LAKE VICTORIA SOUTH WATER WORKS DEVELOPMENT AGENCY

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BIDDING DOCUMENT FOR

PROCUREMENT OF WORKS FOR CONSTRUCTION OF GORGOR AND KAPCHUMBA/KAPLONG BOYS HIGH SCHOOL BOREHOLES IN BOMET COUNTY

TENDER No:

LVSWWDA/T/20/2025-2026-LOT 25

PROGRAM: BUDGET 2025/2026

CATEGORY: WOMEN

CLOSING DATE: 4TH FEBRUARY, 2026

TIME: 10:00 A.M

ALL TENDERERS ARE ADVISED TO READ CAREFULLY THIS TENDERDOCUMENT IN ITS ENTIRETY BEFORE MAKING ANY BID

JANUARY 2026

TABLE OF CONTENTS

INVITATION TO TENDER

Name of Procuring Entity: Lake Victoria South Water Works Development Agency (LVSWWDA) of P.O Box 3325-40100 Kisumu
Contract Name and Description: PROCUREMENT OF WORKS FOR CONSTRUCTION OF GORGOR AND KAPCHUMBA/KAPLONG BOYS HIGH SCHOOL BOREHOLES IN BOMET COUNTY
TENDER No: LVSWWDA/T/20/2025-2026-LOT 25

The Lake Victoria South Water Works Development Agency invites sealed tenders for **PROCUREMENT OF WORKS FOR CONSTRUCTION OF GORGOR AND KAPCHUMBA/KAPLONG BOYS HIGH SCHOOL BOREHOLES IN BOMET COUNTY**

TENDER No: LVSWWDA/T/20/2025-2026-LOT 25

1. Tendering will be conducted under open tender method (National) using a standardized tender document. **Tendering is Open to all qualified Women Owned firms with the National Construction Authority (NCA) Class 7 and above under the water works category.**
2. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours from **9.00am to 5.00pm** at the address given below.
3. A complete set of tender documents may be purchased or obtained by interested tenderers upon payment of a non- refundable fee of **Kshs. 1,000** in **Banker's Cheque** and payable to the address given below.
   Tender documents may also be obtained electronically from the Public Procurement Information Portal (PPIP) **www.tenders. go.ke** and the LVSWWDA Website(s) https://www.lvswwda.go.ke/tender/. Tender documents obtained electronically will be **free of charge.**
4. Tenderers who download the tender document must forward their particulars immediately to procurement@lvswwda.go.ke *with a copy to* mmayi@lvswwda.go.ke to facilitate any further clarification or addenda.
5. Tenders shall be quoted in Kenya Shillings and shall include all taxes. Tenders shall remain **valid for 98 days** from the date of opening of tenders.
6. All Tenders must be accompanied by a **Tender Securing Declaration Form in the format provided in the tender document.**
7. The Tenderer shall chronologically serialize all pages of the tender documents submitted.
8. Completed tenders must be delivered to the **Tender Box** in the address below on or before **4TH FEBRUARY 2026 10.00am (Kenya Time)**. Completed tenders should be submitted in one original and one copy.
9. Tenders will be opened immediately after the deadline date and time specified above or any deadline date and times specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.
10. **Late tenders will be rejected.**
11. The addresses referred to above are:

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

Lake Victoria South Water Works Development Agency Office.
Lavictors House, Off Ring Road, Milimani.
P.O Box 3325 -40100, Kisumu, Kenya
Manager, Supply Chain Management: Tel: (020) 2157233
Email: procurement@lvswwda.go.ke and copy to mmayi@lvswwda.go.ke

B. Address for Submission of Tenders.

Tender Box, situated at Ground Floor
Lake Victoria South Water Works Development Agency Office.
Lavictors House, Off Ring Road, Milimani.
P.O Box 3325 -40100, Kisumu, Kenya

C. Address for Opening of Tenders.

Lake Victoria South Water Works Development Agency Office.
Lavictors House, Off Ring Road, Milimani.
P.O Box 3325 -40100, Kisumu, Kenya

Name: JACKLINE KEMUNTO
Designation: CHIEF EXECUTIVE OFFICER
Date: 26th January, 2026

PART 1 - TENDERING PROCEDURES

SECTION I: INSTRUCTIONS TO TENDERERS

A General Provisions

1. 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.**

2. Fraud and Corruption

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

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

2.3 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. 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 information that would in that respect give such firm any unfair competitive advantage over competing firms.

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

3. Eligible Tenderers

3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.7 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. Public employees and their close relatives *(spouses, children, brothers, sisters and uncles and aunts)* are not eligible to participate in the tender. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. The maximum number of JV members shall be specified in the **TDS.**

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

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

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

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

c) Has the same legal representative as another tenderer; or

d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position

to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process; or

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

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

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 or

h) Has a close business or family relationship with a professional staff of the Procuring Entity who:

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

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

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

3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender. 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.

3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4.8.A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub- consultants for any part of the Contract including related Services.

3.7 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 Tenderers that are state-owned enterprises or institutions may be eligible to compete and be awarded a Contract(s) only if they are accredited by PPRA to be (i) a legal public entity of the state Government and/or public administration, (ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and (iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it compete with firms in the private sector on an equal basis.

3.9 A Firms and individuals may be ineligible if their countries of origin (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of

the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

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

3.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan Citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. 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 provide evidence of having fulfilled his/her tax obligations by producing a valid tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4. 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 eligible 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. Tenderer's Responsibilities

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

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

5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter upon its premises and lands for the purpose of such visit. The Tenderer shall indemnify

the Procuring Entity against all liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the inspection.

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

B. Contents of Tender Documents

6. Sections of Tender Document

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT 8.

PART 1 Tendering Procedures

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

PART 2 Works Requirements

i) Section V - Drawings
ii) Section VI - Specifications
iii) Section VII - Bills of Quantities

PART 3 Conditions of Contract and Contract Forms

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

6.2 The Invitation to Tender Document (ITT) issued by the Procuring Entity is not part of the Contract documents.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 8. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

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

7. Site Visit

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

8. Pre-Tender Meeting

8.1 The Procuring Entity shall specify in the TDS if a pre-tender meeting will be held, when and where. The Procuring Entity shall also specify in the TDS if a pre-arranged pretender site visit will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

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

8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender site visit of the site of the works,

if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents in accordance with ITT 6.3. Minutes shall not identify the source of the questions asked.

8.4 The Procuring Entity shall also promptly publish anonym zed (*no names*) Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works at the web page identified in the TDS. Any modification to the Tender Documents that may become necessary as a result of the pre-tender meeting and the pre-arranged pretender site visit, 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. Nonattendance at the pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9. Clarification and amendments of Tender Documents

9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the TDS or raise its enquiries during the pre-Tender meeting and the pre- arranged pretender visit of the site of the works if provided for in accordance with ITT 8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the TDS prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender Documents in accordance with ITT 6.3, including a description of the inquiry but without identifying its source. If specified in the TDS, the Procuring Entity shall also promptly publish its response at the web page identified in the TDS. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriately following the procedure under ITT 8.4.

10. Amendment of Tendering Document

10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.

10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's web page in accordance with ITT 8.4.

10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 25.2 below**.**

C. Preparation of Tenders

11. Cost of Tendering

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

12. Language of Tender

12.1 The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in 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.

13. Documents Comprising the Tender

13.1 The Tender shall comprise the following:

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

13.2 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 Agreement. The Tenderer shall chronologically serialize pages of all tender documents submitted.

13.3 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.

14. Form of Tender and Schedules

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

15. Alternative Tenders

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

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

15.3 Except as provided under ITT 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. 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.

16. Tender Prices and Discounts

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

16.2 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.

16.3 The price to be quoted in the Form of Tender, in accordance with ITT 14.1, shall be the total price of the Tender, including any discounts offered.

16.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 14.1.

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

16.6 Where tenders are being invited for individual lots (contracts)or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 16.4, provided the Tenders for all lots (contracts) are opened at the same time.

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

17. Currencies of Tender and Payment

17.1 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 Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya shall device own ways of getting foreign currency to meet those expenditures.

18. Documents Comprising the Technical Proposal

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

19. Documents Establishing the Eligibility and Qualifications of the Tenderer

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

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

19.3 A margin of preference will not be allowed. Preference and reservations will be allowed, individually or in joint ventures. Applying for eligibility for Preference and reservations shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

19.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a 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.

19.5 The purpose of the information described in ITT 19.4 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.

19.6 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 6.3. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

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

19.8 If a tenderer fails to submit the information required by these requirements, its 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.

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

i) if the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,

ii) if the contract has been awarded to that tenderer, the contract award will be set aside,

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

19.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 6.7 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

20. Period of Validity of Tenders

20.1 Tenders shall remain valid for the Tender Validity period specified in the TDS. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 24). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 21.1, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting the request shall not be required or permitted to modify its Tender, except as provided in ITT 20.3.

20.3 If the award is delayed by a period exceeding the number of days to be specified in the TDS days beyond the expiry of the initial tender validity period, the Contract price shall be determined as follows**:**

a) in the case of **fixed price** contracts, the Contract price shall be the tender price adjusted by the factor specified in the **TDS**;

b) in the case of **adjustable price** contracts, no adjustment shall be made; or in any case, tender evaluation shall be based on the tender price without taking into consideration the

applicable correction from those indicated above.

21. Tender Security

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

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

a) an unconditional Bank Guarantee issued by reputable commercial bank); or
b) an irrevocable letter of credit;
c) a Banker's cheque issued by a reputable commercial bank; or
d) another security specified **in the TDS**,

21.3 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 20.2.

21.4 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.

21.5 If a Tender Security is specified pursuant to ITT 21.1, 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 nonresponsive or a bidder declines to extend tender validity period.

21.6 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.

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

e) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension thereto provided by the Tenderer; or
f) if the successful Tenderer fails to:
   i) sign the Contract in accordance with ITT 50; or
   ii) furnish a Performance Security and if required in the TDS, and any other documents required in the TDS.

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

21.9 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.

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

22. Format and Signing of Tender

22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies

of the Tender, in the number specified in the TDS and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

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

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

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

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

D. Submission and Opening of Tenders

23. Sealing and Marking of Tenders

23.1 Depending on the sizes or quantities or weight of the tender documents, a tenderer may use an envelope, package or container. The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

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

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

c) if alternative Tenders are permitted in accordance with ITT 15, 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.

23.2 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 that are misplaced or opened prematurely will not be accepted.

24. Deadline for Submission of Tenders

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

24.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations

of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

25. Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 24. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

26. Withdrawal, Substitution, and Modification of Tenders

26.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 22.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

a) prepared and submitted in accordance with ITT 22 and ITT 23 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;"and

b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 24.

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

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

27. Tender Opening

27.1 Except in the cases specified in ITT 23 and ITT 26.2, 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 24.1, shall be as specified in the TDS.

27.2 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.

27.3 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.

27.4 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 authorization to request the modification and is read out at Tender opening.

27.5 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.

27.6 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 Bills of Quantities are to be initialed by the members of the tender opening committee attending the opening. The number of representatives of the Procuring Entity to sign shall be specified in the TDS.

27.7 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 25.1).

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

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

27.9 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 upon request.

E. Evaluation and Comparison of Tenders

28. Confidentiality

28.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 46.

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

28.3 Notwithstanding ITT 28.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any **matter related to the tendering process, it shall do so in writing.**

29. Clarification of Tenders

29.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 33.

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

30. Deviations, Reservations, and Omissions

30.1 During the evaluation of tenders, the following definitions apply:

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.

31. Determination of Responsiveness

31.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 13.

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

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

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; or

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

31.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 18, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.

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

32. Non-material Non-conformities

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

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

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

33. Arithmetical Errors

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

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

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

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

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

33.2 Tenderers shall be notified of any error detected in their bid during the notification of a ward.

34. Currency provisions

34.1 Tenders will priced be in Kenya Shillings only. Tenderers quoting in currencies other than in Kenya shillings will be determined non-responsive and rejected.

35. Margin of Preference and Reservations

35.1 No margin of preference shall be allowed on contracts for small works.

35.2 Where it is intended to reserve the contract to specific groups under Small and Medium Enterprises, or enterprise of Women, youth and/or persons living with disability, 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/firms belonging to those specified groups are the only ones eligible to tender. Otherwise if no so stated, the invitation will be open to all tenderers.

36. Nominated Subcontractors

36.1 Unless otherwise stated in the **TDS**, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Procuring Entity.

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

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

37. Evaluation of Tenders

37.1 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 Best Evaluated Tender in accordance with ITT 40.

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

a) price adjustment due to discounts offered in accordance with ITT16;
b) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT39;
c) price adjustment due to quantifiable nonmaterial non-conformities in accordance with ITT 30.3; and
d) any additional evaluation factors specified **in the TDS** and Section III, Evaluation and Qualification Criteria.

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

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

38. Comparison of Tenders

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

39. Abnormally Low Tenders

39.1 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 Tenderers is compromised.

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

39.3 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.

40. Abnormally High Tenders

40.1 An abnormally high 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.

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

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

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

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

41. Unbalanced and/or Front-Loaded Tenders

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

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

a) accept the Tender; or

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; or

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

d) reject the Tender,

42. Qualifications of the Tenderer

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

42.2 The determination shall be based upon an examination of the documentary evidence of the

Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

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

42.4 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.

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

42.6 After evaluation of the price analyses, if 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.

43. Best Evaluated Tender

43.1 Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Best Evaluated Tender. The Best 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.

44. Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders.

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

F. Award of Contract

45. Award Criteria

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

46. Notice of Intention to enter into a Contract

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

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

47. Standstill Period

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

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

48. Debriefing by the Procuring Entity

48.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 46, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

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

49. Letter of Award

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

50. Signing of Contract

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

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

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

51. Appointment of Adjudicator

51.1 The Procuring Entity proposes the person named in the TDS to be appointed as Adjudicator under the Contract, at the hourly fee specified in the TDS, plus reimbursable expenses. If the Tenderer disagrees with this proposal, the Tenderer should so state in his Tender. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the Special Conditions of Contract (SCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

52. Performance Security

52.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and, any other documents required in the TDS, in accordance with the General Conditions of Contract, subject to ITT 40.2 (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.

52.2 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.

52.3 Performance security shall not be required for contracts estimated to cost less than Kenya shillings five million shillings**.**

53. Publication of Procurement Contract

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

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

54. Procurement Related Complaints

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

Section II - Tender Data Sheet (TDS)

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

A. General	
ITT 1.1	The name of the Contract is: **PROCUREMENT OF WORKS FOR CONSTRUCTION OF GORGOR AND KAPCHUMBA/KAPLONG BOYS HIGH SCHOOL BOREHOLES IN BOMET COUNTY** The Reference Number of the Contract is: **LVSWWDA/T/20/2025-2026-LOT 25**
ITT 2.3	The information made available on competing firms is as follows*:* ***N/A***
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: ***N/A***
B. Content of Tender Document	
ITT 8.1	A mandatory pretender site visit meeting shall take place at the following date, time and place: ***Not Applicable***
ITT 8.2	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than **30th January, 2026 at 4.00pm**
ITT 8.4	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender site visit will be published is; www.lvswwda.go.ke and www.tenders.go.ke
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: ***1.*** Name of Procuring Entity; ***Lake Victoria South Water Works Development Agency (LVSWWDA)*** ***2.*** Physical address for hand Courier Delivery to an office or Tender Box; ***Tender documents to be deposited in the Tender Box provided at the Ground Floor, Reception Area of LVSWWDA.*** ***3.*** Postal Address; ***LVSWWDA, P. O. Box 3325-40100, Kisumu.*** 4. Insert name, telephone number and e-mail address of the officer to be contacted.; ***Manager, Supply Chain Management,*** Tel: (020) 2157233 ***Email;*** *procurement@lvswwda.go.ke* ***and cc to*** *mmayi@lvswwda.go.ke*
C. Preparation of Tenders	
ITP 13.1 (h)	The Tenderer shall submit the following additional documents in its Tender; ***All documents to be submitted shall be included under Section III – Evaluation and Qualification Criteria***
ITT 15.1	Alternative Tenders ***shall not*** be considered.
ITT 15.2	Alternative times for completion ***shall not be permitted***.
ITT 15.4	Alternative technical solutions shall be permitted for the following parts of the Works: ***Not Applicable***
ITT 16.5	The prices quoted by the Tenderer ***shall be fixed.***
ITT 20.1	The Tender validity period shall be ***98 days.***
ITT 20.3 (a)	(a) ***Not Applicable.*** (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By _____% of the local currency portion of the Contract price adjusted to reflect local

	inflation during the period of extension, and (ii) By_____% the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension; ***Prevailing consumer price index obtained from Kenya National Bureau of Statistics, or the monthly inflation rate issued by the Central Bank of Kenya for both (i) and (ii)***
ITT 21.1	**Tender Securing Declaration Form in the format provided in the tender document.**
ITT 21.2 (d)	A Tender Security **shall not be required.** The Tenderer shall provide; 1.) Tender Securing Declaration Form in the format provided in the tender document**.**
ITT 21.8	The Procuring Entity may declare the Tenderer ineligible to be awarded a contract by the Procuring Entity for a period of: ***as provided in the laws of Kenya***
ITT 22.1	In addition to the original of the Tender, the number of hard copies is: **One Copy (1) of Original**
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: ***Tender Specific Written Power of Attorney, Signed, rubber stamped and dated.***
D. Submission and Opening of Tenders	
ITT 24.1	(A) For Tender submission purposes only, the Procuring Entity's address is: Lake Victoria South Water Works Development Agency Physical Address: Lavictors House, Off Ring Road, Milimani. Postal Address, P.O. Box 3325-40100, Kisumu Date and time for submission of Tenders: ***on or before 4TH FEBRUARY 2026 at 10.00am*** Tenders **shall not be submi**tted electronically.
ITT 27.1	The Tender opening shall take place at the time and the address for Opening of Tenders Provided below: Lake Victoria South Water Works Development Agency Physical Address: Lavictors House, Off Ring Road, Milimani. Postal Address: P.O. Box 3325-40100, Kisumu State date and time of tender opening ***4TH February, 2026 at 10.00am***
ITT 27.6	The number of representatives of the procurement entity to sign are: ***At least Three (3)***
E. Evaluation, and Comparison of Tenders	
ITT 32.3	The adjustment shall be based on the ***highest*** price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 35.2	The invitation to tender is Reserved to ***Women Owned Firms only***
ITT 36.1	At this time, the Procuring Entity ***does not intend*** to execute certain specific parts of the Works by subcontractors selected in advance. **Note** a) The works shall be awarded as one package but implemented in two phases. The success of phase 1(Drilling, Capping and Test Pumping) will determine whether phase 2(Equipping and Civil Works) will be implemented.

	b) The Borehole Construction and 24Hours constant discharge test, recovery test measurements and water quality analysis is dependent on the success of the borehole. A dry or low yield borehole (less than 1.75m^3/hr) implies that the Client WILL NOT proceed with the subsequent works (installation of steel casings, gravel pack and test pumping). c) Borehole data from {b} above will be submitted to the Agency for review before approval is issued for Design for a submersible pump and accessories. A Quotation for submersible pump and accessories will then be issued to be filled and submitted for review and approval before commencement of borehole equipping. The phase 2(Equipping and Civil Works) will only commence after the contractor obtains the written approval from Lake Victoria South Water Works Development Agency.
ITT 36.2	Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: 25% *of the total contract amount.* Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience
ITT 36.3	The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows: ***Not Applicable***
ITT 37.2 (d)	Additional requirements apply. ***All requirements are detailed in the evaluation criteria in Section III,***
ITT 45.1	**Award Criteria:** ***The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.*** ***In addition, any contractor terminated on grounds of integrity and/or fraud or corruption is ineligible to tender***
ITT 46	***Notification of intent to enter into a contract shall be communicated through E-mail. Tenderers must therefore provide their E-mail addresses:*** ***Email Address 1 (Mandatory):*** _____ ***Email Address 2: (Optional):*** _____
ITT 51.1	The person named to be appointed as Adjudicator is: ***N/A*** _
ITT 52.1	***Performance Security: Performance Security shall be required only for Contracts above Ksh. 5 Million as per the requirements of Reg. 135(1) of the Public Procurement and Asset Disposal Regulations, 2020. The performance Security shall be in the form of an unconditional Bank Guarantee amounting to 1% of the contract sum in the format contained in this document.***
ITT 52.2	Other documents required in addition to the Performance Security are: ***Detailed Work Program***
ITT 54.1	The procedures for making a Procurement-related Complaint are detailed in the "Notice of Intention to Award the Contract" herein and are also available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to: For the attention: **Jackline Kemunto** Title/position: **Chief Executive Officer** Procuring Entity: **Lake Victoria South Water Works Development Agency** Email address: info@lvswwda.go.ke. In summary, a Procurement-related Complaint may challenge any of the following (among others): (i) the terms of the Tender Documents; and (ii) the Procuring Entity's decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. General Provisions

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.

