe work and all associated fittings shall be in approved colour for fire fittings.

29.7 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.

29.7.1 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

29.7.2 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.

29.7.3 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.

29.7.4 Finish Painting

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

29.7.5 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.

29.7.6 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.

30. Signage-Fire Instruction /Fire Exit

30.1 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.

30.2 Fire Exit Sign

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

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

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

30.4 Hose Reel Label

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

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

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

SECTION E:

INSTRUCTIONS TO TENDERERS

PRELIMINARY & TECHNICAL EVALUATION CRITERIA

TENDER EVALUATION CRITERIA

After tender opening, the tenders will be evaluated in 2 stages, namely:

1. Preliminary evaluation and
2. Technical evaluation

STAGE 1- DETERMINATION OF RESPONSIVENESS

A) PRELIMINARY EXAMINATION

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

These conditions may include the following:

a) Certificate of Registration/Incorporation
b) Valid Registration with **National Construction Authority (NCA 2) and above**
c) Current Class of Licenses with the relevant statutory bodies e.g. Energy Regulatory Commission,
d) Communication Authority of Kenya, County Governments, Water Management Boards etc where applicable;
e) Proof of payment for tender document if required;
f) Signed Pre-tender site visit form if pre-tender site visit is required;
g) Proof of authorization shall be furnished in the form of a written power of attorney which shall accompany the tender if the signatory to the tender is not a director of the company (provide name and attach proof of citizenship of the signatory to the Tender). Provide also Form CR12 from the Registrar of Companies
h) Manuals and Materials Certificates as described in the Tables attached and Bills of Quantities
i) Valid Tax Compliance Certificate
j) Duly signed form of Tender

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

STAGE 2: TECHNICAL EVALUATION

The tender document shall be examined based on the following;

a) Assessment for Eligibility

b) Compliance with Technical Specifications

The tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility and their capability and adequacy of resources to effectively carry out the subject contract.

In order to comply with provision, the tenderers shall be required;

a) ***To fill the Standard Forms*** **provided in the bid document for the purposes of providing the required information. The tenderers may also attach the required information if they so desire;**

b) To supply equipment's/items which comply with the technical specifications set out in the bid document. In this regard, the bidders shall be required to submit relevant technical brochures/catalogues with the tender document, highlighting the Catalogue Numbers 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) Any other necessary requirements (Specify).

The bid will then be analysed, using the information in the technical brochures, to determine compliance with technical specifications for the works as indicated in the tender document. 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's they propose to supply.

PARAMETER

(i) Key personnel

(ii) Contract Completed in the last TEN (10) years

(iii) Schedules of contractor's equipment

(iv) On-going project

TABLE 1:

a) Assessment for Eligibility

Item	Description	Compliant YES or NO
1	**Key Personnel (Attach evidence)**	
	Director of the firm • Holder of degree in relevant Engineering field or • Holder of diploma in relevant Engineering field	
	At least 1No. degree/diploma holder of key personnel in relevant field • With over 5 years relevant experience	
	At least 1 No certificate holder of key personnel in relevant field • With over 5 years relevant experience	
	At least 2No artisan (trade test certificate in relevant field) • Artisan with over 5 years relevant experience	
2	**Contracts completed in the last ten (10) years (Max of 2No. Projects)- Provide Evidence-Letter of award and/or Completion certificate** Project of similar nature, complexity or magnitude	
3	**Schedule of contractors equipment and transport (proof or evidence of ownership/Lease)**	
4	**On-going project of similar nature, complexity and magnitude-Provide evidence; letter of award**	
	COMPLIANCE STATUS	

The following table shall be used to determine the bidder's responsiveness to the technical specifications.

TABLE2:

b) Assessment for Technical Specification

ITEM	DESCRIPTION	SPECIFICATION AS PER THE TENDER DOCUMENT	MAKE/MODEL	MET THE SPECIFICATIONS YES OR NO
1	BLAST FREEZER			
2	IQF MACHINE			
3	GLAZING MACHINE			
4	BAND SAW			
5	ICE FLAKE PLANT			
6	PLATE FREEZER			
7	VACUUM PACKING MACHINE			
8	METAL DETECTOR			
9	DIGITAL WEIGHING SCALE			
10	PRODUCT CONVEYOR			
11	R.O PLANT			
12	EVAPORATORS			

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.

SECTION F:

BILLS OF QUANTITIES

AND

TECHNICAL SCHEDULE FOR MACHINE AND EQUIPMENT

TECHNICAL SCHEDULE

1. General Notes to the Tenderer

1.1 The tenderer MUST submit technical schedules for all materials and equipment upon which he has based his tender sum.

1.2 The tenderer MUST also submit separate comprehensive descriptive and performance details for all equipment 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).

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No. etc.)
1	BLAST FREEZER			
2	IQF MACHINE			
3	GLAZING MACHINE			
4	BAND SAW			
5	ICE FLAKE PLANT			
6	PLATE FREEZER			
7	VACUUM PACKING MACHINE			
8	METAL DETECTOR			
9	DIGITAL WEIGHING SCALE			
10	PRODUCT CONVEYOR			
11	R.O PLANT			
12	EVAPORATORS			

CATALOGUE MUST BE ATTACHED FOR ALL THE ITEMS IN THE SCHEDULE OF MACHINE AND EQUIPMENT ABOVE.