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 should use **the Standard Tender Evaluation Document for Goods and Works** for evaluating Tenders.

Evaluation and contract award Criteria

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

2. Preliminary examination for Determination of Responsiveness

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements of "Part 2 – Procuring Entity's Works Requirements", including checking for tenders with unacceptable errors, abnormally low tenders, abnormally high tenders and tenders that are front loaded. 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 **irresponsive and will not be considered further**.

PRELIMINARY EVALUATION CRITERIA

S/NO.	Parameter	YES	NO
1.	Proof of Registration with Registrar of Companies. Companies Incorporated under the Company's Act must in addition submit Copy of recent Certificate of Confirmation of Directors and Shareholding (CR12) issued within the last 12 months from the date of tender opening. *(This may be verified with the Registrar of Companies)*		
2.	NCA Registration Category 7 (water works) and above		
3.	Must submit a copy of **VALID** National Construction Authority Practicing License under the NCA Water Works Category.		
4.	Must have a **VALID** Borehole Drilling License as either Main Contractor or Sub-Contractor for Drilling. (If the bidder is not the Driller, then either; Subcontract Agreement or signed Intent to enter Sub-contractor Agreement or Commitment Letter, must be submitted with the Borehole Drilling License.)		
5.	Copy of **VALID** Tax Compliance Certificate issued by the Kenya Revenue Authority *(Will be verified on the KRA TCC Checker).* The Tax Compliance Certificate shall be valid at least up to the Tender Closing date.		
6.	Form of Tender duly Completed, signed, dated and stamped by the Tenderer in the format provided.		

S/NO.	Parameter	YES	NO
7.	Must submit a Duly Completed, Signed, dated and Stamped Tenderer's Eligibility - Confidential Business Questionnaire in format provided		
8.	Submit a duly completed, signed, dated and stamped Certificate of Independent Tender Determination in format provided		
9.	Submit a duly completed, signed, dated and stamped Self Declaration that the person/tenderer is not debarred in the matter of the Public Procurement and Asset Disposal Act 2015 (Form SD1)		
10.	Submit a duly completed, signed, dated and stamped Self Declaration that the person/tenderer will not engage in any corrupt or fraudulent practice (Form SD2		
11.	Submit a duly completed, signed, dated and stamped Declaration and Commitment to Code of Ethics Code Form in format provided		
12.	Bills of Quantities duly Completed, paginated, signed and stamped by the Tenderer in the format provided		
13.	Must submit a Duly Completed, Signed, dated and Stamped Tenderer Information Form in format provided		
14.	Submit a duly completed, signed, dated and stamped **Tender Securing Declaration Form** attached to this tender document.		
15.	Submit a Tender **Specific** Written Power of Attorney as per the **ITT 22.3.**		
16.	Proof of Registration within County of residence. Submit a valid relevant current Trading License / Single Business Permit issued by the County Government.		
17.	Must submit evidence on financial standing such as profit and loss statements and audited accounts reported within the last twelve (12) calendar months of the date of tender document and signed by auditor(s) approved by Institute of Public Accountants of Kenya (ICPAK).		
18.	Must Provide **VALID** Access to Government Procurement Opportunities (AGPO) registration certificate for ***Women*** as per the Notice of Invitation to Tender Notice		
19.	Properly bound, good-presented document. The tender document shall be paginated / serial numbered. All bidders are required to submit their documents paginated in a continuous ascending order i.e. sequentially paginated, from the first page to the last in this format; *(i.e. 1, 2, 3…..... n where n is the last page)*		
	RESPONSIVE/NON-RESPONSIVE (YES/NO)		
	At this stage, the tenderers submission will either be responsive or non- responsive. The non- responsive submission will be eliminated from the entire evaluation process and will not be considered further. ***NB: Bidders are also informed to organize their evidentiary documentation in the order above for ease of reference***		

3. Tender Evaluation (ITT 35) Price evaluation: in addition to the criteria listed in ITT 35.2 (a) –

(c) the following criteria shall apply:

i) Alternative Completion Times, if permitted under ITT 13.2, will be evaluated as follows:

……**N/A**……

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

iii) Other Criteria; if permitted under ITT 35.2(d): See Section 8B: Qualification Criteria

4. Multiple Contracts

Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on

basis of Lots and the lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.

OPTION 1

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

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

OPTION 2

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

5. Alternative Tenders (ITT 13.1)

An alternative if permitted under ITT 13.1, will be evaluated as follows: **N/A**

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

6. Margin of Preference is not applicable

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

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

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

i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of **Kenya Shillings Ten million (Kshs. 10,000,000/=)**

ii) Minimum average annual construction turnover of **Kenya Shillings Forty million (Kshs. 40,000,000/=),** equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 5 **years,** calculated from the following formula:

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

iv) **Contractor's Representative and Key Personnel**, which are specified as in Table below:

No.	Position	Qualifications	Total Work Experience (years)	In Similar Works Experience (years)
1	Project Manager- One (1 No.)	B.Sc. Civil Engineering	10	5
2	Hydrogeologist	BSc. Geology	8	5
3	Site Engineer - One (1No.)	B.Sc. Civil Engineering	8	5
4	Drilling Technician	Diploma in Water Engineering/ Geological Studies	15	10
5	Engineering Surveyor - One (1No.)	B.Sc. Surveying or Higher National Diploma (HND) in Surveying	8	5
6	Electromechanical Engineer – One (1 No.)	B.Sc. Mechanical Engineering or Higher National Diploma (HND) in Mechanical Engineering	8	5
7	Foremen (Civil Works)	Higher National Diploma (HND) in Civil Engineering/Building/ Construction or equivalent	8	5
	NB: Bidders are also informed to organize their evidentiary documentation in the order above for ease of reference			

v) **Contractors key equipment** listed on the table "Contractor's Equipment" below and more specifically listed as

vi) Other conditions depending on their seriousness.

a) **History of non-performing contracts**:
Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last **5 years**. The required information shall be furnished in the appropriate form.

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

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

8. QUALIFICATION FORM SUMMARY

1	2	3	4	5
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI - 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by Kenya Revenue Authority in accordance with ITT 3.14.	Attachment	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI - 1.1 and 1.2, with attachments	
6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI - 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since **1st January 2020**	Form CON-2	
8	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	

1	2	3	4	5
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	FormCON-2	
10	Litigation History	No consistent history of court/arbitral award decisions against the tenderer since 1st January 2017	Form CON - 2	
11	Financial Capabilities	The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction **cash flow** requirements estimated as Kenya Shillings **Twenty-Five Million (Kshs. 25,000,000**) equivalent for the subject contract(s) net of the Tenderer's other commitments. (i) The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. (ii) 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 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	
12	Average Annual Construction Turnover	Minimum average annual construction turnover of **Kenya Shillings Twenty Million (Kshs. 20,000,000)** equivalent calculated as estimated project cost divided by **1** years multiplied by a factor of 2.	Form FIN - 3.2	

1	2	3	4	5
Item No.	**Qualification Subject**	**Qualification Requirement**	***Document To be Completed by Tenderer***	***For Procuring Entity's Use (Qualification met or Not Met)***
13	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last **5** years, starting **1st January 2020.**	**4.** Form EXP - 4.1 **Experience**	
14	Specific Construction & Contract Management Experience	A minimum number of **Five** 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 2020 and tender submission deadline i.e. three contracts, each of minimum value **Kenya shilling Ten Million (Ksh. 10,000,000)** equivalent. The contractor shall demonstrate that he has successfully undertaken a similar project in the past five years:	Form EXP 4.2(a)	

TECHNICAL EVALUATION (100 marks)				
1. General Experience (10 marks)			**Marks/Per**	**Total Score**
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 5 No of projects.			2	10
2.Specific construction Experience (40 marks)				
A minimum number of **two** similar contracts (Experience as contractor in Drilling and Equipping) projects of similar nature and complexity. The projects must have been undertaken within the last 6 years. To comply with this requirement, works cited should be 100% complete Drilling, Equipping, Construction of Water Kiosks, Pipeline Extension, erection of water towers with tanks of minimum capacity 10m3 and Fencing) specified below that have been satisfactorily and 100% completed as a prime contractor, joint venture member, management contractor or sub-contractor. (This may be verified with the respective Contracting Authority) The contracts should be tabulated comprising of: 1. Project Name, 2. Project Value and Scope, 3. Client/PE, 4. PE/Client Contact Person and supported by signed contract agreement or letter of award and completion certificates) each of minimum value **Kenya shilling Ten million (Kshs. 10,000,000)** equivalent			20	40
3. Critical Equipment (10 marks) Leased or owned –Lease agreements/logbooks attached				
NO	**Equipment Type and Characteristics**	**Min. Number Required**	**Marks/Per**	**Total Score**
1.	Drilling Rig: Rotary hydraulic type or down-the-hole hammer rig capable of drilling up to 350m depth.	1	2	10
2.	Test Pumping Unit	1	1	
4.	2 No. Tipping trucks of Min 14 Ton capacity.	1	1	
5.	Concrete Vibrator	1	1	
6.	A batch mixer	1	1	
7.	Dewatering machine	1	1	
8.	A survey Equipment	1	1	
9.	A roller compaction machine on site	1	1	
10.	Plumbing and pipe fitting tools	1	1	
4. Experience of Key Personnel (15 marks)				
Position	**Qualifications**	**Total Work Experience (years)**	**In Similar Works Experience (years)**	**Marks**	**Total Score**

Project Manager (1 No.)	B.Sc. Civil Engineering, Hydrogeology/Geology/Water Engineering	10	5	3	15
Hydrogeologist - (1 No.)	B.Sc. Geology	8	5	2	
Site Engineer - (1No.)	B.Sc. Civil Engineering	8	5	2	
Technician Surveyor - (1No.)	Higher National Diploma (HND) in Surveying	8	5	2	
Electromechanical Engineer – (1 No.)	· B.Sc. Mechanical Engineering or Higher National Diploma (HND) in Mechanical Engineering	8	5	2	
Foremen (Civil Works)	· Higher National Diploma (HND) in Civil Engineering/Building/ Construction or equivalent	8	5	2	
Driller – One	· Certificate in Drilling Operations and Management or equivalent	8	5	2	
5. Financial Capability (15 marks)					
(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as **Kenya Shillings Twenty-Five million (Kshs. 25,000,000)** equivalent for the subject contract(s) net of the Tenderer's other commitments.				5	10
(ii) The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.				5	
(iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the Procuring Entity, for the last **3 years** shall be submitted and must demonstrate the current soundness of the Tenderer's Financial position and indicate its prospective long-term profitability.				2	5
Average Annual Construction Turnover: Minimum average annual construction turnover of Kenya Shillings Twenty million (Kshs. 20,000,000) equivalent.				3	
6. Other Requirements (7 marks)					
Method statement				2	7
Work Programme				2	
ESHS Management and Implementation Plans				1	

Site Organization and Organogram				**1**	
Mobilization schedule				1	
ADDITIONAL INFORMATION TO BE PROVIDED (3 marks)					
The following additional information to be provided by the bidder					
a) Litigation Information				1	3
Information regarding litigation, current if any					
b) Current Work Commitment				1	
Information, in a tabular format, on the Tenderer's current work commitment whether as the main contractor or sub-contractor					
c) Ongoing contracts with the Lake Victoria South Water Works Development Agency. Information, in a tabular format, on the Tenderer's current work commitment as the main contractor				1	
NOTE:					
Only Bidders who attain minimum technical score of 80% (in B above) will proceed to the next phase of financial evaluation.					
Total marks					**100**
	PASS MARK IS: 80%				
NB: Bidders are also informed to organize their evidentiary documentation in the order above for ease of reference					

FINANCIAL EVALUATTION

Stage 1

This will include the following: -

- Confirmation of and considering Bill of Quantities completed and signed.
- Conducting a financial comparison for the firms that passed preliminary and technical evaluation

Stage 2 and Post Qualification

The lowest evaluated tender having passed stage 1 above shall be the winning bid subject to the employer's right to exercise due diligence relating to confirmation of information submitted by the bidder. **The LVSWWDA may conduct post-qualification as it deems necessary** in accordance with ''The Public Procurement & Disposal Act 2015 Section 83 (1), which provides that *''An evaluation committee may, after tender evaluation, but prior to the award of the tender, conduct due diligence and present the report in writing to confirm and verify the qualifications of the tenderer who submitted the lowest evaluated responsive tender to be awarded the contract in accordance with this Act''***.** Any bidder who shall be found to have supplied false or misleading information shall be disqualified and the next lowest tender that has passed stage 1 shall be considered

In addition, any contract terminated on grounds of integrity and/or fraud or corruption is ineligible to tender. These bidders shall be disqualified and the next lowest tender that has passed stage 1 shall be considered.

QUALIFICATION FORMS

1. FORM EQU: EQUIPMENT

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

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

Omit the following information for equipment owned by the Tenderer.

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

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

3. FORM PER-2:

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

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

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

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

Declaration

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

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

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

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

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

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

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature:_____

Date: (day month year): _____

4. TENDERERS QUALIFICATION WITHOUT PRE-QUALIFICATION

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.

4.1 FORM ELI -1.1 Tenderer Information Form

Date:_____

ITT No. and title: _____

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation: _____
Tenderer's legal address [in country of registration]:
1. 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 and a list of Board of Directors.

4.2 FORM ELI -1.2

Tenderer's JV Information Form

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

Date:_____

ITT No. and title:_____

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.8. 2. Included are the organizational chart and a list of Board of Directors.

4.3 FORM CON - 2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____

Date:_____ J

V Member's Name_____I

TT No. and title: _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
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]*

4.4 FORM FIN – 3.1:

Financial Situation and Performance

Tenderer's Name: _____

Date:_____

JV Member's Name_____

ITT No. and title: _____

4.4.1 Financial Data

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

4.4.2 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		

4.4.3 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:

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

1.1.1.2. be independently audited or certified in accordance with local legislation.

1.1.1.3. be complete, including all notes to the financial statements.

1.1.1.4. 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

4.5 FORM FIN – 3.2

Average Annual Construction Turnover

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

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

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

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

4.6 FORM FIN – 3.3:

Financial Resources

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

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

4.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

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

Current Work Commitment

S/N	**Name of Contract**	**Procuring Entity's**	**Value of Outstanding Work**	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months
		Contact Address, Tel,	[Current **Kenya Shilling** /month Equivalent]		[**Kenya Shilling** /month)]
1					
2					
3					
4					
5					

4.8 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

Page _____ of _____ pages

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

4.9 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:				

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

Specific Construction and Contract Management Experience (cont.)

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

4.11 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____

Date: _____

Tenderer's JV Member Name: _____

Sub-contractor's Name[2] (as per ITT 34): _____

ITT No. and title: _____

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

1. Key Activity No One: -

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

2. Activity No. Two

3. ……

[2] If applicable

OTHER FORMS

5. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

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

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

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

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

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

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

Request for Tender No.: *[insert identification*]

Name and description of Tender *[Insert as per ITT)*

Alternative No.: [*insert identification No if this is a Tender for an alternative*]

To: Lake Victoria South Water Works Development Agency

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

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

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

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

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

4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us. We further understand that you are not bound to accept the lowest or any tender you may receive.

5. We, the undersigned, further declare that:

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

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

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

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

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

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

Option 2, in case of multiple lots:

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

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

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

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

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

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

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

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

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

xiv) *State-owned enterprise or institution:* [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITT 3.8*];

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

Name of Recipient	Address	Reason	Amount

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

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

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

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

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

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

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

a) Tenderer's Eligibility; Confidential Business Questionnaire – to establish we are not in any conflict to interest.
b) Certificate of Independent Tender Determination – to declare that we completed the tender without colluding with other tenderers.
c) Self-Declaration of the Tenderer – to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal

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

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

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

Signature of the person named above: [*insert signature of person whose name and capacity are shown above*]
Date signed [*insert date of signing*] day of [*insert month*], [*insert year*]
Date signed_____day of_____, _____

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

A. TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

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

(a) **Tenderer's details**

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

General and Specific Details

b) Sole Proprietor, provide the following details.

Name in full_____Age_____ Nationality_ _____Country of Origin_____ Citizenship __ _____

c) Partnership, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

d) Registered Company, provide the following details.

i) Private or public Company_____

ii) State the nominal and issued capital of the Company_____

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

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

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

i) Are there any person/persons in Lake Victoria South Water Works Development Agency who has/have an interest or relationship in this firm? Yes/No……

If yes, provide details as follows.

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

ii) Conflict of interest disclosure

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

f) Certification

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

Full Name_____ Title or Designation_____

_____ _____

(Signature) *(Date)*

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 tenders] in response to the request for tenders made by:_____[Name of Tenderer] do hereby make the following statements that I certify to be true and complete in every respect:

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

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

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

3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;

4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
   a) has been requested to submit a Tender in response to this request for tenders;
   b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities orexperience;

5. The Tenderer discloses that [check one of the following, as applicable:
   a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
   b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;

6. In particular, without limiting the generality of paragraphs (5)(a) or (5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   a) prices;
   b) methods, factors or formulas used to calculate prices;
   c) the intention or decision to submit, or not to submit, a tender; or
   d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;

7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph (5)(b) above;

8. the terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name_____ Title__ Date _____

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

C. SELF - DECLARATION FORMS

FORM SD1

SELF-DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENTAND ASSET DISPOSALACT 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/Director of ……..…….. *(Insert name of the Company)* who is a Bidder in respect of Tender No. ……for Lake Victoria South Water Works Development Agency 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 herein 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 Lake Victoria South Water Works Development Agency *and* duly authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of Lake Victoria South Water Works Development Agency 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 Lake Victoria South Water Works Development Agency
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 herein above is true to the best of my knowledge information and belief.

…… ……..…… .....……

(Title) (Signature) (Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

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

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

Name of Authorized signatory……..... Sign…….....

Position…….....…….....

Office address……. Telephone…….....……
E-mail…….....….....…
Name of the Firm/Company…….....……

Date…….....…. (Company Seal/ Rubber Stamp where applicable)

Witness

Name ……..... Sign.....
Date……

D. APPENDIX 1- FRAUD AND CORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

2. 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.

3. Requirements

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.

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

1) a person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;

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

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

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

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

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

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

   a) shall not take part in the procurement proceedings;

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

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

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

7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

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

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

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

   ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or

recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v) "obstructive practice" is:

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

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

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

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

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

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to 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.

7. FORM OF TENDER SECURITY - DEMAND BANK GUARANTEE

Beneficiary: _____

Request for Tenders No: _____

Date: _____

TENDER GUARANTEE No.: _____

Guarantor: _____

1. We have been informed that _____ (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (hereinafter called "the Tender") for the execution of _____

2. under Request for Tenders No. _____ ("the ITT").

3. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

4. 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 thereto provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

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

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

[signature(s)]

FORM OF TENDER SECURITY (TENDER BOND)

[The Surety shall fill in 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* Procuring Entity*],* as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of* Procuring Entity*]* as Obligee (hereinafter called "the Procuring Entity") 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 assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Principal has submitted or will submit a written Tender to the Procuring Entity dated the____day of_____, 20 , for the supply of *[name of Contract]* (hereinafter called the "Tender").

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:
   a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or
   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

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

4. The Surety hereby agrees that its obligation will remain in full force and effect up to 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 nameand title) *(Printed name and title)*

TENDER-SECURING DECLARATION FORM

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

Date: ..... *[insert date (as day, month and year) of Tender Submission]*
Tender No.: ..... *[insert number of tendering process]*
To:..... *[insert complete name of Purchaser]* I/We, the undersigned, declare that:

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

2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we – (a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.

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

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

Signed:……..……..….. Capacity / title (director or partner or sole proprietor, etc.) …….…….....……. Name: …….. Duly authorized to sign the bid for and on behalf of: *[insert complete name of Tenderer]*

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

Appendix to Tender

Schedule of Currency requirements

Summary of currencies of the Tender for (Name of Tender) ……..

Name of Currency	Amount Payable
Local Currency:	Accepted Contract Price
Foreign Currency No. 1	
Foreign Currency No. 2	
Foreign Currency No. 3	
Provisional Sum expressed in local currency	

PART II - WORK REQUIREMENTS

SECTION V – DRAWINGS
Drawings provided separately

SECTION VI – TECHNICAL SPECIFICATIONS

GENERAL

Provision of equipment material and labour

The Contractor shall provide all equipment, transport, consumable materials and labour necessary for the satisfactory COMPLETION of the works in compliance with the specifications herein. The Engineer reserves the right to inspect plant and materials prior to Contractor selection, and may reject plant or material that in his/her opinion is substandard or inappropriate. The Contractor shall provide full descriptions of all plants to be deployed for these works. The Contactor shall present method statements describing in detail the proposed approach to work.

The Contactor shall provide summary detail of the experience of key personnel to be deployed for these works.

Occupation of site

The Employer will provide land on which the works shall be constructed. The Contractor shall be given possession of such parts of the site that he requires for activities related to construction works including storage of raw materials, equipment and setting up of camp during the period of Contract provided his operation does not interfere with the daily activities of the Employer.

The Contractor shall not enter upon or occupy with men, tools, equipment and materials any land other than the land or right of way provided by the Employer

Diligent performance

The Contractor shall at all times perform the Works diligently and in accordance with sound professional practice. He/she shall not proceed from one stage of works to another without the express permission of the Engineer.

Decisions regarding temporary halt, discontinuing of any element or part of any element of these works, or abandonment of these works, shall be discussed jointly between the Contractor and the Engineer before any further actions are authorised by the Engineer. The Engineer's decision shall be final.

The Engineer will require a written submission justifying any steps taken by the successful bidder without the Engineer's approval. An unsatisfactory explanation shall lead to non-payment for works undertaken without prior agreement, and may be included for consideration as liquidated damages.

Drawings

The project drawings shall comprise

(a) The drawings provided in the book of drawings issued for Tender

(b) Such other drawings and/or sketches as are issued from time to time by the

Engineer to deal with design modifications in response to on-site conditions

Record drawing

As the work proceeds the Contractor shall mark up 'As Built' details on a set of prints of the Contract Drawings modified to portray the works as actually constructed and issue to the Engineer's representatives for approval within 7 days of COMPLETION of the works covered by each drawing.

Level datum

It shall be the responsibility of the Contractor before commencing work to obtain from the Engineer in writing the values and locations of the benchmarks to be used in these works. All temporary benchmarks shall be referred thereto.

The Contractor shall construct such temporary benchmarks as the Engineer may direct and shall agree the levels thereof with the Engineer. The establishment of such temporary benchmarks shall be deemed part of the Contractor's responsibility in setting out the works.

The reduced levels are shown on the drawing are believed but not guaranteed to be correct. In the event of any discrepancies between the drawing and the specification, the specification shall have precedence over the drawing.

Setting out

The Contractor shall appoint and employ the necessary qualified and experienced staff to set out the works accurately.

The Contractor shall establish and locate all lines and levels and be responsible for the correct location of all works.

Where directed by the Engineer, the Contractor shall take such levels and dimensions as may be required for the purposes of measurement before disturbance of the ground. These shall be agreed between the Contractor and the Engineer in writing before any ground surface is disturbed or covered up. Any work commenced without taking the said levels and dimensions shall be measured on the Engineer's reckoning of their values before disturbance. The Engineer's decision on this matter shall be final.

Construction and checking of work

The Contractor shall be solely responsible for and shall provide all labour, tools, lifting tackle, and other equipment required for the construction and checking of the works.

No operative shall be allowed to execute any type of work which is normally carried out by a skilled trades man, unless the operative is thoroughly experienced and proficient in the trade concerned. Supervisors and operatives may be required to demonstrate their proficiency or produce certificates of competence to the satisfaction of the Engineer.

As each part of the work is carried out, it shall be subject to the approval of the Engineer.

Survey equipment

The Contractor shall provide for the sole use of the Engineers representative the survey equipment and appliance and these shall revert to the Contractor upon COMPLETION of the Contract.

The Contractor shall provide all labour and materials as may be required by the Engineer representative for survey work in connection with works.

Supervision and labour

The Contractor will be required to maintain a competent supervising engineer and staff on Site throughout the construction period until COMPLETION of the works, and thereafter as may be required during the Defects Liability Period. The Engineer shall give prior approval to the appointment of this supervising engineer and shall have the authority to withdraw this approval at any time in accordance with the Conditions of Contract.

All staff and labour employed on the works shall be employed in accordance with the labour and employment laws and regulations of the Republic of Kenya

Contractor's site offices, staff, workshops, storage and working areas, communication, etc

General

The Contractor shall advice the Engineer at which of his offices any notices may be served in accordance with the Conditions of Contract.

Language of correspondence and records

All communication from Contractor to the Engineer and the Engineer's Representative shall be in English language.

All site books, time sheets, records, notes drawings, documents, specifications etc. shall be in English language

Contractor's duty staff & offices

At least one responsible senior representative of the Contractor shall be immediately available at all times and he shall be on site during normal working hours.

To such representative shall be delegated full authority to confer with Engineer's Representatives or his deputy and to take all steps and to issue all those instructions which may be required in an emergency to ensure the safety of all personnel of the works and of all the Employer's and other property on the site and in the immediate vicinity thereof. The Engineer's Representative may from time to time at his

discretion after taking into consideration all the prevailing conditions allow some relaxation of this clause but such relaxation shall be made only with his written permission and subject to any special conditions which he may then require.

The Contractor shall provide and maintain at the site, offices for the use of representative and to which written instructions by the Engineer's Representative can be delivered. Any instructions delivered to such offices shall be deemed to have been delivered to the Contractor.

Accommodation for workmen

Where the Contractor wishes to construct camp to accommodate his labour, the following requirements shall be adhered to and shall also be subject to the requirement made by the District or Provincial Administration or any local Authority.

Demolition of Contractor's temporary structures

The Engineer may at any time before the end of the period of maintenance give the Contractor notice in writing to demolish and remove those buildings and works which are no longer required, whereupon the title to such buildings and works and materials connected therewith shall revert to the Contractor. After the demolition and removal of building and works as required by the Engineer and Contractor shall level, clear, restore and make good the sites and surrounding ground and fill in and compact all latrines, drains, pits and similar works leaving the satisfaction of the Engineer's Representative.

Public Relations

The Contractor shall designate within his site organization competent staff whose responsibility shall be to ensure good relations.

The location of all yards, stores, workshops, offices, etc. shall be agreed beforehand with the Engineer's Representatives and shall be such as to avoid obstruction and nuisance to public and/or the client.

The Contractor shall provide and maintain at or near the site suitable and sufficient shelters, mess rooms, washrooms, latrines etc. as are necessary and customary, to the satisfaction of the Engineer and in accordance with the law and regulations of the relevant authorities.

Definition and use of the Site

Definition of the Site

The Site shall include all those areas of land which, being public or private:

Areas being provided by the Employer for the construction of the permanent works.

Areas being provided by the Employer for temporary works, including camps, offices and stores.

Are acquired, leased, or operated by the Contractor as borrow pits or spoil tips for the permanent works, including all access roads.

Use of the Site

Access to the Site is gained from public and private highways. The Contractor shall be responsible for cleaning and maintaining all existing roads affected by his work while he is on Site. He shall also be responsible for repairing and making good any damage to these roads. If the Contractor, his Sub - Contractors or suppliers, causes the damage, then the repairs will be at his own cost.

The Contractor shall be responsible for the construction, maintenance and repair of any temporary Site roads.

The lands and other places outside the Site, which are the property of or under the control of the Employer, shall not be used except with the approval of the Engineer.

The Contractor shall promptly remove any vehicle, wagon, barge or vessel or any other obstruction under his control, which the Engineer may require to be moved for any purpose. The Contractor shall remove such obstruction promptly upon receiving such instruction and at his own cost, unless the Engineer shall decide otherwise.

The Contractor shall maintain access for the inspection, operation and maintenance of any of the Employer's assets within the Site or elsewhere.

The Contractor shall not use any portion of the Site for any purpose not connected with the works unless the written permission of the Engineer has been obtained.

Possession of the Site

The Contractor shall restrict his activities to those areas of the Site adjacent to the works being executed and shall avoid any encroachment upon lands outside the areas for which possession has been given. Any trespass or damage or any claim arising from such encroachment shall be the Contractor's sole responsibility and he shall hold the Employer indemnified against all claims arising from such trespass or damage.

Interference with existing works

The Contractor shall not interfere in any way, with any existing works, be it the property of the Employer or of a third party, whether such works has been shown to the Contractor by the Engineer, except where such interference is specifically described as part of the works, either in the Contract or in instructions from the Engineer to take over such works.

Maintenance of natural environment

Disfigurement of the natural environment of the area during construction must be kept to a minimum and special care shall be taken to avoid permanent damage. Needless adverse effects on the local ecology shall be avoided. Bushes and trees shall not be cut except where necessary for the execution of the Works, and then only after the sanction of the Engineer has been obtained.

The Engineer shall have authority to require removal from the Project of any personnel who wilfully neglect these matters.

Quality of Materials and Workmanship

All materials shall comply with the appropriate Standard Specifications and to the approval of the Engineer unless otherwise required hereinafter.

The Contractor, shall, before placing any order of materials, manufactured articles or machinery for incorporation in the works, submit for the approval of the Engineer the names of the suppliers from whom he proposes to obtain such materials, manufactured articles or machinery, together with a list of the same, giving the origin, quality, weight, strength, description and other relevant details. No materials, manufactured articles or machinery shall be ordered or obtained from any suppliers not approved in writing by the Engineer.

All materials shall be delivered to the Site a sufficient period of time before they are required for use in the works, to enable the Engineer to take such samples as he may wish for testing and approval.

Notwithstanding the fact that approval has been given to the source of supply, the Engineer may forbid the use of any materials if, upon delivery, they are found to be defective, or he considers them unsuitable for incorporation in the works. Such rejected materials shall be removed from the site forthwith.

The Contractor may propose alternative materials of equivalent quality to those specified, and subject to the Engineer's approval, such materials may be used in the works.

The Contractor shall have no claim against the Employer in respect of any financial loss which he may suffer as a result of the rejection of any such materials, and he shall also bear the cost of removing them from the Site.

The Engineer shall have the right to inspect materials and plant for the permanent works during the course of manufacture. The Contractor shall arrange for the right of access to manufacturing premises for the Engineer and his staff during normal working hours. The Contractor shall give the Engineer sufficient notice to allow him to observe the testing of any materials for the works at the place of manufacture. The Engineer shall also be given the opportunity to inspect any material or plant in their completed state before packing for transport to the site.

If requested by the Engineer, the Contractor shall provide the Engineer with copies of orders for the supply of goods or materials required for the works.

Rejected materials and defective work

Materials or work which, in the opinion of the Engineer, do not comply with the Specification, shall be classified as rejected materials or defective work, and shall be cut out and removed from the works and replaced as directed by the Engineer.

Alternatives

The Contractor's main Bid shall comply fully with the Specification.

The Contractor is however at liberty to include alternative materials, items of Plant or methods of construction for which he claims advantages to those indicated in the Specification and Drawings, provided the modes of operation and methods of construction are fully described and are at least equal to those shown on the Drawings or Implied in the Specification.

The Contractor shall submit manufacturer's detailed descriptions of alternatives and he shall draw attention to any aspect of each component that does not fully comply with the requirements of this Specification. These detailed descriptions, including any departure from the requirements of the Specification may, after approval by the Engineer, be included among the Contract documents and each item shall be in accordance with the description of it. Approval of a manufacturer's description shall not include approval of any departure from the requirements of the Specification unless the Engineer in writing specifically approves the departure.

Where materials, Plant or methods of construction differ from those specified, the Contractor shall submit with his Bid drawings showing any amendments of system design necessary to suit the alternative. The Engineer will either approve these drawings or issue others if he approves the components concerned.

The Engineer however, may not necessarily accept any alternative put forward.

Existing works and services

The Contractor shall acquaint himself with the positions of all existing works before any excavation is commenced. he will be held responsible for any damage, however caused, in the course of the execution of the works, to such existing works and services. Any damage caused shall be made good at the Contractor’s expense.

Such existing works and services, where exposed by the execution of the works, shall be properly shored, hung-up and supported to the satisfaction of the Engineer and of the authority concerned. The Contractor shall exercise special care when refilling trenches or other excavations around such existing services. Stop cock boxes, water meters and the like shall not be covered up.

Poles supporting cables and the like adjacent to the works shall be kept securely in place until the works are completed and shall then be made as safe and permanent as before.

Notwithstanding the foregoing requirements and without lessening the Contractor's responsibility, the Contractor shall inform the Engineer immediately any existing works have been exposed and shall comply with any requirements of the authority concerned.

Only when and as directed by the Engineer shall the position of existing works or services be changed by the Contractor to meet the requirements of the proposed work.

The Contractor shall make adequate provision so that when carrying out his work, no interference, damage or pollution is caused to highways and footpaths, or to any mains, drains, sewers, and the like or other parts of the works.

Wherever loads have to be carried over ground in which pipes, valves, culverts, and the like are buried, the Contractor shall take all precautions including where necessary, the provision and use of sleepered roads, light gauge railways or other means to prevent damage occurring to such underground works.

The Contractor shall not store any plant or materials or spoil heaps over existing water mains, or in such positions that interference with access to the mains, control valves and the like is created. Approval by the Engineer to the means of protection employed shall not relieve the Contractor of any responsibility in respect of damage occasioned by his operations.

The laying of pipework, ducts, drains and the like shall be arranged so as to cause as little disruption, to traffic or public movement as possible with the smooth operation of existing works.

When breaking out and making good existing structures, the Contractor shall disturb the existing structures as little as possible. All structures shall be made good with materials similar to those used in the existing works, or such materials which are considered by the Engineer to be of similar appearance and suitable in all other respects.

Overhead power lines

Where work is being carried out in the vicinity of overhead power lines, the Contractor shall be responsible for ensuring that all persons working in such areas are aware of the safe working distances in the vicinity of high voltage over head power lines especially when cranes or other large masses of steel are in the vicinity of the power lines.

The Contractor's attention is drawn to BS 162, which gives safe clearance for various voltages.

The Contractor shall take all necessary precautions to ensure the safety of his employees and all other persons where work is being carried out near overhead power lines.

Existing access

Existing access to lands, property and all other places shall be maintained by the Contractor for the duration of the works to the Engineer's satisfaction.

Excavation across roads and tracks

Before excavating across any public or private road or track, the Contractor shall give the Engineer ten days' notice of his attention to excavate and shall include, in writing, the precautions he proposes to take for the continuance of passage and safety of traffic, and details of the warning signs and lights to be provided and operated. The excavation shall not commence until the written approval of the Engineer has been given.