BILLS OF QUANTITIES

FOR

MECHANICAL BUILDING SERVICES,

MACHINES AND EQUIPMENT

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	BILL 01-SANITARYWARE - WASHROOMS				
	Repair, clean, unblock, make good, test and commission the following sanitary fittings and accessories:				
	Fresh & Frozen Building				
	Squat WC				
A	Closed rim squat pan made of white vitreous china material to BS 3402 Dimension 570 x 485 x 165mm (height x width x depth), with integrated raised foot tread complete, P-trap connector - ***Replaced the seal rubber at the flush pipe connection***	Item	1		
	WC flush valve				
B	11/4" toilet flushvalve, concealed, back entry type, chrome plated, rough brass with integral vacuum breaker, non-return valve and control stop, with pushfork and chrome plated push button assembly comprising:-				
	-1 No. flushvalve, brass coated -1 No. push button assembly, chrome plated -1 No. elbow -2 No. straight flushpipe, diameter 38.2 x 445mm -1 No. rubber flushpipe connector	Item	1		
	Close coupled WC pan				
C	Close-coupled washdown water closet pan with a horizontal outlet, complete with a 6 litres cistern with dual flush mechanism, soft close wc seat and cover, stainless steel hinges, wc connector, fixing screws and mastic and 1/2" angle regulating valve **- *Seat cover replacement***	Item	1		
	Washhand basin - *at footbath area*				
D	Floor mounted stainless steel handwash trough, made of 1.5 mm thickness SS grade 316, overall size 4500x450x180 mm finished in bright machine polish and complete with stainless steel leg supports with screw to wall bearers	Item	1		
E	Lever elbow-action action wall mounted tap with swivel anti splash nozzle - *footbath area*				
F	Chrome plated 11/2" unslotted waste, 40mm diameter plastic bottle trap with P trap outlets and fixing clips				
	Total carried to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total carried from previous page				
A	Lever elbow-action action wall mounted tap with swivel anti splash nozzle - *washhand trough*				
	Shower				
B	Shower fitting complete with chrome plated stop cork and 75mm wide shower rose	No	38		
C	Urinal bowl				
	White vitreous china urinal bowl comprising:-				
(i)	Urinal bowl	Item	1		
(ii)	Pair of bowl supports				
(iii)	40mm diameter domed outlet grating Ref No. WF 9370 XX				
(iv)	40mm diameter chrome plated brass bottle trap Ref No. 8461 CP.				
(v)	40mm diameter chrome plated brass extension pipe to wall and flange Ref No. 8466 CP				
(vi)	305mm wide x 620mm high Ceramic Urinal Divider				
(vii)	**Urinal flush valves**				
D	Stern Jupiter 2030E urinal flush valve, housing for electronic urinal complete with shut off valve Ref 125200 and Hytronic urinal electronic flush valve, AC operated with cover plate	item	1		
	Water closet - ***Guard House*** -Supply,install and commision				
E	Closed rim squat pan made of white vitreous china material to BS 3402 Dimension 500 x 500 x 205mm (height x width x depth), with integrated raised foot tread complete, p-trap connector, medium level cistern, 6 litre capacity with plastic syphon fittings, chrome plated metal handle, 1/2" microvalve HP ball valve, side supply, isolation valve, internal overflow, inlet connector and plastic flushpipe. To include 1/2" inclined bib tap with flexible hose to trigger jet and wall hook.	No	1		
	Wash hand basin				
F	Washbasin size:560 x 460 mm wall mount type whb, with 1No. taphole, overflow, single lever basin pillar tap , 11/4 chrome plated pop-up basin waste, 32mm dia plastic bottle trap with 75mm seal and 1No. 20mm diameter, 300mm long flexible connector and angle valves.	No	1		
	Washroom Sanitaryware carried forward to Summary Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	BILL 02-INTERNAL DRAINAGE				
	Fresh & Frozen Building				
	Supply, deliver, install, test and commission uPVC soil system to BS 4660 and BS 4515 and MuPVC waste system to BS 5255 with screwed and socketed joints to BS 21. Solvent welded joints shall be as per the system manufacturers written instructions. Tenderers must allow in their pipework prices for all the couplings,connectors, joints etc. as required in the running lengths of pipework and also where necessary for pipe fixing clips, holderbats, plugs and screwed. The installation must comply with BS 5572 and fixing to be to the manufacturer's printed instructions.				
	MuPVC Waste System Conforming to BS 5255:				
A	40 mm MuPVC Waste Pipe	LM	70		
B	50 mm ditto	LM	70		
	Extra over MuPVC waste pipework for the following:-				
	Bends				
C	40 mm bend	No.	35		
D	50 mm ditto	No.	20		
E	50 mm bend, 45 degree	No.	48		
F	100 mm ditto	No.	80		
	Tees				
G	40 mm diameter MuPVC waste pipework sweep tee	No.	25		
H	50 mm diameter sweep tee	No.	29		
I	50 mm diameter Y tee	No.	25		
J	100 mm diameter sweep tee	No.	20		
K	100 mm diameter Y tee	No.	10		
	Plugs and connectors				
L	40 mm diameter access plug	No.	20		
M	50 mm diameter access plug	No.	4		
N	100 mm diameter access plug	No.	2		
O	100x50mm diameter boss connector	No.	4		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
	Traps				
A	40mm diameter bottle trap	No.	30		
B	110/82 Trapped floor gully	No.	10		
C	4- way 100 x 50mm floor trap complete with plastic grating	No.	14		
	Socket Reducers				
D	40 x 32 mm diameter socket reducer	No.	12		
E	50 x 40 mm ditto	No.	29		
	uPVC Soil System Conforming to BS 4514:				
F	100 mm diameter soil and vent pipe	LM	110		
	Extra over uPVC pipework for the following:-				
G	100 mm diameter socket outlet WC connector	No.	24		
H	100 mm diameter double socket access bend	No.	24		
I	100 mm vent cowl (150.4)	No.	2		
J	50 mm vent cowl (150.2)	No.	1		
K	uPVC buried drain system Conforming to BS 4660:				
L	100mm diameter golden brown pipe	LM	150		
M	150mm diameter golden brown pipe	LM	110		
N	Manhole of internal dimension 600x450 mm and up to 1500mm deep.The manhole to consist of 100mm thick class 20 bed,150mm thick solid concrete block walling in cement/sand (1:3) morter and complete with 600x450mm heavy duty reinforced polymer/plastic cover with hand holes	No.	12		
O	300x300x200mm deep concrete gully trap complete with 100mm uPVC "P" trap gully, grating cover with handle, complete with extension piece including all excavation and back-filling	No.	8		
	Other items				
P	Excavation trench on concrete slap not exceeding 1000mm deep and 750 mm wide & backfilling to approval	LM	250		
Q	100mm diameter long radius bend	No.	3		
R	Allow for 150m thick concrete encasing of drainage pipes running under cabro / road crossing / driveway	LM	250		
	Testing and Commissioning				
S	Allow for the connection of the new internal drainage system to the existing sewer system	Sum	1		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
	Guard House Washroom				
	MuPVC Waste System Conforming to BS 5255:				
A	40 mm MuPVC pipe	LM	8		
B	50 mm ditto	LM	10		
C	100 mm ditto	LM	18		
	Extra over MuPVC waste pipework for the following:-				
	Bends				
D	40 mm bend	No.	2		
E	50 mm ditto	No.	4		
F	50 mm bend, 45 degree	No.	2		
G	100 mm ditto	No.	2		
	Tees				
H	40 mm diameter MuPVC waste pipework sweep tee	No.	2		
I	50 mm diameter sweep tee	No.	1		
J	50 mm diameter Y tee	No.	1		
	Plugs and connectors				
K	50 mm diameter access plug	No.	1		
L	4- way 100 x 50mm floor trap complete with stainless steel grating	No.	1		
	Socket Reducers				
M	50 x 40 mm diameter socket reducer	No.	2		
	uPVC Soil System Conforming to BS 4514:				
N	100 mm diameter soil and vent pipe	LM	12		
	Extra over uPVC pipework for the following:-				
O	100 mm diameter socket outlet WC connector	No.	1		
P	100 mm vent cowl	No.	2		
	uPVC buried drain system Conforming to BS 4660:				
Q	100mm diameter golden brown pipe	LM	10		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