Liaison with police and other officials

The Contractor shall keep in close contact with the police and other officials in the areas concerned regarding their requirements for the control of workmen, movement of traffic, or other matters and shall provide all assistance and facilities which may be required by such officials in the execution of their duties.

Preservation of trees

No tree shall be removed without prior written permission of the Engineer who will limit the removal of trees to the minimum necessary to accommodate the permanent works.

If trees are removed or damaged by the Contractor or his employees, without approval, then the Contractor shall replace such trees.

Replacement trees shall be not less than two years of age, obtained from a reputable nursery and of a species approved by the Engineer.

The Contractor shall plant, water and ensure that the replacement trees are properly established.

General protection

It shall be the Contractor's responsibility to ascertain the existence of all improvements and facilities which may be damaged by its operations, under or above ground, and he shall protect such facilities which are not to be removed. Such objects which are damaged by the Contractor's operations shall be replaced or restored to a condition as good as when the Contractor entered upon the work, at no cost to the Employer. Damage to existing roads caused by the Contractor's equipment or operations shall be repaired by the Contractor at no cost to the Employer.

Protection from water

The Contractor shall keep the whole of the works free from water and shall be deemed to have included for all pumping, shoring, temporary drains, sumps and other measures and provisions necessary for such purposes and for clearing away and making good to the satisfaction of the Engineer any damage caused thereby.

Protection against fires

The Contractor is advised that, at all times, it is necessary to guard against fires starting within the Site

or in the environs thereof, particularly as the result of the works or from the actions of his employees. The Contractor shall have available, at all times; a trained fire-fighting team provided with adequate fire-fighting equipment and shall deal with all fires on the Site howsoever caused.

Site security

The Contractor will be responsible for the security of works and of site installations during the Contract Period. He must provide fencing, watch and lighting as he deems necessary.

Description of material and workmanship

The following apply to all sections thereafter.

(a) Materials

Materials, commodities, components and equipment are to be new and unused unless otherwise specified. Handle, store, fix and protect all commodities with care to ensure that they are in perfect condition when incorporated into permanent work and handed over on COMPLETION

(b) Manufactures recommendations

Handle, store and fix every commodity strictly in accordance with the printed or written recommendations of the manufacturers and/or suppliers. Supply the engineer with copies of the manufacturer's recommendations. Inform the engineer if the manufacturer's recommendations conflict with any other specified requirements and obtain his instructions before proceeding.

Standards

Where commodities or workmanship are specified by reference to Kenya Bureau of Standards (KS), or British Standards (BS), or Code of practice (CP), or international (ISO) or any other standard, such standards are deemed to be the latest published at the time of tendering. The Contractor will be deemed to have read and understood the standards specified, and no claim for lack of knowledge will be allowed. Substitution of commodities or standards of workmanship complying with other standards may be allowed at the discretion of the Engineer, but application for permission for such substitution must be made in writing in sufficient time to allow adequate irrigation. The Contractor must obtain Certificate of compliance with the standards and supply to the Engineer on request.

Water and power for use on the works

The Contractor shall be solely responsible for the location, procurement and maintenance of a water supply adequate in quality and quantity to meet his obligations under the Contract.

The Contractor shall be solely responsible for the location and continuity of the supply of water for use on the works. Supplies may be derived from boreholes, rivers and streams, but shall in all cases be to the Engineer's approval. The abstraction of water from any sources shall not interfere with any permanent water supply. The Contractor shall be solely responsible for the transporting of water from its source to the point at which it is required for construction purposes, and in such quantities and quality as to enable the works to proceed without hindrance due to the shortage of adequate water supplies.

The Contractor shall take care to avoid unnecessary use of water and to prevent any water running to waste.

The Contractor shall make his own arrangements for power supplies and shall be solely responsible for the location, procurement and maintenance of a power supply, adequate to meet his obligations under the Contract.

Fuel supplies

The Contractor shall arrange for obtaining, storing and distributing all fuel oils required for the COMPLETION of the works.

Telephone and communications

The Contractor shall obtain suitable means of communications during the course of the Contract. The use of radio communications may be permitted but the Contractor shall be responsible for obtaining all the necessary permits and licences.

Sanitation

The Contractor shall provide adequate sanitation and refuse collection and disposal facilities complying with state laws and local by-laws for all houses offices workshops, and the like, erected on the site, all to the satisfaction of the Engineer.

The toilet facilities provided at the site by the Contractor shall be made available, free of charge, to the employees of the Contractor and any of his Sub Contractors.

The Contractor shall warn his employees and Sub Contractors that any employee found fouling the site shall be removed from the site immediately in accordance with the Conditions of Contract.

First aid and medical services

The Contractor shall provide and maintain all equipment necessary to render first aid in case of accidents, snakebites or other emergencies. This equipment shall be kept in readiness at the sites of the works, at camps and wherever the Contractor's staff may regularly live and work. The Contractor shall ensure that there are persons available at all such places with knowledge of simple first aid procedures and able to administer snakebite treatment.

Health checks

The Employer may arrange for the taking of swabs, urine and stool samples from all persons who will be working in and around the works, to ensure that all such persons are free from contagious diseases.

The Employer will pay all medical costs incurred in the taking and analyses of these samples. The Contractor shall make his employees available during normal working hours for undergoing the above mentioned health checks. Reasonable notice will be given.

The Contractor shall keep records in respect of all his employees, showing the dates on which health checks have been and will be carried out.

Every employee whom the Contractor intends to engage on the works shall, in addition to being available for the above tests, successfully undertake a test for typhoid and paratyphoid at an approved hospital or medical centre. The medical certificate for each employee shall be submitted to the Engineer before the employee shall be allowed on Site.

Inspections by the Engineer during the Defects Liability Period

The Engineer will give the Contractor due notice of his intention to carry out any inspection during the defects liability period. The Contractor shall, upon receipt of such notice, arrange for a responsible representative to be present at the times and dates named by the Engineer.

This representative shall render all necessary assistance and shall take note of all matters and things to which the Engineer shall direct his attention.

Health and safety

General

The Contractor shall use his best endeavour to ensure, so far as is reasonably practicable and to the satisfaction of the Engineer, the health, safety and welfare at work of his employees, including those of his Sub-Contractors, and of all other persons on the Site. His responsibilities shall include:

Provision and maintenance of safe and properly illuminated Contractor’s Equipment;

Establishment of safe and well-illuminated systems of working;

Provision of protective clothing and equipment;

Establishment of first aid stations, staffed and equipped to provide information, instruction, training and supervision on all aspects of safety and health on site;

Appointing as Safety Officer one of his senior staff who shall have specific knowledge of safety regulations and have had experience of safety precautions on similar works and who shall advise the Contractor on all aspects of safety and health on Site;
Provision and maintenance of safe access to all work areas on the Site;

Provision of adequate sanitary facilities and maintenance of these in a clean and hygienic state for use by all persons employed by the Employer, Engineer, Contractor or other Contractors on the Site;

Measures to control flies, mosquitoes and pests in both working and recreational areas including chemical spraying, if necessary, in compliance with the rules and regulations of the Employer;

Reporting details of any accident to the Site Safety Officer as soon as possible after its occurrence;

Reasonable prevention of non-site personnel from entering the work areas.

Safety equipment and training

The Contractor shall provide:

All necessary breathing apparatus, safety harnesses and any other equipment required to ensure safe working of all his personnel on Site;

Test certificates for all safety equipment;

Proof that all relevant personnel have received appropriate training.

Noise control

The Contractor will be required to employ well maintained plant on site at all times and shall undertake all works strictly in accordance with the recommendations of BS 5228 standards (all parts) Noise Control on Construction and Open Sites or other equivalent agreed standards.

Health and safety plan

The Contractor is required to produce a health and safety plan covering the hazards that may apply during the Contract, the rules and standards to be used in assessing risk and in undertaking work and the methods that he will employ to ensure compliance with his plan.

The Health and Safety Plan shall include details of the following:

Details of all potential risks and the proposals for dealing with such hazards;

Controls to regulate risks that occur during all construction, testing and commissioning activities;

Measures to avoid health risk in connection with the use, handling, storage and transportation of hazardous and harmful substances;

Safety equipment and training proposals in respect of equipment referred to above.

Sign boards

Before the erection of any signboards or posters by the Contractor, the Contractor shall obtain the approval of the Employer and the Engineer to the size, location and wording of such sign boards or posters.

Building regulations

All buildings erected by the Contractor upon the Site and campsite or sites and the layout of the buildings shall comply with the Laws of Kenya and all local by-laws as far as they are applicable.

Progress photographs

Photographs showing the progress of the works shall be taken by a competent photographer every month from positions to be selected by the Engineer.

Special photographs showing particular features of the works or matters of interest concerning the works or their surroundings shall also be taken from time to time as and when required by the Engineer.

Photographs shall not be less than 120 mm x 90 mm and shall be inscribed with the date when taken and a brief description or title.

All negatives shall be numbered; retained on the site and on COMPLETION of the works the negatives shall become the property of the Employer.

Contractor's tracked equipment

The Contractor's tracked equipment may not be run on any public or private road without the written permission of the owner or authority concerned.

Site meetings

The Contractor shall be obliged to attend all site meetings at the appointed time.

Samples

The Contractor shall submit to the Engineer samples of materials to be used in the works, the samples must be fairly representative of the bulk to be supplied or used. Samples should be subject to relevant tests before submission and Test Certificate should accompany the samples

CONCRETE

DEFINITIONS

Structural concrete is any class of concrete which is used in reinforced, prestressed or unreinforced concrete construction, which is subject to stress.

Non-structural concrete is composed of materials complying with the Specification but for which no strength requirements are specified and which is used only for filling voids, blinding foundations and similar purposes where it is not subjected to significant stress.

A formed surface is a face which has been cast against formwork.

An unformed surface is a horizontal or nearly horizontal surface produced by screeding or trowelling to the level and finish required.

A pour refers to the operation of placing concrete into any mould, bay or formwork, etc. and also to the volume which has to be filled. Pours in vertical succession are referred to as lifts. THE DESIGN OF CONCRETE MIXES

The classes of structural concrete to be used in the works shall be those shown on the Drawings and designated in Table 4.1, in which the class designation includes two figures. The first figure is the nominal strength at 28 days expressed in N/mm2 and the second figure is the maximum nominal size of aggregate in the mix expressed in millimetres.

Table 4.1 - CONCRETE CLASSES AND STRENGTHS

Class of Concrete	**Nominal Strength**	**Maximum Nominal Size**	**Maximum Water / Cement Ratio**		**Trial Mixes Target Mean**	**Early Works Test Cubes (Clause 401 d)**	
	N/mm2	of Aggregate mm	A	B	Strength (Clause 401 c) N/mm2	Any one Cube N/mm2	Average of any Group of 4 Cubes N/mm2
10/75	10	75	0.60	0.55	13.5	8.5	13.3
15/75	15	75	0.60	0.50	21.5	12.8	20.0
15/40	15	40	0.60	0.50	21.5	12.8	20.0
15/20	15	20	0.57	0.50	21.5	12.8	20.0
20/40	20	40	0.55	0.48	31.5	17.0	27.5
20/20	20	20	0.53	0.48	31.5	17.0	27.5
20/10	20	10	0.50	0.48	31.5	17.0	27.5
25/40	25	40	0.52	0.46	36.5	21.3	32.5
25/20	25	20	0.50	0.46	36.5	21.3	32.5
25/10	25	10	0.48	0.46	36.5	21.3	32.5
30/40	30	40	0.50	0.45	41.5	25.5	37.5
30/20	30	20	0.48	0.45	41.5	25.5	37.5
30/10	30	10	0.47	0.45	41.5	25.5	37.5
40/20	40	20	0.46	0.43	51.5	34.0	47.5
40/10	40	10	0.45	0.43	51.5	34.0	47.5

HAND-MIXED CONCRETE

Concrete for structural purposes shall not be mixed by hand. Where non-structural concrete is required, hand mixing may be carried out subject to the agreement of the Engineer.

The mixing shall be done on a hard impermeable surface. The materials shall be turned over not less

than three times dry, water shall then be sprayed on and the materials again turned over not less than three times in a wet condition and worked together until a mixture of uniform consistency is obtained.
For hand mixed concrete the specified quantities of cement shall be increased by 10% and not more than 0.5 cubic metre shall be mixed at one time. During windy weather efficient precautions shall be taken to prevent cement from being blown away during the process of gauging and mixing.

TRANSPORT OF CONCRETE

The concrete shall be transported to the Works by means which shall prevent adulteration, segregation or loss of ingredients, and which shall ensure that the concrete is of the required workability and consistency at the point and time of placing.
The time elapsed between mixing and placing a batch of concrete shall be as short as practicable and in any case not longer than will permit completion of placing and compaction before the onset of initial set. If the placing of any batch of concrete is delayed beyond this period, the concrete shall not be placed in the Works.

PLACING OF CONCRETE

a) Consent for placing

Concrete shall not be placed in any part of the Works until the Engineer's consent has been given in writing, and the Contractor shall give the Engineer at least 1 full working day's notice of his intention to place concrete.
If concrete placing is not commenced within 24 hours of the Engineer's consent the Contractor shall again request consent as specified above.

b) ***Preparation of surface to receive concrete***

Excavated surfaces on which concrete is to be deposited shall be prepared as set out in Section 3 of this Specification.
Existing concrete surfaces shall be prepared as set out in Clause 414. Before deposition of further concrete, they shall be clean, hard and sound and shall be wet but without any free- standing water.
Any flow of water into an excavation shall be diverted through proper side drains to a sump, or be removed by other suitable methods which will prevent washing away the freshly deposited concrete or any of its constituents. Any underdrains constructed for this purpose shall be completely grouted up when they are no longer required by a method agreed by the Engineer.
Unless otherwise instructed by the Engineer surfaces against which concrete is to be placed shall receive a prior coating of mortar mixed in the proportions similar to those of the fines portion in the concrete to be placed. The mortar shall be kept ahead of the concrete. The

mortar shall be well worked into all parts of the excavated surface and shall not be less than 5mm thick.
If any fissures have been cleaned out as described in Section 3 of this Specification they shall be filled with mortar or with concrete as instructed by the Engineer.
The amount of mortar placed at any one time shall be limited so that it does not dry out or set before being covered with concrete.

c) Chutes

In general, transportation of concrete by the use of chutes will not be permitted unless approved by the Engineer. The chute shall have a section with round corners and shall have a proper fixed slope so as to allow the concrete to flow satisfactorily and without segregation. The lower end of chute shall be provided with a drop chute not less than 0.6m in height to avoid segregation of falling concrete. The height of drop shall not exceed 1.5m. Chutes shall be protected from direct sunlight, wind and rain.

d) Placing procedures

The concrete shall be deposited as nearly as possible in its final position. It shall be placed so as to avoid segregation of the concrete and displacement of the reinforcement, other embedded items, or formwork. It shall be brought up in layers approximately parallel to the construction joint planes and not exceeding 500mm in compacted thickness unless otherwise permitted or directed by the Engineer, but the layers shall not be thinner than four times the maximum nominal size of aggregate.
Layers shall be placed so that they do not form feather edges nor shall they be placed on a previous layer which has taken its initial set. In order to comply with this requirement, a layer may be started before completion of the preceeding layer.
All the concrete in a single bay or pour shall be placed in a continuous operation. It shall be carefully worked round all obstructions, irregularities in the foundations and the like so that all parts are

completely full of compacted concrete with no segregation or honeycombing. It shall also be carefully worked round and between waterstops, reinforcement, embedded steelwork and similar items which protrude above the surface of the completed pour.
All work shall be completed on each batch of concrete before its initial set commences and thereafter the concrete shall not be disturbed before it has set hard. No concrete that has partially hardened during transit shall be used in the Works and the transport of concrete from the mixer to the point of placing shall be such that this requirement can be complied with.
Concrete shall not be placed during rain which is sufficiently heavy or prolonged as to wash mortar from coarse aggregate on the exposed faces of fresh concrete. Means shall be provided to remove any water accumulating on the surface of the placed concrete. Concrete shall not be deposited into such accumulation of water.
In drying weather, covers shall be provided for all fresh concrete surfaces which are not being worked on. Water shall not be added to concrete for any reason.

When concrete is discharged above its place of final deposition, segregation shall be prevented by the use of chutes, downpipes, trunking, baffles or other appropriate devices, as approved by the Engineer.

e) Interruptions to placing

If concrete placing is interrupted for any reason and the duration of the interruption cannot be forecast or is likely to be prolonged, the Contractor shall immediately take the necessary action to form a construction joint so as to eliminate as far as possible feather edges and sloping top surfaces and shall thoroughly compact the concrete already placed in accordance with Clause 406. All work on the concrete shall be completed while it is still plastic and it shall not thereafter be disturbed until it is hard enough to resist damage. Plant and materials to comply with this requirement shall be readily available at all times during concrete placing.
Before concreting is resumed after such an interruption the Contractor shall cut out and remove all damaged or uncompacted concrete, feather edges or any other undesirable features and shall leave a clean sound surface against which the fresh concrete may be placed.

If it becomes possible to resume concrete placing without contravening the Specification and the Engineer consents to a resumption, the new concrete shall be thoroughly worked in and compacted against the existing concrete so as to eliminate any cold joints.

f) Dimensions of pours

Unless otherwise agreed by the Engineer, pours shall not be more than two metres high and shall as far as possible have a uniform thickness over the plan area of the pour. Concrete shall be placed to the full planned height of all pours except in the circumstances described in sub-clause 405(d).
The Contractor shall plan the dimensions and sequence of pours in such a way that cracking of the concrete does not take place due to thermal or shrinkage stresses.

g) Placing sequence

The Contractor shall arrange that as far as possible the intervals between placing successive lifts of concrete in one section of the Works are of equal duration. This duration shall normally be not less than three or more than seven days under temperate weather conditions unless otherwise agreed by the Engineer.
Where required by the Engineer to limit the opening of construction joints due to shrinkage, concrete shall not be placed against adjacent concrete which is less than 21 days old.
When the drawings call for contraction gaps in concrete, these shall be of the widths and in the locations shown on the drawings and they shall not be filled until the full time interval shown on the drawings has elapsed.

COMPACTION OF CONCRETE

The concrete shall be fully compacted throughout the full extent of the placed layer. It shall

be thoroughly worked against the formwork and around any reinforcement and other embedded items, without displacing them. Particular care shall be taken at arises and other confined spaces. Successive layers of the same pour shall be thoroughly worked together.
Concrete shall be compacted with the assistance of mechanical immersion vibrators, unless the Engineer agrees to another method.
Immersion vibrators shall operate at a frequency of between 7,000 and 10,000 cycles per minute. The Contractor shall ensure that vibrators are operated at pressures and voltages not less than those recommended by the manufacturer in order that the compactive effort is not reduced.

A sufficient number of vibrators shall be operated to enable the entire quantity of concrete being placed to be vibrated for the necessary period and, in addition, standby vibrators shall be available for instant use at each place where concrete is being placed.

Where the concrete contains aggregate with a nominal size of 75mm or more, vibrators with a diameter of 100mm or more shall be used.
Vibration shall be continued at each point until the concrete ceases to contract, a thin layer of mortar has appeared on the surface and air bubbles have ceased to appear. Vibrators shall not be used to move concrete laterally and shall be withdrawn slowly to prevent the formation of voids.
Vibration shall not be applied by way of reinforcement, nor shall vibrators be allowed to touch reinforcement or other embedded items. The vibrators shall be inserted vertically into the concrete to penetrate the layer underneath at regular spacing. The spacing shall not exceed the distance from the vibrator over which vibration is visibly effective.

CURING OF CONCRETE

a) General

Concrete shall be protected during the first stage of hardening from loss of moisture and from the development of temperature differentials within the concrete sufficient to cause cracking. The methods used for curing shall not cause damage of any kind to the concrete.
Curing shall be continued for as long as may be necessary to achieve the above objectives but in any case for at least seven days or until the concrete is covered by later construction whichever is the shorter period.
The above objectives are dealt with in sub-clause 407(b) and (c) but nothing shall prevent both objectives being achieved by a single method where circumstances permit.
The curing process shall commence as soon as the concrete is hard enough to resist damage from the process, and in the case of large areas or continuous pours, shall commence on the completed section of the pour before the rest of the pour is finished.
Details of the Contractor's proposals for curing concrete shall be submitted to the Engineer before the placing of concrete commences in the Works. Formed surfaces may be cured by retaining the formwork in place for the required curing period.
If the use of the foregoing methods is inappropriate, surfaces which will not have further concrete bonded to them and which are not to receive an application of a finish may be cured by the application of a curing compound having an efficiency index of at least 90 percent. Curing compounds shall contain a fugitive dye to enable the extent of the spread to be seen easily.
Curing compound is used on surfaces exposed to the atmosphere shall contain sufficient finely divided flake aluminium in suspension to produce a complete coverage of the surface with a metallic finish when applied at the rate recommended by the manufacturer.
Curing compounds shall become stable and impervious to the evaporation of water from the concrete surface within 60 minutes of application. The material shall not react chemically with the concrete surfaces for at least the first four days of the curing period.
If instructed by the Engineer, the Contractor shall, in addition to the curing provisions set out above provide a suitable form of shading to prevent the direct rays of the sun reaching the concrete surfaces for at least the first four days of the curing period.

b) Loss of moisture

Exposed concrete surfaces shall be closely covered with impermeable sheeting, properly secured to prevent its removal by wind and the development of air spaces beneath it. Joints in the sheeting shall be lapped by at least 300mm.
If for some reason it is not possible to use impermeable sheeting, the Contractor shall keep the exposed surfaces continuously wet by means of a water spray or by covering with a water absorbent material which is kept wet, unless this method conflicts with sub-clause 407(c).
Water used for curing shall be of the same quality as that used for concrete mixing as stated in sub-clause 702(g).

c) Limitation of temperature differential

The Contractor shall limit the development of temperature differentials in concrete after placing by any means appropriate to the circumstances including the following:

i) Limiting concrete temperatures at placing as set out in sub-clause 409(b);
ii) Use of low heat cement, subject to the agreement of the Engineer;

iii) Insulation of exposed concrete surface by insulating blankets. Such blankets shall have an insulation value at least equivalent to 50mm of dry mineral wool;

iv) Leaving formwork in place during the curing period. Steel forms shall be suitably insulated on the outside;

v) Preventing rapid dissipation of heat from surfaces by shielding from wind;

vi) Avoiding the use of water sprays when such use would cause rapid cooling of the surface.

PROTECTION OF FRESH CONCRETE

Freshly placed concrete shall be protected from rainfall and from water running over the surface until it is sufficiently hard to resist damage from these causes.

No traffic shall be allowed on any concrete surface until such time as it is hard enough to resist damage by such traffic.

Concrete placed in the Works shall not be subjected to any loading until it has attained at least its nominal strength as defined in Clause 401.

If the Contractor desires to impose loads on newly-placed concrete, he shall make at least three test cubes and cure them in the same conditions as the concrete they represent. These cubes shall be tested singly at suitable intervals in order to estimate the time at which the nominal strength is reached.

CONCRETING IN HOT WEATHER

a) General

The Contractor shall prevent damage to concrete arising from exposure to extreme temperatures, and shall maintain in good working order all plant and equipment required for this purpose.

In the event that conditions become such that even with the use of the equipment the requirements cannot be met, concrete placing shall immediately cease until such time as the requirements can again be met.

b) Concrete placing in hot weather

During hot weather the Contractor shall take all measures necessary to ensure that the temperature of concrete at the time of placing in the Works does not exceed 30 degrees centigrade and that the concrete does not loose any moisture during transporting and placing.

Such measures may include but are not necessarily limited to the following:-

i) Shielding aggregates from direct sunshine.

ii) Use of a mist water spray on aggregates

iii) Sun shields on mixing plants and transporting equipment.

iv) Cooling the mixing water. If ice is used for this purpose it should preferably be in flake form. Lump ice shall not be allowed to enter the tank supplying the mixer drum.

v) Covering skips closely with polythene sheet so that the latter is in contact with the concrete.

Areas in which concrete is to be placed shall be shielded from direct sunshine and rock or concrete surfaces shall be thoroughly wetted to reduce absorption of water from the concrete placed on or against them.

After concrete in any part of an area has been placed, the selected curing process shall be commenced as soon as possible. If any interval occurs between completion of placing and start of curing, the concrete shall be closely covered during the interval with polythene sheet to prevent loss of moisture.

FINISHES ON UNFORMED SURFACES

Horizontal or nearly horizontal surfaces which are not cast against formwork shall be finished to the class shown on the drawings and defined hereunder.

UF 1 Finish

All surfaces on which no higher class of finish is called for on the drawings or instructed by the Engineer shall be given a UF 1 finish.

The concrete shall be levelled and screeded to produce a uniform plain or ridged surface, surplus concrete being struck off by a straight edge immediately after compaction.

UF 2 Finish

This is a floated finish for roof or floor slabs and other surfaces where a hard trowelled surface is not required.

The surface shall first be treated as a Class UF 1 finish and after the concrete has hardened sufficiently, it shall be floated by hand or machine sufficiently only to produce a uniform surface free from screed marks.

UF 3 Finish

This is a hard trowelled surface for use where weather resistance or appearance is important, or which is subject to high velocity water flow.

The surface shall be floated as for a UF 2 finish but to the tolerance stated below. When the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, it shall be steel trowelled under firm pressure to produce a dense, smooth uniform surface free from trowel marks.

Table 4.4 - SURFACE TOLERANCES

Class of Finish	Tolerance in mm. See notes		
	A	B	C
UF 1	N/A	10	+ 20 or - 10
UF 2	Nil	10	+ 20 or - 10
UF 3	Nil	5	+ 12.5 or -7.5

Notes:

1. Col. A is the maximum allowable value of any sudden change of level in the surface.
2. Col. B is the maximum allowable value of any gradual irregularity of the surface, as indicated by the gap between the surface and a three metre long straight edge or correctly shaped template placed on the surface.
3. Col. C is the maximum allowable value of the difference in level or position between a three metre long straight edge or correctly shaped template placed on the surface and the specified level or position of that surface.

Where dimensional tolerances are given on the drawings or in this Special Specification they shall take precedence over those given in Table 4.4.

AA. MORTAR

This clause covers mortar for use ahead of concrete placing, and other uses not covered elsewhere in the Specification.

Mortar shall be composed of fine aggregate complying with sub-clause 702(c) and ordinary Portland cement complying with SRN 103. The mix proportions shall be as stated on the drawings or elsewhere in this Specification or if not stated shall be one part of cement to two parts of fine aggregate by weight. Small quantities of mortar may be hand mixed but for amounts over 0.5 cubic metre a mechanical mixer shall be used.

The water content of the mortar shall be as low as possible consistent with the use for which it is required but in any case the water/cement ratio shall not be more than 0.5.

Mortar which is specified as 'dry pack' shall be mixed with sufficient water for the mix to become cohesive but not plastic when squeezed in the hand. Dry pack mortar shall be rammed into the cavity it is required to fill, using a hand rammer with sufficient force to ensure full compaction.

REMEDIAL WORK TO DEFECTIVE SURFACES

If on stripping any formwork the concrete surface is found to be defective in any way, the Contractor shall make no attempt to remedy such defects prior to the Engineer's inspection and the receipt of any instructions which the Engineer may give.

Defective surfaces shall not be made good by plastering.

Areas of honey combing (of a mild nature) which the Engineer agrees may be repaired shall be cut back to sound concrete or to 75mm whichever is the greater distance. In the case of reinforced concrete the area shall be cut back to at least 25mm clear distance behind the reinforcement or to 75mm, whichever is the greater distance. The cavity shall have sides at right angles to the face of the concrete. After cleaning out with water and compressed air, a thin layer of cement grout shall be brushed on to the concrete surface in the cavity and it shall then be filled immediately with concrete of the same class as the main body but with aggregate larger than 20mm nominal size removed. A form shall be used against

the cavity, provided with a lip to enable concrete to be placed. The form shall be filled to a point above the top edge of the cavity.
After seven days the lip of concrete shall be broken off and the surface ground smooth.

Surface irregularities which are outside the limits of tolerance set out in Clause 410 shall be ground down in the manner and to the extent instructed by the Engineer.
Severe honeycombing and defects other than those mentioned above shall be dealt with as instructed by the Engineer.

BB. FORMWORK

FORMWORK FOR CONCRETE

Definitions

Formwork means the surface against which concrete is placed to form a face, together with all the immediate supports to retain it in position while concrete is placed.
False work means the structural elements supporting both the formwork and the concrete until the concrete becomes self supporting.
A formed face is one which has been cast against formwork.
An exposed face is one which will remain visible when construction has been completed.

CONSTRUCTION OF FORMWORK AND FALSEWORK

Before construction begins, the Contractor shall submit to the Engineer, drawings showing details of the proposed formwork and false work.
Formwork and false work shall be so constructed that they will support the loads imposed on them by the fresh concrete together with additional stresses imposed by vibrating equipment and by construction traffic, so that after the concrete has hardened the formed faces shall be in the positions shown on the drawings within the tolerances set out in Clause 506.
Ground supports shall be properly founded on footings designed to prevent settlement.

Joints in formwork for exposed faces shall, unless otherwise specified, be evenly spaced and horizontal or vertical and shall be continuous or form a regular pattern.

All joints in formwork including formwork for construction joints shall be tight against the escape of cement, water and fines. Where reinforcement projects through formwork, the form shall fit closely round the bars.

Formwork shall be so designed that it may be easily removed from the work without damage to the faces of the concrete. It shall also incorporate provisions for making minor adjustments in position if required, to ensure the correct location of concrete faces. Due allowance shall be made in the position of all formwork for movement and settlement under the weight of fresh concrete.

Where overhangs in formwork occur, means shall be provided to permit the escape of air and to ensure that the space is filled completely with fully compacted concrete.

Formwork shall be provided for concrete surfaces at slopes of 30 degrees to the horizontal or steeper. Surfaces at slopes less than 20 degrees may be formed by screeding. Surfaces at slopes between 20 degrees and 30 degrees shall generally be formed unless the Contractor can demonstrate to the satisfaction of the Engineer that such slopes can be screeded with the use of special screed boards to hold the concrete in place during vibration.

Horizontal or inclined formwork to the upper surface of concrete shall be adequately secured against uplift due to the pressure of fresh concrete. Formwork to voids within the body of the concrete shall also be tied down or otherwise secured against floating.

The internal and external angles on concrete surfaces shall be formed with fillets and chamfers of the sizes shown on the drawings unless otherwise instructed by the Engineer.

Supports for formwork for non-water retaining structures may be bolted to previously placed concrete provided the type of bolt used is acceptable to the Engineer. If metal ties through the concrete are used

in conjunction with bolts, the metal left in shall not be closer than 50mm to the face of the concrete.

Supports for formwork for water retaining structures may be bolted to previously placed concrete provided the type of bolts and positions of fixing are acceptable to the Engineer. After concreting the Contractor shall remove all support bolts and seal all holes with well rammed cement/sand mortar containing approved waterproofing cement additive. Metal ties which would be left in the concrete shall not be permitted.

Formwork shall not be re-used after it has suffered damage which in the opinion of the Engineer is sufficient to impair the finished surfaces of the concrete.

Where circumstances prevent easy access within the form for cleaning and inspection, temporary openings for this purpose shall be provided through the formwork.

Shear keys shall be provided in all construction joints of the size and shape indicated on the drawings.

Where precast concrete elements are specified for use as permanent formwork, or proposed by the Contractor and agreed by the Engineer, they shall comply with the requirements of the Specification. Such elements shall be set true to line and level within the tolerances prescribed for the appropriate class of finish in Clause 506 and fixed so that they cannot move when concrete is placed against them.

PREPARATION OF FORMWORK

Before any reinforcement is placed into position within formwork, the latter shall be thoroughly cleaned and then dressed with a release agent. The agent shall be either a suitable oil incorporating a wetting agent, an emulsion of water suspended in oil or a low viscosity oil containing chemical agents. The Contractor shall not use an emulsion of oil suspended in water nor any release agent which causes staining or discoloration of the concrete, air holes on the concrete surface, or retards the set of the concrete.

In order to avoid colour difference on adjacent concrete surfaces, only one type of release agent shall be used in any one section of the works.

In cases where it is necessary to fix reinforcement before placing formwork, all surface preparation of formwork shall be carried out before it is placed into position. The Contractor shall not allow reinforcement or prestressing tendons to be contaminated with formwork release agent.

Before placing concrete all dirt, construction debris and other foreign matter shall be removed completely from within the placing area.

Before concrete placing commences, all wedges and other adjusting devices shall be secured against movement during concrete placing and the Contractor shall maintain a watch on the formwork during placing to ensure that no movement occurs.

REMOVAL OF FORMWORK

Formwork shall be carefully removed without shock or disturbance to the concrete. No formwork shall be removed until the concrete has gained sufficient strength to withstand safely any stresses to which it may thereby be subjected.

The minimum periods which shall elapse between completion of placing concrete and removal of forms are given in Table 5.1 and apply to ambient temperatures higher than 10 degrees centigrade. At lower temperatures or if cement other than ordinary Portland are involved, the Engineer may instruct that longer periods be used.

Alternatively, formwork may be removed when the concrete has attained the strength set out in Table 5.1, provided that the attained strength is determined by making test cubes and curing them under the same conditions as the concrete to which they refer.

Compliance with these requirements shall not relieve the Contractor of his obligation to delay removal of formwork until the removal can be completed without damage to the concrete.

Table 5.1 - MINIMUM PERIODS FOR FORMWORK REMOVAL

Position of Formwork	Min. period for temp over 10 degrees Centigrade	Strength to be attained
Vertical or near vertical faces of mass concrete	24 hours	0.2 C
Vertical or near vertical faces of reinforced walls, beams and columns	48 hours	0.3 C
Underside of arches, beams and slabs (formwork only)	4 days	0.5 C
Supports to underside of arches, beams and slabs	14 days	C
Arched linings in tunnels and underground works	24 hours	4 N/mm2

Note: C is the nominal strength for the class of concrete used.

If the Contractor wishes to strip formwork from the underside of arches, beams and slabs before the expiry of the period for supports set out above, it shall be designed so that it can be removed without disturbing the supports. The Contractor shall not remove supports temporarily for the purpose of stripping formwork and subsequently replace them.

As soon as the formwork has been removed, bolt holes in concrete faces other than construction joints which are not required for subsequent operations shall be completely filled with mortar sufficiently dry to prevent any slumping at the face. The mortar shall be

mixed in the same proportions as the fine aggregate and cement in the surrounding concrete and with the same materials and shall be finished flush with the face of the concrete.

SURFACE FINISHES ON FORMED SURFACES

Classes of finish

The surface finish to be achieved on formed concrete surfaces shall be as shown on the drawings and defined hereunder:-

a) Class F1 finish

This finish is for surfaces against which backfill or further concrete will be placed. Formwork may be sawn boards, sheet metal or any other suitable material which will prevent the loss of fine material from the concrete being placed.

b) Class F2 finish

This finish is for surfaces which are permanently exposed to view but where the highest standard of finish is not required. Forms to provide a Class F2 finish shall be faced with wrought thicknessed tongued and grooved boards with square edges arranged in a uniform pattern and close jointed or with suitable sheet material. The thickness of boards or sheets shall be such that there shall be no visible deflection under the pressure exerted by the concrete placed against them. Joints between boards or panels shall be horizontal and vertical unless otherwise directed. This finish shall be such as to require no general filling of surface pitting, but fins, surface discoloration and other minor defects shall be remedied by methods agreed by the Engineer.

c) Class F3 finish

This finish is for surfaces which will be in contact with water flowing at high velocity, and for surfaces prominently exposed to view where good appearance is of special importance. To achieve this finish,

which shall be free of board marks, the formwork shall be faced with plywood complying with B.S. 1088 or equivalent material in large sheets. The sheets shall be arranged in an approved pattern. Wherever possible, joints between sheets shall be arranged to coincide with architectural features or changes in direction of the surface.

All joints between panels shall be vertical and horizontal unless otherwise directed. Suitable joints shall be provided between sheets to maintain accurate alignment in the plane of the sheets. Unfaced wrought boarding or standard steel panels will not be permitted for Class F3 finish. The Contractor shall ensure that the surface is protected from rust marks, spillages and stains of all kinds.

d) Curved surfaces

For curved surfaces where F2 or F3 finishes are called for, the formwork face shall be built up of splines cut to make a tight surface which shall then be dressed to produce the required finish.
Alternatively, single curvature surfaces may be faced with plastic or plywood linings attached to the backing with adhesive or with escutcheon pins driven flush. Linings shall not bulge, wrinkle or otherwise deform when subjected to temperature and moisture changes.

TOLERANCES
All parts of formed concrete surfaces shall be in the positions shown on the drawings within the tolerances set out in Table 5.2.

In cases where the drawings call for tolerances other than those given in Table 5.2 the tolerances shown on the drawings shall take precedence.