A	Manhole of internal dimension 600x450 mm and up to 1500mm deep.The manhole to consist of 100mm thick class 20 bed,150mm thick solid concrete block walling in cement/sand (1:3) morter and complete with 600x450mm heavy duty reinforced polymer/plastic cover with hand holes	No.	2		
	Other items				
B	Excavation trench not exceeding 1200mm deep and 750 mm wide & backfilling to approval	LM	10		
C	100mm diameter long radius bend	No.	2		
D	300x300x200mm deep concrete gully trap complete with 100mm uPVC "P" trap gully, grating and 14 s.w.g cover with handle, complete with extension piece including all excavation and back-filling	No.	1		
	Testing and Commissioning				
E	Allow for the flushing, testing and commissioning of the entire drainage system to the entire satisfaction of the Engineer.	Sum	1		
	Sanitary Drainage carried forward to Summary Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	BILL 03-FIRE FIGHTING SYSTEM				
	Fresh & Frozen Building				
	Supply, deliver, install, test and commission galvanised mild steel tubing to BS EN 10255: 2004 (BS1387) Class C with socketed joints to BS 21 and galvanised malleable iron fittings including fixing and jointing. Tenderers must allow in their pipework prices for all the couplings, connectors, joints, etc., 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				
A	25 mm diameter galvanised mild steel tubing Class C	LM	75		
B	50 mm ditto	LM	250		
	Extra over MS tubing for the following:-				
	Elbows				
C	25 mm diameter galvanised mild steel elbow	No.	28		
D	50 mm ditto	No.	18		
	Tees				
E	50 mm diameter galvanised mild steel equal tees	No.	12		
F	50 x 50 x 25 mm ditto	No.	10		
	Unions				
G	40 mm diameter	No.	4		
H	25 mm diameter	No.	12		
	Reducers				
I	50 x 25mm diameter malleable galvanized iron reducing bush	No.	16		
	Valves				
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
A	25 mm diameter approved high pressure screw-down bronze gate valve BS 5154 PN 16 for Series B Rating with wheel head including jointing to steel tubing. As CRANE Model 156 or equal	No.	8		
B	50 mm ditto	No.	6		
C	50 mm pressure reducing valve, from 7bar upto 4bar	No.	2		
	Hose Reels				
D	Swinging type hose reel unit complete with 30 m non-kinking 25 mm internal diameter rubber fire hose with nylon spray / jet shut off nozzle, mounting bracket conforming to BS EN 671-1:1995 as "ANGUS" or equal and approved.	No.	6		
E	Allow for pipework identification colour coding as per BS 1710	Sum	1		
	Hosereel Pumpset				
F	Hose reel pumpset, one duty, the other standby mounted on a frame with a stainless steel base plate. Each pump shall have a duty 5m^3/hr. against 35m head as Grundfos model CH V4 - 60 or approved equivalent. In addition, there shall be a 60 litres diaphragm pressure vessel (as Varem or approved equivalent), pressure switches, a switch to protect dry run, 65mm foot valve and strainer, tank connections, gate valves and non-return valves. The pressure set to be as Dayliff SGH5/40 or equal and approved.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. The pumpset shall include all non-returns valves, timer, isolating valves and pipe connections.	1	Set		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
	Portable Fire Extinguishers Supply, deliver, install, test and commission the following portable fire extinguishers and conforming to BS EN 3 / BS 1449.				
A	**Water/Carbon Dioxide Gas Fire Extinguisher** 9 litres water/carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	4	No		
B	**Carbon Dioxide Gas Fire Extinguisher** 4.5 Kg carbon dioxide gas portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	4	No		
C	**Manual Alarm Bell** 9" (225mm) manual operated alarm bell (Gong)	2	No		
D	**Dry Chemical Powder Fire Extinguisher** 6kg dry chemical podwer portable fire extinguisher complete with pressure gauge, initial charge and mounting brackets.	4	No		
E	**Automatic Dry Chemical Powder Fire Extinguisher** 10kg automatic dry chemical podwer fire extinguisher complete with pressure gauge, initial charge, glass bulb, sprinkler head and mounting base. The operating temperature of the bulb shall be 68^{o}C. The unit shall be mounted on the concrete slab ceiling using purpose-made screws and to be as Germania, model GD 25 or equal and approved.	4	No		
F	**Automatic Dry Chemical Powder Fire Extinguisher** 10kg automatic dry chemical podwer fire extinguisher complete with pressure gauge, initial charge, glass bulb, sprinkler head and mounting base. The operating temperature of the bulb shall be 79^{o}C. The unit shall be mounted on the concrete slab ceiling using purpose-made screws and to be as Germania, model GD 25 or equal and approved.	4	No		
G	**Fire Notices** Allow for fire signage for the hose reel system, fire exits and fire instructions as directed by the Project Engineer.	2	No		
	Fire Hosereel installations carried forward to Summary Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	BILL 04-Water Tanks & Water Reticulation				
	WATER RETICULATION				
	Supply, deliver, install, test and commission the heavy duty High-Density Polyethylene (HDPE) pipe systems - PE 100 to iso 4427 standards with elfusion / socketed joints and fittings, including fixing and jointing. The pipes shall be shall be buried. Allow the costs related to the supports brackets.				
	HDPE Pipes, PN16				
A	110mm diameter pipe buried	Lm	300		
B	90mm - ditto	Lm	150		
C	75mm - ditto	Lm	50		
	Extra-over HDPE Pipes pipework for the following:-				
	Bends/elbows				
D	110mm bend	No	30		
E	90mm bend	No	25		
F	75mm bend	No	12		
	Transition fittings				
G	75x3" threaded male joint	No	10		
	Tees				
H	110x110mm ditto	No	16		
I	90/90mm ditto	No	10		
J	75/75mm ditto	No	8		
	Sockets				
K	90mm dia coupler sockets	No	18		
	75mm dia coupler sockets	No	20		
	Reducers				
L	110/90mm reducers	No	10		
M	90/75mm reducers	No	8		
N	75/50mm reducers	No	15		
	Unions				
O	100mm union	No	8		
P	100mm dia approved high 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 tubing. The gate valve to be as "Pegler" or approved equivalent.	No	8		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
A	Ditto but 80mm	No	4		
	Excavation				
B	Excavate trench in concrete class 34 for buried pipes not exceeding 600mm width and average 900mm deep, part return, fill in, ram and remainder cart away. Allow for pipe bedding materials	Lm	588		
C	Excavate for, provide all materials and construct 450 x 450mm valve chamber including cover	No.	2		
D	Excavate for, provide all materials and construct 600 x 450mm valve chamber including cover	No.	4		
E	Allow for 100mm diameter Upvc pipe complete with 200m thick concrete encasing for sleves running under road crossing / driveway	LM	110		
F	Allow for 200mm diameter Upvc pipe complete with 200m thick concrete encasing for sleves running under road crossing / driveway	LM	18		
G	Allow for stand pipe, complete with 20mm GMS pipe which shall be 600mm high, elbow and support made of cider post of 100mm diameter and a 15 mm diameter bib tap	No.	14		
	GRP Roof Water Tank				
H	Assemble a roof level water tank made of GRP (glass reinforced plastic) hot pressed moulded panels with panel flanges stiffened externally with pressed galvanised stiffeners, 6mm thick panels, with stainless steel tie rod system and capacity of tank to be approximately480,000 litres and of preferred dimensions 12000mm x 10000mm x 4000mmH. The tank to rest on dwarf walls erected by others. The tank to be complete with tank cover, mosquito proof inspection vent, internal uPVC stays, convex base panel & concave sump base panel, provide pipe connection to suit BSP brass bosses for screwed pipe work on the outside.NB: (The panels in the sides & base to be externally assembled with bolts) as 'BRAITHWAITE'	No	1		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
A	Water level indicators	No	1		