Where precast units have been set to a specified tolerance, further adjustments shall be made as necessary to produce a satisfactory straight or curved line. When the Engineer has approved the alignment, the Contractor shall fix the units so that there is no possibility of further movement.

Table 5.2 - TOLERANCES

Class of finish	Tolerances in mm (See Note)		
	A	B	C
F1	10	10	+ 25 to - 10
F2	5	10	+ or - 15
F3	2	5	+ or - 10

Note: The tolerances A, B and C given in the table are defined as follows:

1. Column A is an abrupt irregularity in the surface due to misaligned formwork or defects in the face of the formwork.

2. Column B is a gradual deviation from a plane surface as indicated by a straight edge 3m long. In the case of curved surfaces, the straight edge shall be replaced by a correctly shaped template.

3. Column C is the amount by which the whole or part of a concrete face is displaced from the correct position shown on the drawings.

CC. MASONRY

GENERAL
All masonry work shall be constructed from building stone as specified in Clause 804.

For walls, facing and other exposed works the stone shall unless otherwise specified, be medium chisel-dressed.

WORKMANSHIP
The Contractor shall provide and use proper setting out rods for all work.

Stones shall be well soaked before use and the tops of walls shall be kept wet as the work proceeds. The stones shall be properly bonded so that no vertical joint in a course is within 115mm of a joint in the previous course. Alternate courses of walling at angles and intersections shall be carried through the full thickness of the adjoining walls. All perpends, reveals and other angles of the walling shall be built strictly true and square.

The stones shall be bedded, jointed and pointed in mortar 1 to 3 in accordance with Clause 707 with beds and joints 9mm thick flushed up and grouted solid as the work proceeds.

All masonry work shall be cured in accordance with the relevant requirements of Clause 406.

DD. CAST STONEWORK

Cast stone shall be as specified in Clause 711. Facing stones shall be brought up in courses to a height not exceeding 1 metre at a time, the concrete backing being then brought up and well incorporated into and round the backs of the stones and the projecting metal ties to ensure a complete bond. The stones shall be bedded and jointed as shown on the drawings.

All materials, moulds, mixing, casting and surface treatment, setting, jointing and pointing, and all centering, scaffolding and labour required to complete the cast stonework specified or as shown on the drawings, shall be included in the rates for such work.

EE. MATERIALS

GENERAL
The approval in writing or otherwise by the Engineer of any materials shall not in any way whatsoever relieve the Contractor from any liability or obligation under the Contract and no claim by the Contractor on account of the failure, insufficiency or unsuitability of any such materials will be entertained.

a) All items shall be suitable for water works purposes and for use with cold water installation and operation being in a tropical climate.

b) All items hereinafter specified shall be to such other Standard or Specification which in the opinion of the Engineer provides for a quality of material and workmanship not inferior to the Standard Reference Number (SRN) quoted. The Standard or Specification must be submitted to the Engineer for approval before commencement of work.

c) All ferrous pipes and fittings shall be coated with a protective paint suitable for use in and transport through a tropical climate.

d) The Contractor shall supply to the Employer a certificate stating that each item supplied has been subjected to the tests hereinafter laid down and conforms in all respects to the said Specification.

e) The Contractor shall provide adequate protection to all piping, flanged items and valves so as to guard effectively against damage in transit and storage and ingress of foreign matter inside the valves.

f) All pipework and fittings shall be subjected to a works hydrostatic test pressure which shall be not less than twice the maximum operating pressure.

g) The Contractor should exercise diligence to provide the best material.

h) Where applicable the manufacturer's Specification should accompany all offers. The name

of the manufacturer must in every case be stated.
j) Where necessary the Contractor shall provide rubber gaskets to comply with SRN 208 and all other bolts, nuts, washers, etc. to undertake jointing at fittings etc.
k) Any articles required under this Contract which are found to be faulty due to a crack, flaw or any other reason or is not in accordance with the Specification stipulated will not be accepted nor will the Employer be liable for any charges in respect of such an article. Where any such rejected article can, in the opinion of the Engineer, be rendered usable, the Contractor may deal with it accordingly and include it in the Contract at a price to be mutually agreed. Straight pipes which have been cut will be accepted at the discretion of the Engineer, provided the length is not less than 4 metres or two thirds of the standard length whichever is the lesser and will be priced pro-rata.
l) Wherever possible, samples of pipes and fittings shall be submitted for approval of the Engineer prior to the Contractor obtaining the total requirements.

FF. GALVANISED PIPES AND SPECIALS

All piping shall conform to SRN 823 and SRN 903 for "Medium" Piping. The pipes shall be screwed and socketed, coupled or flanged.
All specials shall be of such dimensions as will mate with the piping supplied. Screwdownstopvalves shall conform to SRN 826. Barrel nipples shall conform to SRN 823 and all other specials shall conform to SRN 824.
All pipes supplied shall be certified by the manufacturer to have been tested in accordance with the relevant Standard Specification.

GATE VALVES

- Gate valves shall comply with the requirements of SRN 501.
- The gate valves shall be suitable for use in pipelines and for the operating pressure to a head of 160 metres or 250 metres of water (NP 16) or NP 25.
- The gate valves shall be double flanged. The dimensions and drilling of flanges shall be in accordance with SRN 207. Flanges shall be machined flat. Flanges shall be NP 16 / NP 25 complying with SRN 207.
- Spindles of the gate valves shall be provided with cast iron caps conforming to the requirements as specified under "Valve Caps" in SRN 501 or handwheels if so specified.
- The spindles of the gate valves shall be of the non-rising type and screwed so as to close the valves when rotated in a clockwise direction. The direction of closing shall be clearly cast on the valve cap or handwheel.
- The gate valves shall be subject to "Closed End Tests" in accordance with the procedure set out in SRN 501.
- The gate valves shall be suitable for opening and closing against an unbalanced head by manual operation.

GG.PAINTS

All priming, undercoating and finishing paints shall be in accordance with SRN 877 or SRN 878 as appropriate.

The painting of all building works shall comprise a special paint recommended for external work while all other paints, plastic emulsion coating etc. are to be of an approved manufacturer. All paints, distempers etc. shall be delivered on site intact in the original drums or tins, and shall be mixed and applied in accordance with the manufacturer's printed directions. The only addition which will be allowed to be made will be liquid thinners, driers etc. supplied by the makers for the purpose.

All surfaces must be thoroughly cleaned down prior to painting and decorating work and no external painting shall be carried out in rainy weather. All paint must be thoroughly well worked on and excess of paint in any coat must be avoided.
All colours will be selected by the Engineer from the standard range of colours.

HH.PRECAST CONCRETE UNITS

Precast concrete covers to be precast units for use in the works, whether instructed under the Contract or proposed by the Contractor.

a) Formwork for Precast Units

Moulds shall be so constructed that they do not suffer distortion or dimensional changes during use and are tight against loss of cement grout or fines from the concrete.

Moulds shall be set up on firm foundations so that no settlement occurs under the weight of the fresh concrete.

Moulds shall be constructed so that units may be removed from them without sustaining any damage.

Release agents used for demoulding shall not stain the concrete or affect its properties in any way.

b) Reinforcement for Precast Units

Reinforcement in precast units shall comply with the requirement of Clauses 736 and 419-420. When preformed cages are used the cages shall be made up on jigs to ensure dimensional accuracy and shall be carefully supported within the could in such a way that they cannot move when concrete is placed. Reinforcement complying with SRN 126 may be tack welded where bars cross to provide rigidity in the cage but reinforcement complying with SRN 127 shall not be welded.

Cover to main reinforcement shall be as shown on the drawings, or if not shown shall be not less than 25mm or the diameter of the bar, whichever is the greater. Cover on distribution steel shall not be less than 15mm or the diameter of the bar whichever is the greater.

Bars shall be spaced so that the minimum clear distance between them is the maximum nominal aggregate size plus five millimetres but in any case, not less than the diameter of the bars.

Bars may be placed in pairs provided that there are no laps in the paired lengths.

c) Casting of Units

Concrete for precast units shall comply with Clauses 724 and 401-410 using the class of concrete specified on the drawings.

If lightweight aggregates are specified, they shall comply with SRN 147.

The area in which units are cast shall be adequately protected from the weather so that the process is not affected by rain, sun or drying winds.

d) Curing Precast Units

Requirements for curing shall be generally as set out in Clause 407.

The Contractor shall ensure that units do not suffer any loss of moisture or sudden changes of temperature for at least four days after casting. If a water spray is used for curing, the water shall be at a temperature within 5 degrees centigrade of the temperature of the unit being cured.

If Contractor proposes curing at elevated temperatures, the method shall be subject to the agreement of the Engineer and shall include means whereby units are heated and subsequently cooled evenly without sudden changes of temperature.

e) Dimensional Tolerances of Precast Units

Units shall be accurately formed to the dimensions shown on the drawings unless closer tolerances are called for by the Engineer.

f) Surface Finish of Precast Units

The formed faces of precast units shall be finished to Class F3 as set out in Clause 505(C) unless another class of finish is specified on the drawings.

Free faces shall be finished to Class UF2 unless another class of finish is specified on the drawings.

In cases where a special finish is required a trial panel shall be constructed by the Contractor which after approval by the Engineer shall be kept available for inspection at the place of casting and production units shall thereafter match the approved pattern.

Those parts of the unit which are to be joined to other units or to in-situ concrete shall be brushed with a stiff brush before the concrete has fully hardened. Alternatively, if the concrete has been

allowed to harden, the surfaces shall be roughened by sand blasting or by the use of a needle gun.

g) Handling and Storage of Precast Units

Precast units shall be handled in a manner which will not cause damage of any kind and shall be stored on a hard impermeable base.

Prestressed units and large precast normally reinforced units shall be handled and stored so that no stresses shall be induced in excess of those which they will incur in their final positions in the Works unless they have been designed to resist such stresses.

Units shall be provided with adequate lifting holes or loops, placed in the locations shown on the drawings or agreed by the Engineer and they shall be lifted only by such holes or loops. Where it is not possible to provide holes or loops, suitable sling positions shall be indicated in paint on the units.

Units shall be marked indelibly with the reference number and date of casting and shall be stacked on suitable packers which will not damage the concrete or stain the surfaces. Not more than two packers shall be placed under each unit and these shall be located either at the positions of the permanent support points or in positions such that the induced stresses in the unit will be a minimum.

h) Testing Precast Units

Precast units shall be capable of safely sustaining the loads which they have been designed to carry. The Contractor shall subject units selected by the Engineer to load tests simulating the working conditions. Details of such tests shall be agreed between the Engineer and the Contractor.

In the case of units subject to bending loads the test piece shall be supported at full span and a loading equivalent to 1.25 times the sum of the live and dead loads which were assumed in the design shall be maintained for one hour without the appearance of any signs of distress. The recovery one hour after the removal of load shall be not less than 75 per cent of the full load deflection.

If the unit fails to meet the above requirements, further tests shall be carried out on two more units. If either of these fail the whole batch of units will be rejected.

If the Engineer so requires, a test to destruction shall also be carried out which on units subject to bending shall be as follows:

1. The units shall be supported at full span and a load applied in increments instructed by the Engineer up to 95 per cent of the designed ultimate load. This load shall be held for 15 minutes without failure of the unit. The deflection at the end of this period shall be not more than 1/40th of the span. The load shall then be further increased until failure occurs.
2. If the unit fails to sustain the required load for the prescribed period or if the deflection exceeds the specified amount, the Engineer may order two further tests, and if either of these fail, the batch of units which they represent may be rejected.

II. SUBMISSION OF SAMPLES

As soon as possible after the contract has been awarded, the Contractor shall submit to the Engineer a list of the suppliers from whom he proposes to purchase the materials necessary for the execution of the Works. Each supplier must be willing to admit the Engineer or his representatives, to his premises during ordinary working hours for the purpose of obtaining samples of the materials in question. Alternatively, if desired by the Engineer, the Contractor shall deliver the samples of the materials to the Engineer's office without charge.

The information regarding the names of the suppliers may be submitted at different times, as may be convenient, but no source of supply shall be changed without the Engineer's prior approval once a supplier, source or material has been approved.

Samples of materials approved will be retained at the Engineer's office until the completion of the contract. Samples may be tested to destruction.

All materials delivered to site must be at least equal in all respects to approved samples, otherwise

they shall be rejected. No special payment will be made for compliance with clauses specifying tests etc. to ensure quality control etc. unless specifically itemised in Bills of Quantities.

JJ. MATERIALS FOR CONCRETE

a) General

The Contractor shall submit to the Engineer full details of all materials which he proposes to use for making concrete. No concrete shall be placed in the Works until the Engineer has approved the materials of which it is composed. Approved materials shall not thereafter be altered or substituted by other materials without the consent of the Engineer.

b) Cement

Cement shall comply with the following Kenya Standards:- SRN 103 for Ordinary Portland cement.
SRN 103 for Rapid Hardening Portland cement plus all special condition to its use stipulated by the manufacturer.

SRN 104 for Sulphate Resisting or High Alumina cement.
Cement shall be free flowing and free of lumps. It shall be supplied in the manufacturer's sealed unbroken bags or in bulk. Bagged cement shall be transported in vehicles with effective means of ensuring that it is protected from the weather.
Bulk cement shall be transported in vehicles or in containers specially built and equipped for the purpose.
Cement in bags shall be stored in a suitable weatherproof structure of which the interior shall be dry and well ventilated at all times. The floor shall be raised above the surrounding ground level and shall be so constructed that no moisture rises through it.
Each delivery of cement in bags shall be stacked together in one place. The bags shall be closely stacked so as to reduce air circulation but shall not be stacked against an outside wall. If pallets are used, they shall be constructed so that bags are not damaged during handling and stacking. No stack of cement bags shall exceed 3 metres in height. Different types of cement in bags shall be clearly distinguished by visible markings and shall be stored in separate stacks.
Cement from broken bags shall not be used in the Works. Cement in bags shall be used in the order in which it is delivered.
Bulk cement shall be stored in weatherproof silos which shall bear a clear indication of the type of cement contained in them. Different types of cement shall not be mixed in the same silo.

The Contractor shall provide sufficient storage capacity on site to ensure that his anticipated programme or work is not interrupted due to lack of cement.

Cement which has become hardened or lumpy or fails to comply with the Specification in any way shall be removed from the site.

All cement for any one structure shall be from the same source.

Cement which is stored on site for longer than one month shall be rejected.

c) Fine Aggregate

Fine aggregate shall be clean, hard and durable and shall be natural sand, crushed gravel sand or crushed rock sand complying with SRN 108. All the material shall pass through a 5mm standard sieve and the grading shall be in accordance with Zones 1, 2 or 3 of SRN 109. In order to achieve an acceptable grading, it may be necessary to blend materials from more than one source. Fine aggregate for mortar only shall comply with SRN 135.

The fine aggregate shall not contain iron pyrites or iron oxides. It shall not contain mica, shale, coal or other laminar, soft or porous materials or organic matter unless the Contractor can show by comparative tests, on finished concrete as set out in SRN 117, that the presence of such materials does not adversely affect the properties of the concrete.

d) Coarse aggregate

Coarse aggregate shall be clean, hard and durable crushed rock, crushed gravel or natural gravel complying with the requirements of SRN 110. The material shall not contain any iron pyrites, iron oxides, flaky or laminated material, hollow shells, coal or other soft or porous material, or organic matter unless the Contractor can show by comparative tests on finished concrete as set out in SRN 117 that the presence of such materials does not adversely affect the properties of the concrete. The pieces shall be angular, rounded or irregular as defined in SRN 107.

Coarse aggregate shall be supplied in the nominal sizes called for in the Contract and shall be graded in accordance with SRN 111 for each nominal size.

f) Delivery and storage of aggregates

Aggregates shall be delivered to site in clean and suitable vehicles. Different types or sizes of aggregate shall not be delivered in one vehicle.

Each type or size of aggregate shall be stored in a separate bin or compartment having a base such that contamination of the aggregate is prevented. Dividing walls between bins shall be substantial and continuous so that no mixing of types or sizes occurs.

The storage of aggregates shall be arranged so that as far as possible rapid drying out in hot weather is prevented in order to avoid sudden fluctuations in water content. Storage of fine aggregates shall be arranged so that they can drain sufficiently before use in order to prevent fluctuations in water content of the concrete.

g) Water for concrete and mortar

Sea water or brackish water containing more than 1,000 ppm chloride ion or 2,000 ppm sulphate ion shall not be used for mixing or curing concrete.

Water shall be clean and free from harmful matter and shall comply with the requirements of SRN 114.

The Contractor shall carry out tests in accordance with SRN 114 to establish compliance with the Specification.

KK. BUILDING STONE

All building stone shall be capable of withstanding when wet a crushing stress of 1.4 kg./sq.mm. The source of stone shall be approved by the Engineer and stone supplied therefrom shall be free from Magadi, overburden, mudstone, cracks, sand holes, veins, laminations or other imperfections.

The stone shall be chisel dressed into true rectangular blocks, with each surface even and at right angles to all adjoining surfaces, to the size specified. For exposed stonework the maximum permissible variation of any of the specified dimensions shall be 6mm provided that cut stone, supplied as 'rock face' stone may be hammer dressed on one face only, or on one face and one end, if in other respects it conforms with this specification. Stones shorter than 375mm will not be accepted.

Unless the Engineer allows otherwise the Contractor shall at his own expense provide and dress four 100mm cubes of stone for testing.

The stone shall be sound when tested in accordance with SRN 870 except that:-

i) The treatment shall be repeated for 10 cycles only; and

ii) The second criterion of failure shall be amended to allow for a loss of weight of not more than 20% of its original weight.

MURRAM

Murram shall be from an approved source quarried so as to exclude vegetable matter, loam, top soil or clay. The California Bearing Ratio of the murram, as determined for a sample compacted to maximum density (as defined under SRN 601) and allowed to soak in water for four days, shall not be less than 30%. This C.B.R. is a guide to quality only and the compaction in the work will be judged by density.

LL. CEMENT MORTAR

Cement mortar shall consist of proportions by volume as specified of Portland Cement and natural sand or crushed natural stone or a combination of both as specified in SRN 135 and SRN 136 : Building Sands from Natural Sources. The constituent materials shall be accurately gauged and mixed in an approved manner.

Cement mortar shall be made in small quantities only as and when required, and any mortar which has begun to set or which has been mixed for a period of more than one hour shall be rejected.

MM. CONCRETE BLOCKS

Solid and hollow concrete blocks for walling shall comply with SRN 904 in every respect.

All solid and hollow concrete blocks used in the walling must be capable of withstanding a crushing pressure of not less than 0.35 kg per square millimeter after 28 days. The blocks shall be cast in Metric sizes.