B	Durable uPVC plastic Internal access ladder	No	1		
C	Stainless Steel External ladder to BS 4211	No	1		
D	Level regulator	No	1		
E	100x8mm thick steel plate	Lm	25		
F	Float switch	No	1		
G	Ball valve boxes	No	1		
H	Anti-vermin screens for overflow and warning pipes	No	1		
	Testing and Commissioning				
I	Allow for setting to work, testing and commissioning of the whole water reticulation system to the satisfaction of the Engineer	Item	1		
	Water pump set - *Elevated water tank*				
J	Supply, deliver, install and commision a self priming duty and alternate water booster pump set capable of delivering 3.5 Litres/sec against a total static head of 30m with a 3-phase power source. The pumpset shall be in a common base frame and complete with control panel, overload protection AVS, float switch for dry run protection, foot valve on the suction and all necessary controls. Allow for adjustable float swich to control the pump mortor and fitted in the roof water tanks with the cabling (approxiamtely 30m). Pump shall be as “Grundfos” model or equal and approved.	Set	2		
K	**Submersible Pump-(Stainless steel casing)** A submersible pumpset capable of delivering 25m^3/hr against 100M head, power, three phase, 50HZ as Grundfos model or equal and approved complete with control panel, associated electrical works, protection against dry run, on/off neon lights, control/pump status display panel, audio alarm with manual silencer to indicate when the pump is faulty, float switch and all necessary controls.	2	set		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
	ELEVATED WATER RESERVOIR - *Repairs Only*				
	Hot Pressed GRP Sectional Storage Tank				
A	Hot Pressed GRP Sectional storage tank manufactured to BS 1,000 x 1,000mm fiberglass reinforced plastic plates as "Braithwaite" or equal and approved -Capacity: 108, 000 litres -Size: 6000 x 6000 x 3000mm deep The tank shall be complete with:- -Flanged plates, cleats, stays, bolts and washers -All other necessary fittings and material for jointing -50mm diameter inlet pipe connection -100mm diameter outlet pipe connections -100mm diameter wash-out pipe connection -80mm diameter overflow pipe conneciton -Cover with a mosquito-proof vent and manhole - painting the inside of the tank including the stays etc, with approved etching primer and three coats of non-toxic bituminous paint suitable for potable water	No.	1		
B	Float Switch & Cables	No.	1		
C	Water level indicator	No	1		
D	Internal ladder	No	1		
E	External ladder from tank platform	No	1		
F	Allow for 2.5mm^2, 3 core cable for connection of level float switches	Lm	30		
G	Allow for 25mm heavy duty PVC conduit	Lm	30		
	Sterilization				
H	Allow for sterilization of the cold water system to the satisfaction of the Engineer	Item	1		
I	Tablet-Samsung Galaxy Tab S8 Ultra	Item	3		
J	Apple iPhone 14 Pro Max	Item	3		
K	Laptop computers Apple MacBook Pro 2019 MV912B/A 15.4" Retina Display 2.3GHz 8-core 9th-Generation Intel Core i9 Processor 4GB Radeon Pro 560X 16GB RAM 512GB Storage Touch Bar and Touch ID Space Grey	Item	3		
	Testing and Commissioning				
L	Allow for setting to work, testing and commissioning of the whole plumbing system to the satisfaction of the Engineer	Item	1		
	Total For Water Reticulation carried forward to Summary Page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount (Kshs)
	BILL-05-SEA WATER DESALINATION PLANT				
A	**SEA WATER DESALINATION REVERSE OSMOSIS PLANT-** Supply, deliver, install, test and commission Reverse Osmosis Plant.The unit shall include, packaged membrane containerized reverse osmosis system for sea water with **pre-treatment and post treatment facilities** with RO permeate treated water quality of less than 500mg/L TDS at a flow rate of **20,000 Liters/hour or 500,000 Liters/24hrs** permeate flow rate - High treatment performance with up to **98% salt rejection**. It shall consist of multi-media filters with pressure gauges, carbon cartridges pre-filters, alarms for monitoring, polyamide composite membranes, chemical dosing sections, softener and **High pressure Inline vertical multi-stage stainless steel pumps 3phase,415v**. It shall be equipped with a control panel and monitoring devices to control/monitor water quality leaving the plant and have pumps protection devices. The entire plant shall be in a 40 ft container fitted with integrated process piping and mechanical equipment, mounting brackets in the container, connection for feed, effluent and electrical power, air conditioning cooling Supply,heavy insulation throughout the interior and powdered coated skid mounted equipment.	1	Sets		
	Stainless steel Feed water Pumps				
B	Set of automatic electrically driven twin Stainless steel booster pump. One duty and the other one standby with automatic changeover, capable of delivering $10m^3$ per hour against a head of 300 meters with a three phase power source and all accessories required for proper and satisfactory operation. It includes pressure switches, time delay switch, a switch to protect against dry run, timer, gate valves, non-return valves, water level indicator, float level regulator, 75mm diameter foot valve and strainer. The pump to be as Grundfos CR 45-12 or approved equivalent. Pump to be installed on RC plinth.	1	set		
	Submersible Pump-(Stainless steel casing)				
C	A submersible pumpset capable of delivering $25m^3$/hr against 100M head, power, three phase, 50HZ as Grundfos model or equal and approved complete with control panel, associated electrical works, protection against dry run, on/off neon lights, control/pump status display panel, audio alarm with manual silencer to indicate when the pump is faulty, float switch and all necessary controls.	2	set		
D	Allow for a pumping station and housing to accommodate all the booster pumps and fittings for proper pumping of sea water to the treatment plant(The position and drawing water from the sea to be evaluated at site)	1	Item		
	Total taken to next page				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSh)
	Total from previous page				
	Electrical Works and Control Panel-(Stainless steel panel)				
A	Control panel for above pumps with contactors, over voltage and under voltage protection relays, MCBs, phase failure protection, timer, start/stop push buttons and indicator lights. All these shall be housed in a lockable cabinet (with integral isolator) made from **stainless steel**. There shall also be an adjustable time delay switch to ensure pumping cycles are controlled to not more than 6 per hour. It should include a change-over switch to enable the pumps to work alternately.	1	Item		
	GRP Roof Water Tank				
B	Assemble a roof level water tank made of GRP (glass reinforced plastic) hot pressed moulded panels with panel flanges stiffened externally with pressed galvanised stiffeners, 6mm thick panels, with stainless steel tie rod system and capacity of tank to be approximately480,000 litres and of preferred dimensions 12000mm x 10000mm x 4000mmH. The tank to rest on dwarf walls erected by others. The tank to be complete with tank cover, mosquito proof inspection vent, internal uPVC stays, convex base panel & concave sump base panel, provide pipe connection to suit BSP brass bosses for screwed pipe work on the outside.NB: (The panels in the sides & base to be externally assembled with bolts) as 'BRAITHWAITE'	No	1		
C	Water level indicators	No	1		
D	Durable uPVC plastic Internal access ladder	No	1		
E	Stainless Steel External ladder to BS 4211	No	1		
F	Level regulator	No	1		
G	100x8mm thick steel plate	Lm	25		
H	Float switch	No	1		
I	Ball valve boxes	No	1		
J	Anti-vermin screens for overflow and warning pipes	No	1		
	Total Cost for Desalination Plant and associated Works carried forward to Summary Page				