NN. TESTING OF MATERIALS AND WORKMANSHIP

APPARATUS REQUIRED FOR TESTING ON SITE

Apparatus for testing shall be, if directed by the Engineer, made available on site of the works, for as long a period as required by the Engineer, and regarded as constructional plant. The Contractor to allow for this provision in his rates. The following may be required:-

a) A set of sieves complying with British Standard 410 : Test Sieves, or the following nominal sizes:-

Fine mesh wire cloth 200, 100, 72, 52, 36, 25, 18, 14, 10 and 7. Medium mesh wire cloth 3mm. Perforated plate 5mm, 6mm, 9mm, 12mm, 20mm, 38mm, 50mm, 65mm and 75mm.

b) A suitable balance, a pycnometer and a stove or other approved apparatus for determining the moisture content of the aggregate. The methods of test shall be as described in Part Four of British Standard 812: Sampling and Testing of Mineral Aggregates, Sands and Fillers.

c) A 200 ml. graduated cylinder in accordance with British Standard 604: Graduate Measuring Cylinders, for the use in the field settling test for clay and fine silt in aggregates.

d) Two 0.34 kg. graduated clear glass medicine bottles for use in the test of organic impurities in sand.

e) Apparatus required for testing soils in accordance with British Standard 1377: Methods of Test for Soil Classification and Compaction, and British Standard 1924: Methods of Test for Stabilised Soils.

f) Apparatus for testing concrete in accordance with British Standard 1881: Methods of Testing Concrete, Parts 1 to 7.

g) A straight edge 3 meters long and measuring wedge or other approved apparatus for testing the accuracy of surfaces.

Additional testing equipment as stated in the Bill of Quantities or as required by the Engineer.

LOAD TESTING OF PIPES

The Engineer may instruct the Contractor to make a Loading Test (Three-Edge Bearing or Sand Bearing) on pipes to be used to construct the sewer. Payment for Load Tests will be entirely in accordance with the General Conditions of Contract.

OO. MISCELLANEOUS RR.1 GALVANISED WORK

Iron and steel, where galvanized, shall comply with B.S. 729, entirely coated with zinc after fabrication

by complete immersion in a zinc bath in one operation and all excess carefully removed. The finished surface shall be clean and uniform.

RR.2 PAINT AND PAINTING

All paint, including primers, undercoats and finishings, polish, emulsion etc., to be used shall be obtained ready for use from the manufacturer approved by the Engineer.

The Contractor shall order direct from the manufacturer and only fresh paint will be allowed to be used.

All paints shall be of the qualities, i.e. exterior, interior etc., types and colours scheduled. All coats of paint system shall be obtained from the same manufacturer, shall be ordered for use together and as far as practicable, shall be ordered on one order in sufficient quantity for the whole of the work, particularly in the case of the finishing colour. Where more than one of the three systems (gloss, semi- gloss or flat) is in use, these paints shall be used in strict accordance with their accompanying printed instructions.

The Contractor shall use only paints delivered to the site in original sealed containers, not exceeding five liter capacity, stamped and bearing the manufacturer's name of mark, the specification number, method of application (e.g. brushing) colour, quantity, batch number and date of manufacture, and expiry.

Contractor's stocks shall not be accepted unless expressly approved by the Engineer's Representative.

The paint, which will be subject to sampling and testing, shall be used exactly as received, after adequate stirring, without the addition of thinners, driers, or adulterating materials of any kind.

All tints and shades (including colours of undercoats) shall be selected and approved by the Engineer's Representative and the Contractor shall allow in his prices for executing the painting work in colour schemes, to be prepared from a wide range of colours.

All paints described as oil paint shall be alkyd paint.

No painting on exterior work shall be carried out in wet weather or upon surfaces which are not thoroughly dry. Painting shall not proceed in dusty conditions. Each coat of paint shall be thoroughly dry and shall be rubbed down with glass paper before a subsequent coat is applied. Adequate care must be taken to protect surfaces of paintwork, still wet. Lead based priming paints for steelwork shall conform to B.S.2521 and 25

TESTING OF WATER RETAINING STRUCTURES

All water retaining structures shall be tested for water tightness on COMPLETION in the following manner. The structure shall be filled with water in stages and held at each water level as the Engineer may require. Shall any dampness or leaking occur at any stage the water shall be drawn and the defects remedied to the satisfaction of the Engineer. The procedures shall be continued and finally the structure shall be allowed to remain full for seven days. Should any dampness or leakage or any other defects occur they shall be made good to the satisfaction of the Engineer and the structure retested until the water tightness is approved by the Engineer.

Cleansing and sterilisation of water retaining structures

The inside of all potable water retaining structures and all interior pipework and fittings shall be thoroughly cleaned and washed after the water tightness has been approved by the Engineer.

The structures shall be filled to overflow level with clean water containing 20 parts per million of chlorine and left shall be drained away and the structures for a period of at least 24hours. The chlorinated water refilled with clean water from which samples shall be taken for analysis to the instructions of the Engineer. If any of results of the analysis are unsatisfactory the sterilisation process shall be repeated until the results of the tests are satisfactory.

Substantial Completion

Substantial COMPLETION will mean the works are capable of being fully used by the employer in accordance with the intent of the design standards.

Test on Completion

On commissioning of the works the Contractor shall have on site personnel to ensure that all the plant is working satisfactorily. The personnel shall be on site for a minimum of 7 days or for such time as required to determine that the equipment is operating to the satisfaction of the Engineer

Site clearance upon Completion of works

On Completion of the works, the Contractor shall clear the site and remove all temporary buildings, equipment and debris. The Contractor shall level off and grade all areas used for haul roads and all building, store and workshop areas. The whole of the site shall be left in a clean and tidy condition.

GENERAL SPECIFICATIONS FOR BOREHOLES

NOTES:

The general specifications together with the specific specifications contained in the bills of quantities and the contract drawing will form the specification for the works.

All the general specifications will apply where applicable. In cases where the specifications specified in the general list do not apply; all the specifications specified in the Bill of Quantities shall be adhered to strictly.

TECHNICAL SPECIFICATION

LEGAL REQUIREMENTS

The Water Act 2006, 4th Schedule shall apply in the abstraction of ground water.

DRILLING SITE

The Contractor shall drill the borehole at the exact location designated by the Procuring Entity or the Hydrogeologist. The Procuring Entity is responsible for providing all land, way-leaves and easements for the permanent works. The Contractor shall be deemed to have fully informed himself as to the suitability of the roads or tracks to the site and shall exercise due care in the use of such roads and shall make good any damage caused by their use. The Contractor shall provide such temporary tracks to the actual boreholes locations as are necessary, with as little as possible interference with existing

fences and cultivated land. Compensation for damage to crops, fences, etc will not be the contractor's responsibility.

ENVIRONMENTAL PROTECTION OF THE SITE
Care must be taken in the handling and storage of all drilling fluids, oils, greases and fuel on site to avoid any degradation. The Contractor shall dispose of any toxic materials, drilling fluid and other additives, cuttings and discharged water in a manner approved by the Engineer so as not to create damage to public and private property.

UBMISSION OF SAMPLES
Before incorporating in the permanent works any materials or products, which he supplies under the contract, the Contractor shall submit to the Engineer for his approval a sample of each respective material or product and such samples shall be delivered to and kept by him for reference.
All the respective types of materials and products used in the works shall be at least equal in quality to the approved samples. Each and every sample shall be a fair average of the bulk material or of the product that it represents. The Hydrogeologist/Engineer may decide the method by which each sample to be taken from bulk shall be obtained.

WORKMANSHIP
The Contractor is expected to carry out all the works as instructed by the Engineer/Geologist in a thorough and workman-like manner, and up to current professional standards. He / She shall carry out operations with the efficiency and dispatch in accordance with the terms of the contract and to the satisfaction of the Engineer/Hydrogeologist. For this purpose, the contractor shall use suitable machinery and gear, and supply efficient and experienced staff.

STANDARDS
Kenyan, ISO and British Standards current at the date of tender shall apply for materials and Workmanship. Should there be any inconsistency between the three standards, then the Kenyan Standards (KBS) shall apply.

CONTRACTOR'S PLANT AND EQUIPMENT
All machinery, equipment and materials to carry out the drilling, test pumping, well-head construction, etc. as specified in the Bill of Quantities are to be mobilized to the site. Test pumping equipment should be independent from the drilling rig (s). At the start of the contract the Hydrogeologist/Engineer will verify the specifications and state of repair of all major items of plant. He shall have the right to order the removal and/or replacement of any plant that in his opinion is insufficient or unsatisfactory.

SITE AGENT
The Contractor shall ensure that during the full construction period, a capable site agent shall be present on site.

SUPERVISION OF CONTRACT
The contract is to be supervised by the Procuring Entity's appointed Hydrogeologist.

BOREHOLE DEPTH AND DIAMETER
The Contractor shall drill to such depth and diameter as will be instructed by the Procuring Entity or the Hydrogeologist. No borehole will be acceptable if drilled to such depth and diameter other than instructed by the Procuring Entity or the Hydrogeologist. The recommended borehole diameter shall be 203 mm. Drilling at smaller diameter followed by reaming to the recommended diameter will not be acceptable and such reaming shall be the responsibility of the Contractor.
Where yields' exceeding 15 cubic-meters is attained through airlifting estimate, reaming from 203-mm diameter to 254-mm (diameter) may be advisable. This would allow for more than 150 mm (diameter) casing for ease of equipping with bigger capacity pumps for long-term development/advancement in water supply for future demand. Surface casings of 254mm to a depth of 10m followed by 203mm drilling casing and then 152.4mm plain and screen casings should be used. Refer to the Bill of quantities for further specifications.

DRILLING METHOD
The Contractor may use any rotary or percussion drilling technique that he feels applicable to achieve

the depth and diameters required within the time for completion specified in the contract.

SAMPLING OF CUTTINGS

Representative, continuous samples (minimum, 250 grams) of the strata penetrated shall be collected for each 2-m interval and by whatever method that is standard for the drilling technique in use and approved by the Engineer. Samples are not to be washed! The samples shall be put into suitable sample bags, labelled with waterproof labels with the depth interval and delivered to respective District Water Offices without delay. Geological logging will be the responsibility of the Contractor and is to be carried out by his qualified Hydro-geologist.

TEMPORARY CASING

Installation and diameter of any temporary casing required for the construction of the borehole will be left to the Contractor so long as the finished product meets the borehole specifications. Cost for supply, installation and removal of temporary casing shall be borne entirely by the Contractor. The Contractor shall not claim any casing that is not retrievable and left in the borehole.

WATER SUPPLY FOR DRILLING/DEVELOPMENT

The Contractor shall make his own arrangements for obtaining, storing, transporting and pumping of water required for drilling/development purposes, and for use by the drilling crew at their campsite. The costs for the same are deemed to be included in the BOQ rates.

PLAIN AND SCREEN CASING

160-mm OD (outer diameter) Steel plain and screen casing shall have a minimum wall thickness of 5 mm. The screen open area shall not be less than 4% and shall have a uniform slot size of 1 mm. Aquifer zones shall be completely or partly lined with screen casing as decided and approved by the Hydrogeologist. Sections of the plain and screen casing shall be provided in maximum lengths of 6 and 3 meters respectively, and joined watertight by flush threaded connections, or welded, with the joints having the same structural strength as the plain and screen casings and a sump of minimum, 0.5 meters and maximum 2 meters length. The bottom end shall be sealed with bottom cap as shown in the standard design drawing.

- The Hydrogeologist in consultation with the Contractor shall provide installation details of the borehole after drilling is completed. One type of standard borehole design is given below;
- Drill 254-mm0 (diameter) to 2.0 meters depth, case at 210 mm0 (OD) with mild steel casing (wall thickness 5 mm) and cement grout for sanitary seal.
- Drill with 214-mm bit to final depth.
- Install 154-mm0 (OD) Steel, (5 mm minimum wall thickness) plain and screen casings as appropriate.
- Screened sections adjacent to the aquifer zone(s) are to be gravel packed to overlap the plain casing by at least 2 meters.

The plain and screen casings must be centralized in the borehole so that a minimum annular space of 20 mm exists between the borehole wall and the casing. Suitable centralizers should be provided to allow the casings to be set correctly in the center of the drilled bore. Along the screened sections a centralizer shall be inserted at every 3-metre interval while along the plain casing the interval shall be every 6-metre interval.

VERTICALITY

If required by the Hydrogeologist, the Contractor will conduct a vertically test during and after drilling by approved methods to demonstrate that the departure from the vertically does not exceed 3 in 100 between ground level and the base of the borehole. If this departure is exceeded, the Contractor shall make the necessary corrections to the approval of the Engineer without additional payment. If the error cannot be corrected, drilling shall cease, and a new borehole shall be drilled at a position nearby as shall be indicated by the Engineer. No payment shall be made for the alternative drilling and the sealing of the abandoned borehole or for moving to the alternative point.

GRAVEL PACK

The Contractor shall supply suitable gravel pack. The gravel pack shall consist of well-rounded particles of uniform grading with 90% siliceous material and conform to the 2-4 mm diameter. There shall be no clay, shales, silt, fines, excessive amounts of calcareous materials and no crushed rock. The Contractor shall be required to submit samples of the material prior to delivery of the supply to

be analysed.
The gravel shall be washed before installation. Sufficient amount of gravel pack shall be installed to completely cover the uppermost screen and yonder by additional 2-metres to allow for settling. A good supply of water should be introduced with the gravel to prevent bridging.
The gravel pack shall be capped with a 2-metre vertical column of clay seal to prevent any seepage that may contaminate aquifers with subsequent pollution of ground water
The annular space above the clay seal shall be back filled with inert drill-cuttings. The quantity of the gravel pack and backfill to be installed shall be measured using a suitable volumetric method as approved by the Hydrogeologist.

SANITARY SEAL
To provide an effective seal to the entry of contaminants, up to 2.0-metres depth of the borehole from the surface shall be grouted using cement slurry 1.85-2.15 kg / liter. Grout is to be injected, by a method approved by the Engineer, into the annulus between the casing and the wall of the hole. In addition, any aquifer bearing saline or poor-quality water shall also be sealed.

YIELD ESTIMATE DURING DRILLING
If rotary drilling method is used, a 90° V-notch flow measurement shall be used in the drain line so that continuous monitoring of air -lift yields can be obtained. Care should be taken to ensure that no floating debris impede the flow of water over the V-notch. The weir shall at all times be kept clear of a build-up of silt and other fines. The Contractor shall provide the calibration curve, to be verified and approved by the Engineer, for the V-notch weir. Average yields shall be read and rated at every aquifer struck and as otherwise directed by the Engineer.
For percussion drilling, a bailer test of at least 30 minutes duration shall be carried out for each aquifer encountered.

DEVELOPMENT AND CLEANING OF BOREHOLE
The Contractor shall carry out development and cleaning of borehole by airlifting and air jetting methods upon completion of the drilling and installation of casing and gravel pack. This shall be done to remove silts, clays and drilling fluid residues deposited on the borehole wall and adjacent portions of the aquifer during the drilling process.
If organic drilling fluids are used, they shall be broken down chemically according to the manufacturer's recommendations before or during development. Cleaning shall be carried out by airlift pumping, airlift surging, and backwash or jetting. Clay disaggregation by means of sodium hexametaphosphate (Calgon) treatment might be necessary.
Development of the borehole shall be done by airlifting and shall be effective from the depth at which water is encountered to the bottom of the borehole. Development shall continue until the water is completely free from fine particles, as to be decided by the Engineer. Upon completion of development, any accumulation of material shall be removed from the bottom of the borehole by airlifting.

TEST PUMPING
Establishing Aquifer Parameters by Borehole Test Pumping
Test pumping of borehole enables measures of aquifer and Borehole parameters. The British Standard BS 6316: 1992 Code of Practice for Test Pumping of Water Wells prescribes the Following elements of test pumping;
a) A period of recovery after production pumping/development;
b) A pre-test (calibration, typically 2 to 3 hours);
c) A period of recovery after pre-test
d) A step draw-down test (typically five steps, each of 2 hours duration; total 10 hours);
e) A period of recovery after step draw-down test
f) A constant discharge test (typically 48 hours); and
g) A recovery test (typically 24 hours).
h) Analysis of test results
Step drawdown test results will be analysed to determine:
I. The turbulent pressure losses at the well face, and
II. An estimate of the aquifer's transmissivity to determine a suitable pump rate for the constant discharge test.
The constant discharge test results will be analysed to determine:

a) Whether the aquifer is confined, unconfined or semi-confined;
b) The aquifer's transmissivity; and where measurements from an observation well are also available, the aquifer's storage coefficient.

The Contractor shall perform test pumping to establish well performance and yield of the borehole. A test-pumping unit shall be provided for the testing of borehole. The method for varying the discharge rate of the pumps used will depend on the type of the pump used. The Contractor shall provide a suitable means of achieving the rate of flow specified. Test pumping should start at least 24 hours after completion of development and cleaning of the borehole. Sufficient time shall be allowed for the recovery of water levels between each type of test. This shall be at the discretion of the Hydrogeologist. Discharge measurements shall be made by volumetric method or otherwise approved calibrated measuring devise. During the test pumping, the discharged water must be handled and disposed of in an appropriate manner to a point of overland drainage sufficiently far from the well to prevent recharge. The water shall be diverted over a distance of at least 100-metre from the wellhead. This condition may not be required for confined aquifer but approval to vary this distance must be obtained from the Engineer.
During all test-pumping operations, once the flow rate has been determined and preliminary adjustments made, the measured discharge rate shall be maintained within 5% of the required rate for the duration of the test.
Failure of the pump operation during the tests shall require abortion of the whole test and the test shall be repeated after recovery of the water level. No pay shall be made for aborted tests nor for standing time during water level recovery after aborted tests. Test pumping comprises the following activities:

> **Calibration Test:** - The borehole shall be subject to calibration test to establish the approximate yield and draw down characteristics and to decide upon pumping rates for step draw down or constant discharge tests.

> **Step draw down Test:** - The step draw down test shall comprise pumping the well at three to five separate discharge rates as shall be specified by the Engineer. Each discharge rate shall be pumped for a period of two hours. The change from one pumping rate to the next shall be effected without stopping the pump, but by means of regulating a gate valve in the discharge pipe, or by any other means to be approved by the Engineer. The change from one step to the next shall take place in the shortest time possible.
During each step of the draw down test, water levels and discharge measurements shall be taken at appropriate time intervals as shall be instructed by the Engineer; while at the same time electrical conductivity (EC) readings shall be taken.
After completion of the last step, 12 hours recovery is to be undertaken. For a very low yielding borehole (<3 m3 /h), the Engineer may waive the requirement of step draw down test.