ITEM	DESCRIPTION	AMOUNT (KSH)
	SUMMARY PAGE FOR MECHANICAL BUILDING SERVICES	
1	BIIL01 - Washrooms sanitary fittings	
2	BILL02 - sanitary Drainage	
3	BILL03 - Fire Hosereel	
4	BILL04 - Water reticulation	
5	BILL05 - Desalination (Reverse Osmosis) Plant	
6	ALLOW PROVISIONAL SUM OF FIFTEEN MILLION (KHS.15 Million) FOR FISH WASTE WATER TREATMENT PLANT OF CAPACITY 50MT OF WASTE PER DAY	**15,000,000.00**
7	ALLOW CONTIGENCY SUM OF FIVE MILLION (KHS.5 Million)	**5,000,000.00**
TOTAL AMOUNT FOR MECHANICAL BUILDING SERVICES TAKEN TO GRAND SUMMARY PAGE		

FRESH AND FROZEN FISH PLANT					
Item	**Description**	**Qty**	**Unit**	**Rate**	**Amount (Ksh)**
	BILL 06-MACHINE AND EQUIPMENT				
	Supply, deliver, install, test and commission the following machine and equipment.The equipment and machine to come complete with all the neccesary accessories and fittings for proper functionality.				
	INDIVIDUAL QUICK FREEZING-((IQF)				
A	Free standing monoblock Tunnel IQF belt freezer of capacity capacity 50MT/Day with the following additional specifications;Automatic CIP cleaning system,automatic air defrosting with safety automatic operation detection and light alarm.	1	Lot		
B	**REFRIGERATION EQUIPMENT FOR FOR IQF** HANBELL water cooled compressor type SPBH1150YW, Refrigeration capacity 173.4kw, section / Condensing temperature -7^{o}C/+40^{O}C Cooling tower, CBM-M-100 Cooling water pumps Galvinised steel pipes, water valves and accessories □ Control cabinet □ Freon solenoid valves, stop valves, dry-filters, thermo-expansion valaves, electronic expansion valve, site glass and related accessories □ WirE, cables, bridges and accessories □ Protecting layer +0.5mm thickness aluminum sheet) □ Copper tube (DN<28mm) and seamless tube(DN>28mm) for refrigeration system □ Galvanized steel pipes and PVC pipes for defrosting water system □ Fittings - elbows, tees, reducers, caps, insulation parts □ Refrigerant oil (HBR-B05, 114L, 6 bottle)	1	ITEM		
C	**Glazing Machine** Automatich fish glazing machine of capacity 3T/HR.With high quality SUS 304 stainless steel body,Size-4300 X 1250 X 1000mm.	2	ITEM		
	Total carried to next page				

Item	Description	Qty	Unit	Rate	Amount (Ksh)
	Total carried from previous page				
A	**Blast Freezer Machine**				
	Trolley air Blast Freezer of capacity of 50MT/Day at negative 40 degrees.The unit to be a complete unit with Polyurethane foam insulation panel,42~45kg/m3, fire resistance,200mm thick panel,surface steel of 0.5mm thickness color steel, double surface.	1	Item		
B	Ditto but a chillar blast freezer of capacity 5000kg/4hours at negative 15 deg.	1	Item		
	REFRIGERATION EQUIPMENT FOR BLAST FREEZERS ROOM				
C	Bitzer water cooled compressor type SPBH1150YW,	2	Set		
D	CABERO air coolers, CH9T30G3/76 NZ.N60-WT-F	2	Set		
E	Cooling tower, CBM-M-30	2	Set		
F	Cooling water pumps	4	No.		
G	Galvinised steel pipes, water valves and accessories	1	lot		
	Total carried to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount-Ksh
	Total carried from previous page				
A	**CONTAINERIZED ICE FLAKE PLANT**				
	The unit shall be capable of a total ice flake production of **50 tons/24 hours** The unit shall be as BITZER flake Ice Machine or equal and approved	1	Unit		
	<u>Chilled Product Cold Room</u>				
	Wall Insulations				
B	Interlocking Wall panels 150mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled with a fire resistant mineral fiber core bonded CFC free Polyurethane,				
C	Food grade galvanized and antibacterial painted	145	SM		
	Panel sizes : 4800mm x 1200mm				
D	Ditto but Floor Insulations	75	SM		
E	two layers of 75mm polystyrene floor insulation	150	SM		
F	floor vapour barrier	75	SM		
	Insulated door				
G	2500mm x 3000mm high sliding door made out o150mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled witha fire resistant mineral fiber core bonded with metal facings, suitable for fire rated wall Panels achieve three hour fire resistance ratings with a unique hidden fastener for increased aesthetic sound attenuated, Core material shall be non-toxic, does not release gases in a fire and has a smoke developed rating of zero The Door shall made complete with a freezer room door lock and automatic electric sliding mechanism. and lighting microswitches	2	No.		
	Total carried to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount-Ksh
	Total carried from previous page				
A	**Floor water proofing** The top surface of the floor insulation shall be water proofed using SIKA Polyurethene adhesive sealant and coated vapour barrier	75	SM		
	Package Condensing unit (Guntner condesing unit) to achieve the following temperatures. (Refigerant: R134A or R404) of model 6GE-40Y or equal and approved				
B	1) Negative 40 deg.C	2	No.		
C	2) Negative 15 deg.C	2	No.		
	Evaporator unit for the above condensors As **BITZER** evaporator unit or equal and approved				
D	1) Negative 40 deg.C	2	No.		
E	2) Negative 15 deg.C	2	No.		
	Control Panel				
F	Intelligent digital Freezer room control panel manufactured by the cooling units manufacturer complete with all automatic controls and all fault alarms as outlined below;	2	item		
G	Freezer room Wifi temperature and humidity data logger -60oC to +33oC complete with probes, a cable connection to a PC and provision for GSM sim card slot	2	item		
H	Solenoid valve	2	item		
I	Filter drier	2	item		
J	Low and high cut-out switch	2	item		
K	Low pressure gauge	2	item		
L	High pressure gauge	2	item		
M	65W vapor proof light fittings	12	No.		
	Total carried to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount-Ksh
	Total carried from previous page				
	Refrigerant Pipework				
A	Refrigeration pipework complete with armaflex 50mm Insulation	200	LM		
	Refrigerant				
B	Allow for the charging of the refrigeration system with necessary amount of refrigerant for initial testing and eventual operation of the cfreezer room.	1	Item		
	Anti-Vibration Mountings				
C	Anti-Vibration Mountings for the condensing unit as WOODS P.N.50417 or equal and approved.	1	Item		
	EXTRA CONDENSOR UNIT FOR THE 500MT COLDROOMS				
	Package Condensing unit (Guntner condesing unit) to achieve the following temperatures. (Refigerant: R134A or R404) of model 6GE-40Y or equal and approved				
D	1) Negative 25 deg.C	2	No.		
	Evaporator unit for the above condensors As **BITZER** evaporator unit or equal and approved				
E	1) Negative 25 deg.C	2	No.		
	Control Panel				
F	Intelligent digital Freezer room control panel manufactured by the cooling units manufacturer complete with all automatic controls and all fault alarms as outlined below;	2	item		
G	Freezer room Wifi temperature and humidity data logger -60oC to +33oC complete with probes, a cable connection to a PC and provision for GSM sim card slot	2	item		
H	Solenoid valve	2	item		
I	Filter drier	2	item		
J	Low and high cut-out switch	2	item		
K	Low pressure gauge	2	item		
L	High pressure gauge	2	item		
M	65W vapor proof light fittings	12	No.		
	Total carried to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount-Ksh
	Total carried from previous page				
	Refrigerant Pipework				
A	Refrigeration pipework complete with armaflex 50mm Insulation	200	LM		
	Refrigerant				
B	Allow for the charging of the refrigeration system with necessary amount of refrigerant for initial testing and eventual operation of the cfreezer room.	1	Item		
	Anti-Vibration Mountings				
C	Anti-Vibration Mountings for the condensing unit as WOODS P.N.50417 or equal and approved.	1	Item		
	PROCESSING EQUIPMENT				
B	**DIGITAL FISH WEIGH SCALE** Capacity at least 1,000 kgs.Dimension 1200x1200mm.	2	No		
C	**FLOOR WEIGH SCALE** Structural steel floor scale of Capacity at least 5000 kgs.Dimensios.2100 x 1500 x 1000mm thick.	2	No		
D	Lift platform AL500 Lift Capacity is 2000kgs constructed using AISI 304 stainless steel	3	No		
	BAND SAWS Food processing band saw which can manage, cutting, and processing of all frozen food including a bonito, swordfish, or a tuna at high speed.The main frame to be made from stainless steel. Has all protection safety measures and all the applicable rules				
	Large Band Saw BSM 750				
E	5HP Band saw for cutting large frozen fish.Stainless steel body.Size 1600 x 1300 x 2200mm.Saw blade dimensions.32 x 0.9 x 4610mm	2	No		
	Total carried to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount-Kshs
	Total carried from previous page				
A	**Medium Size Band Saw BSM 400** 5HP Band saw for cutting large frozen fish.Stainless steel body.Size 1250x1200x2050 mm.Saw blade dimensions.35 x 1.0 x 3830mm	1	item		
B	**METAL DETECTION MACHINE** Conveyorised Metal Detector with an LCD touchscreen display that enables the user to program in multiple products and control all the functions available within the head unit itself.As SKU: SSMECMD300X200 or equal and approved equivalent	2	No		
C	**PRODUCT CONVEYOR** Double Belt processing conveyor covering the entire processing area-65meters.The top part of the conveyor to convey fish product while the bottom part to convey waste.the conveyor to be anti-adhesive,moisture proof,and anti bacterial straps suitable for production processes.The conveyor to came with all the connecting accessories to make it functional.	2	Lines		
D	**WASTE CONVEYOR** 50m stainless steel conveyor to Convey solid waste product from the processing area to the adjacent fish meal plant conveyor system	2	Lines		
E	**VACUUM PACKING MACHINE** DZ-1000 2SA Double Chamber Vacuum Packing Machine Industrial Vacuum Sealer	3	item		
F	**Automatic strapping machine, APM8060C** The machine to have a straping tension of 40-600N,traping speed 2sec/strap with a straping	3	item		
G	**Plate freezers** Aplate freezer capable of freezing 2000-5000kg/Batch of fish.To come complete with stainless steel food grade.	1	item		
	Total carried to next page				

Item	Description	Qty	Unit	Rate (Kshs)	Amount-Kshs
	Total carried from previous page				
A	**REFRIGERATION EQUIPMENT FOR PLATE FREEZER** HANBELL water cooled compressor type SPBH1150YW, Refrigeration capacity 173.4kw, section / Condensing temperature -7^{o}C/+40^{O}C Cooling tower, CBM-M-100 Cooling water pumps Galvinised steel pipes, water valves and accessories	1	Set		
B	□ Control cabinet □ Freon solenoid valves, stop valves, dry-filters, thermo-expansion valaves, electronic expansion valve, site glass and related accessories □ WirE, cables, bridges and accessories □ Protecting layer +0.5mm thickness aluminum sheet) □ Copper tube (DN<28mm) and seamless tube(DN>28mm) for refrigeration system □ Galvanized steel pipes and PVC pipes for defrosting water system □ Fittings - elbows, tees, reducers, caps, insulation parts □ Refrigerant oil (HBR-B05, 114L, 6 bottle)	1	ITEM		
Total Cost for Machine and Equipment for Fresh and Frozen Fish Processing Plant taken to summary page					

COLDROOMS					
Item	**Description**	**Qty**	**Unit**	**Rate**	**Amount (Ksh)**
	BILL 07-COLDROOM				
	ICE STORAGE COLD ROOM-50MT				
	Wall Insulations				
	Interlocking Wall panels 80mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled with a fire resistant mineral fiber core bonded CFC free Polyurethane,				
A	Food grade galvanized and antibacterial painted	500	SM		
	Panel sizes : 4800mm x 1200mm				
	UL listed /FM approved				
B	Ditto but Roof Insulations	150	SM		
C	two layers of 75mm polystyrene floor insulation	300	SM		
D	floor vapor barrier	150	SM		
	Insulated door				
E	2500mm x 3000mm high sliding door made out of 100mm thick insulated panels The Door shall made complete with a freezer room door lock and automatic electric sliding mechanism. and lighting microswitches	2	No.		
	Total carried to next Page				

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	Total carried from previous Page				
	Floor water proofing				
A	The top surface of the floor insulation shall be water proofed using SIKA Polyurethene adhesive sealant and coated vapour barrier	360	SM		
B	**Package Condensing unit (Guntner condesing unit) to achieve the following temperatures. (Refigerant: R134A or R404) of model 4 VES10Y** 1) Negative 5 degrees	1	No.		
	Evaporator unit for the above condesors As **BITZER** evaporator unit				
C	1) Negative 5 degrees	1	No.		
	Control Panel				
D	Intelligent digital Freezer room control panel manufactured by the cooling units manufacturer complete with all automatic controls and all fault alarms as outlined below;	1	item		
	Freezer room Wifi temperature and humidity data logger -10oC to +33oC complete with probes, a cable connection to a PC and provision for GSM sim card slot	1	item		
E	Solenoid valve	1			
F	Filter drier	2			
G	Low and high cut-out switch	2			
H	Low pressure gauge	2			
I	High pressure gauge	2			
J	65W vapor proof light fittings	10	No.		
	Refrigerant Pipework				
K	Refrigeration pipework complete with armaflex 50mm Insulation	100	LM		
	Total carried to next Page				

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	Total carried from previous Page				
	Refrigerant				
A	Allow for the charging of the refrigeration system with necessary amount of refrigerant for initial testing and eventual operation of the cfreezer room.	1	Item		
	Anti-Vibration Mountings				
B	Anti-Vibration Mountings for the condensing unit as WOODS P.N.50417 or equal and approved.	2	Item		
	Condensor Mountings				
C	Allow for steel I-beams for mounting of the condensing units on a concrete plinth.	1	Item		
	Chilled Product Cold Room-(50MT)				
	Wall Insulations				
	Interlocking Wall panels 150mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled with a fire resistant mineral fiber core bonded CFC free Polyurethane,				
D	Food grade galvanized and antibacterial painted	145	SM		
	Panel sizes : 4800mm x 1200mm				
E	Ditto but Floor Insulations	75	SM		
F	two layers of 75mm polystyrene floor insulation	150	SM		
G	floor vapour barrier	75	SM		
	Insulated door				
G	2500mm x 3000mm high sliding door made out o150mm thick fire Rated HF (hidden fastener) insulated panels factory-assembled witha fire resistant mineral fiber core bonded with metal facings, suitable for fire rated wall Panels achieve three hour fire resistance ratings with a unique hidden fastener for increased aesthetic sound attenuated, Core material shall be non-toxic, does not release gases in a fire and has a smoke developed	2	No.		
	Total carried to next Page				

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	Total carried from previous Page				
	Floor water proofing				
A	The top surface of the floor insulation shall be water proofed using SIKA Polyurethene adhesive sealant and coated vapour barrier	75	SM		
	Package Condensing unit (Guntner condesing unit) to achieve the following temperatures. (Refigerant: R134A or R404) of model 6GE-40Y or equal and approved				
B	2) Negative 15 deg.C	1	No.		
	Evaporator unit for the above condensors As **BITZER** evaporator unit or equal and approved				
C	2) Negative 15 deg.C	1	No.		
	Control Panel				
D	Intelligent digital Freezer room control panel manufactured by the cooling units manufacturer complete with all automatic controls and all fault alarms as outlined below;	1	item		
E	Freezer room Wifi temperature and humidity data logger -60oC to +33oC complete with probes, a cable connection to a PC and provision for GSM sim card slot	1	item		
F	Solenoid valve	1	item		
G	Filter drier	1	item		
H	Low and high cut-out switch	1	item		
I	Low pressure gauge	1	item		
J	High pressure gauge	1	item		
K	65W vapor proof light fittings	12	No.		
	Refrigerant Pipework				
L	Refrigeration pipework complete with armaflex 50mm Insulation	50	LM		
	Total carried to next Page				

Item	Description	Qty	Unit	Rate	Amount (Kshs)
	Total carried from previous Page				
	Refrigerant				
A	Allow for the charging of the refrigeration system with necessary amount of refrigerant for initial testing and eventual operation of the cfreezer room.	1	Item		
	Anti-Vibration Mountings				
B	Anti-Vibration Mountings for the condensing unit as WOODS P.N.50417 or equal and approved.	1	Item		
Total Cost for coldroom room installation works taken to summary page					

ITEM	DESCRIPTION	AMOUNT (KSH)
	SUMMARY PAGE FOR MACHINE AND EQUIPMENT AND COLDROOMS	
1	BIIL06 - MACHINE AND EQUIPMENT	
2	BILL07- COLDROOMS	
3	ALLOW PROVISIONAL SUM OF KENYA SHILLINGS TWENTY MILLION (KHS.20 Million) FOR FISH HANDLING EQUIPMENT	20,000,000.00
4	ALLOW CONTIGENCY SUM OF KENYA SHILLINGS TEN MILLION (KHS.10 Million)	10,000,000.00
TOTAL FOR MACHINE,EQUIPMENT AND COLDROOMS TAKEN TO GRAND SUMMARY PAGE		

PROVISIONAL SUMS

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (KSH)
	PROVISIONAL SUMS Provide the following Provisional Sums to be expended at the discretion of the Project Manager for:-				
A	Signages	SUM	1	300,000	300,000.00
B	Landscaping	SUM	1	1,000,000	1,000,000.00
C	Provide a provisional sum for Boiler shed to later details	SUM	1	1,000,000	1,000,000.00
D	Bases for Low Level water tanks	SUM	1	1,000,000	1,000,000.00
E	Solar PV Power plant	SUM	1	60,000,000	60,000,000.00
F	Contingencies	SUM	1	20,000,000	20,000,000.00
	Total Provisional Sums Carried to Grand Summary				**83,300,000.00**

GRAND SUMMARY

PROPOSED COMPLETION OF FRESH AND FROZEN FISH PROCESSING SECTION AT LIWATONI COMPLEX, MOMBASA COUNTY

GRAND SUMMARY

		PAGE NO.	AMOUNT	FOR OFFICIAL USE ONLY
1	PRELIMINARIES	LIWATONI/ PRELIMS/1		
2	BUILDERS WORKS	LIWATONI/ BW/1		
4	ELECTRICAL INSTALLATION WORKS	E/SUM/1		
5	MECHANICAL INSTALLATIONS	MECH-60		
6	PROVISIONAL SUMS	LIWATONI/ PS/1		83,300,000.00
	TOTAL CARRIED TO FORM OF TENDER			

Amount in words:

……

Signature and Stamp of Tenderer: ……

Date: ……

Witness: Name and Signature:……

Address: ……

Date: ……