> **Constant Discharge Test:** - Separate constant discharge test for maximum duration of twenty-four (24) hours of pumping and twelve (12) hours of recovery shall be implemented. The discharge rate at which the well is to be pumped shall be specified prior to the test. During the test, water level and discharge measurements shall be taken at the same time intervals as for the step draw down test.
Test pumping data from all tests conducted from each borehole shall be supplied to the Engineer. These will show dates, water levels, discharge rates, EC values, and times of starting and stopping the pumping, change in discharge, weather and other conditions that could affect the test data.

WATER LEVEL OBSERVATIONS
The Contractor shall supply appropriate electric contact level gauges for measuring water levels in the borehole to the nearest 10-millimetre at pre-determined intervals. Wellhead arrangements shall permit these gauges to be inserted and passed freely. Hereto the Contractor shall be required to install a dipping tube; minimum .19-millimetre internal diameter (ID) lowered approximately 1-metre above the pump intake or approximately 2-metres below anticipated maximum draw down level. Other methods for measuring water levels are subject to the approval by the Engineer. Cost of water level observations is included in the BOQ rates for test pumping.

ELECTRICAL CONDUCTIVITY MEASUREMENTS
The Contractor shall have an operational EC meter on site to take electrical conductivity readings whenever required during drilling, development and test pumping. Costs of taking these readings are

included in the rates for drilling, development and test pumping.

RECORDS

The Contractor shall keep daily activity records for each borehole. Separate records shall be supplied for borehole upon completion. The records shall contain the information as specified below.

DAILY RECORDS

a) Site Name;
b) Borehole Reference Number;
c) Date of Reporting;
d) Names of Drilling Team Staff;
e) Drilling Method;
f) Bore Diameter and depth, including diameter changes and their corresponding depths;
g) Depth of the Bore at the start and end of shift/working day;
h) Depth and size of casing at start and end of sift/working day;
i) Description of rocks drilled with depths of transitions encountered;
j) Depths of water struck levels;
k) Depth of main aquifer;
l) Estimated yield of airlift measurement when drilling and developing with air;
m) Time log (min/metre), for penetration rates for given type of bit and standby time due to breakdown;
n) Depth intervals at which each formation samples are taken;
o) Records of components and quantities used or added to the drilling or air;
p) Water level at the start of each working day;
q) EC measurements;
r) Problems encountered during drilling;
s) Details on installation in the borehole (if any);
t) Depth and description of well plain and screen casing, and
u) Details of work to be invoiced at hourly rates (e.g. test pumping).

A copy of the daily record shall be made available daily to the Engineer for signature, including any other pertinent data as may be requested by the Engineer.

BOREHOLE COMPLETION RECORD

The borehole completion record should include the following.

Filling borehole construction information as per MoWSl/WRA standard borehole completion record form;

a) Driller's log;
b) Copy of standard chemical water quality test, and
c) Borehole design and installation details (as-built drawing).
d) A copy of borehole completion record shall be made available to and approved by the Engineer on completion of the borehole.

WATER SAMPLING

Water samples for testing the chemical water quality will be taken at the end of the test pumping. The samples shall be taken to a nearby government laboratory or any other competent laboratory for bacteriological and chemical analyses. The Procuring Entity shall bear the cost of the analysis and related charges.

CAPPING THE BOREHOLE

During borehole construction, installation, development and test pumping, the Contractor shall use all reasonable measures to prevent entrance of foreign matter into the borehole. The Contractor shall be responsible for any objectionable materials that may fall into the borehole and any effect it may have on water quality and/or quantity until completion of works and acceptance by the Engineer and/or the Procuring Entity.

ACCEPTANCE OF THE BOREHOLE

Borehole shall only be accepted by the Engineer upon satisfactory completion of all borehole construction operations as per the technical specifications.

LOSS OF EQUIPMENT

Any equipment lost down a borehole must be removed or the borehole will be considered a lost bore. A replacement borehole will have to be constructed and tested at the Contractor's expense.

LOST BORE

Should any incident to the plant, behavior of the ground, jamming of tools or casing, or any other cause prevent the satisfactory completion of the works, a borehole shall be deemed lost and no payment shall be made for that bore or for any materials not recovered there from, nor for any time spent during drilling or while attempting to overcome problems.

In the event of a lost bore, the Contractor shall permanently seal the bore and construct a borehole immediately adjacent to the lost bore or at a site indicated by the Engineer. The option of declaring any bore lost shall rest with the Contractor, subject to the approval of the Engineer.

The abandoned borehole shall be treated as follows.

The Contractor may salvage as much casing from the bore as possible and use it in the alternative borehole with the approval by the Engineer;

Salvaged materials shall be property of the Contractor;

The lost bore shall be sealed by concrete, cement grout, or neat cement, and shall be placed from bottom upwards by methods that avoid segregation or dilution of materials, and

(i) The upper two (2)-metres of the bore shall be backfilled with native topsoil. Sealing of the bore shall be done in such a manner as to avoid accidents and to prevent it from acting as a vertical conduit for transmitting contaminated surface or subsurface waters into the water bearing formations.

STAND-BY TIME

In the event of delays occurring as a result of action or inaction by the Engineer for which the Contractor would be entitled to claim standby time, the contractor should notify the Engineer immediately in writing that such claims are becoming applicable.

CONSTRUCTION OF WELLHEAD

The Contractor shall, on completion of each borehole, cap the top of the borehole with a 5-mm-thick mild steel blank flange. The blank flange shall be 300-mm above the ground level and be spot-welded to the 2-rn Song mild steel casing coated internally and externally with two coats of non-toxic bitumen or epoxy paint to the approval of the Engineer.

This casing shall fit neatly over the Steel casing and be permanently grouted in at the time of completion of the borehole (refer to clause 17). Prior to, during and after the construction of the wellhead, the Contractor must ensure that no debris whatsoever falls into the borehole.

WELL DISINFECTION

Disinfect ion of the borehole shall be carried out by the Contractor before demobilization from the site. This shall be done by placing a chlorine solution into the well so that a concentration of at least 50 mg/l of available chlorine exists in all parts of the borehole at static conditions. All the borehole surfaces above the static water level shall be completely flushed with the solution. The solution shall remain in the borehole for a minimum of 2 hours before pumping the borehole to waste.

CLEARING THE SITE

On completion of each borehole, the site must be left clean and free from all debris, hydrocarbons and waste, and all pits filled to the approval of the Engineer. A site not delivered clean may render the borehole unacceptable. The specification should be itemized together with

STANDARD BOREHOLE DESIGN

In all the boreholes top section of 2.0-m drilled at 254-mm and 210-mm OD, 5-mm wall-thickness, mild steel casing installed and grouted. Borehole drilled at 203-mm0 to final depth. Install 152-mm OD Steel, 5-mm (minimum) wall-thickness, plain and screen casing. Screened sections adjacent to the aquifer zones at depths as instructed by the Engineer. The screened sections to be gravel packed and sealed on top with clay seal.

PROVISION OF EQUIPMENT MATERIAL AND LABOUR

The Contractor shall provide all equipment, transport, consumable materials and labour necessary for the satisfactory COMPLETION of the works in compliance with the specifications herein. The Engineer reserves the right to inspect plant and materials prior to Contractor selection, and may reject plant or material that in his/her opinion is substandard or inappropriate. The Contractor shall provide full

descriptions of all plants to be deployed for these works. The Contactor shall present method statements describing in detail the proposed approach to work.

The Contactor shall provide summary detail of the experience of key personnel to be deployed for these works.

OCCUPATION OF SITE

The Employer will provide land on which the works shall be constructed. The Contractor shall be given possession of such parts of the site that he requires for activities related to construction works including storage of raw materials, equipment and setting up of camp during the period of Contract provided his operation does not interfere with the daily activities of the Employer.

The Contractor shall not enter upon or occupy with men, tools, equipment and materials any land other than the land or right of way provided by the Employer

DILIGENT PERFORMANCE

The Contractor shall at all times perform the Works diligently and in accordance with sound professional practice. He/she shall not proceed from one stage of works to another without the express permission of the Engineer.

Decisions regarding temporary halt, discontinuing of any element or part of any element of these works, or abandonment of these works, shall be discussed jointly between the Contractor and the Engineer before any further actions are authorised by the Engineer. The Engineer's decision shall be final.

The Engineer will require a written submission justifying any steps taken by the successful bidder without the Engineer's approval. An unsatisfactory explanation shall lead to non-payment for works undertaken without prior agreement, and may be included for consideration as liquidated damages.

DRAWINGS

The project drawings shall comprise

(a) The drawings provided in the book of drawings issued for Tender
(b) Such other drawings and/or sketches as are issued from time to time by the

Engineer to deal with design modifications in response to on-site conditions

RECORD DRAWING

As the work proceeds the Contractor shall mark-up 'As Built' details on a set of prints of the Contract Drawings modified to portray the works as actually constructed and issue to the Engineer's representatives for approval within 7 days of COMPLETION of the works covered by each drawing.

SECTION VI (I) – ELECTROMECHANICAL SPECIFICATIONS

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.

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.

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.

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.

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.

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.

REGULATIONS AND STANDARDS

All work executed by the contractor shall comply with the current edition of the “Regulations” for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, Electric Power Act, Kenya Bureau of Standards (KEBS), Institution of Electrical Engineers (I.E.E) Wiring Regulations, Current recommendation of CCITT and CCIR, and with the Regulations of the Local Electricity Authority and the Communications Authority of Kenya (CA)

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

SETTING OUT WORK

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

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.

MCB DISTRIBUTION PANELS AND CONSUMER UNITS

All cases of MCB Panels and consumer units shall be constructed in heavy gauge sheet with hinged covers. Removable undrilled gland plates shall be provided on the top and bottom of the cases. Miniature circuit breakers shall be enclosed in moulded plastic with the tripping mechanism and arc chambers separated and sealed from the cable terminals.

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

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

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

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

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

FUSED SWITCHGEAR AND ISOLATORS

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

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

Fuse links for fused switches are to be of high rupturing capacity cartridge type, conforming to KS 04 – 183: 1978. 112

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.

CONDUITS AND CONDUIT RUNS

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

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

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

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

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

The sets and bends in conduit runs are to be formed on site using appropriate size bending springs and all radii of bends must not be less than 2.5 times the outside diameter of the conduit. No solid or inspection bends, tees or elbows will be used.
Conduit connections shall either be by a demountable (screwed up) assembly or adhesive fixed and water tight by solution. The tube and fittings must be clean and free of all grease before applying the adhesive. When connections are made between the conduit and switch boxes, circular or non-screwed boxes, care shall be taken that no rough edges of conduit stick out into the boxes.
Runs between draw in boxes are not to have more than two right angle bends or their equivalent. The sub-contractor may be required to demonstrate to the Engineers that wiring in any particular run is easily withdrawable and the sub-contractor may, at no extra cost to the contract; be required to install additional draw-in boxes required. If conduit is installed in straight runs in excess of 6000mm, expansion couplings as manufactured by Egatube shall be used at intervals of 6000mm.
Where conduit runs are to be concealed in pillars and beams, the approval of the Structural Engineer, shall be obtained. The sub-contractor shall be responsible for marking the accurate position of all holes chases etc, on site, or if the Engineer so directs, shall provide the Main Contractor with dimensional drawings to enable him to mark out and form all holes and chases. Should the sub-contractor fail to inform the main contractor of any inaccuracies in this respect they shall be rectified at the sub-contractors expense.
It will be the Sub-contractors responsibility to ascertain from site, the details of reinforced concrete or structural steelwork and check from the builder's drawings the positions of walls, structural concrete and finishes. No reinforced concrete or steelwork may be drilled without first obtaining the written permission of the Structural Engineer.
The drawings provided with these specifications indicate the appropriate positions only of points and switches, and it shall be the Sub-Contractors responsibility to mark out and centre on site the accurate positions where necessary in consultation with the Architect and the Engineer. The sub-contractor alone shall be responsible for the accuracy of the final position.

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.

LABELS

Labels fitted to switches and fuseboards;-

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

EARTHING

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

a. 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.

b. 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 armoring of cables, distribution boards and metal frames shall be bonded thereto.

c. 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).

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

e. 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.

f. 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.

g. 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.

h. Earth plates will not be permitted

i. 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.

j. 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.

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

l. 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.

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

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

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 Armored Cables - Armoring of Electric cables ---	Ks 04-194:1990 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.

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.

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 galvanised mild steel back straps or similar approved equal method. For one or two cables run together the cleats shall be fixed a special channel section supports or backstraps described above which shall in turn be secured to walls or ceilings of ducts by rawbolts.
In excessively damp or corrosive atmospheric conditions special finishes may be required and the Sub-contractor shall apply to the Engineer for further instructions before ordering cleats and channels for such areas.
The above type of hooks and clamps and channels or cleats and blackstraps shall also be used for securing cables in vertical ducts.
Cables supports shall be fixed at 600mm maximum intervals, the supports being supplied and erected under this Sub-contract. Saddles shall not be used for supporting cables nor any other type of fixing other than one of the two methods described above or other system which has received prior approval of the Engineer;
Cables are to be kept clear of all pipe work and the Sub-contractor shall work in close liaison with other services Sub-contractors.
The Sub-Contractor shall include for the provision of fixing of approved type coloured slip on cables end markers to indicate permanently the correct phase and neutral colours on all ends.
Provision shall be made for supplying and fixing approved non-corrosive metal cable markers to be attached to the outside of all PVC/SWA/PVC cables at 15mm intervals indicating cable size and distinction.
Where PVC/SWA/PVC cables are outside the building they shall be laid underground 750mm deep with protecting concrete interlocking cover tiles laid over which shall be provided and laid under this Sub-contract.
All necessary excavations and reinstatement of ground including sanding or trenches will be carried out by the Sub-Contractor, unless otherwise stated.

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.

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.

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).

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.

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.
1. 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

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).
(ii) 2.5mm² for one, two or three 5Amp sockets wired in parallel.
(iii) 2.5mm² for one 15Amp socket.
(iv) 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.

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.

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.

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

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

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

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

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.

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.

LAMPS

All lamps shall be suitable for normal stated supply voltage and the number and sizes of lamps detailed on the drawings shall be supplied and fixed. The Sub-Contractor must verify the actual supply voltage with the supply authority before ordering the lamps.
Tungsten filament lamps shall be manufactured in accordance with KS 04 – 112:1978 for general service lamps and KS 04 – 307:1985 for lamps other than general services. Tubular fluorescent lamps shall comply with KS 04 – 464:1982
Pearl lamps shall be used in all fittings unless otherwise specified.

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.

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.

STREET/SECURITY OUTDOOR LIGHTING COLUMNS:
The column shall be at a minimum of 225mm in the ground on 75mm thick concrete foundations and the pole upto 150mm shall be surrounded with concrete. The top bracket and plain section of the columns shall be common to and interchangeable with all brackets with maximum mismatching tolerance of 3mm between any pole and bracket. After manufacture and before erection the columns shall be treated with an approved mordant solution which shall be washed off and the whole allowed to dry. Thereafter, the columns shall be painted with one undercoat and two coats of gloss paint to an approved colour. All columns shall be complete with fused cut-outs.

TIMING CONTROL SWITCH
These shall be installed where shown on the drawings. Photocell timing control circuits which will operate 'on' with a specified level of darkness and 'off' with a given level of light. The initial adjustment will be done with approval of the Electrical Engineer.

WIRING SYSTEM FOR STREET LIGHTING
Cables shall be as indicated on the drawings, and shall be laid in a cable trench 450mm deep along the road sides and 600mm deep across the roads and 900mm away from the road kerb or 1500mm away from the edges of the road. 'Loop-in' and 'Loop-out' arrangement shall be used at every pole. Wiring to the lanterns on each pole shall be with 1.5mm² PVC twin insulated and sheathed cable with earth wire shall be laid at least 600mm below the finished road level on a compact bed of murram at least 50mm thick and covered with a concrete surrounded 150mm thick.

METAL CONTROL PILLAR
These shall be metal clad and fabricated as per contract drawings and specification. The Sub-Contractor shall supply, install, test and commission control pillars including supplying, fixing connecting switchgears as detailed on the appropriate drawings.

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.

M.V. SWITCHBOARD AND SWITCHGEAR

The switchboard shall be manufactured in accordance with KS04-226 which co-ordinates the requirements for electrical power switchgear and associated apparatus. It is not intended that this K.S. should cover the requirements for specified apparatus for which separate Kenyan Standard exist. All equipment and material used in the switchboard shall be in accordance with the appropriate Kenya Standard.

The switchboard shall comprise the equipment shown on the drawings together with all current transformers, auxiliary fuses, labels, small wiring and interconnections necessary for the satisfactory operation of the switchboard.

The Switchboard shall be of the flush fronted, enclosed, metal clad type with full front or rear access as called for in the particular specifications, suitable for indoor use, sectionalized as necessary to facilitate transport and erection. The maximum height of the switchboard is to be approximately 2.0 metres. A suitable connection chamber containing all field terminals shall be provided at the top or bottom of the switchboard as appropriate.

Before manufacture, the Sub-Contractor shall submit to the consulting Engineer for approval of detailed drawings showing the layout, construction and connection of the switchboard. All bus-bars and bus-bar connections shall consist of high conductivity copper and be provided in accordance with KS 04-226: 1985. The bus-bars shall be clearly marked with the appropriate phase and neutral colours which should be red, yellow, blue for the phases and black for neutral. The bus-bars shall be so arranged in the switchboard that the extensions to the left and right may be made in the future with ease should the need arise.

Small wiring, which will be neatly arranged and cleated, shall be executed in accordance with B.S. 158 and the insulation of the wiring shall be coloured according to the phase or neutral connection.

Switches and fuse switches, shall be in strict accordance with KS04-183:1978 Class 2 switches. Means of locking the switch in the "OFF" position shall be provided.

All fuse switches shall comply with KS04-183:1978, PARTS 2 and 3 a fault rating at least equal to the fault rating of the switchboard in which they are installed. Cartridge fuse links to KS 04-183:1978 category A.C. 46, class Q1 and fusing factor not exceeding 1.5 shall be supplied with each fused switch.

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work.

When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

STEEL CONDUITS AND STEEL TRUNKING

Conduits shall be of heavy gauge class "B" welded to Standard specification KS 04-180:1985. In no case will conduit smaller than 20mm diameter be used on the works. Conduits installed within buildings shall be black enameled finish except where specified otherwise. Where installed externally or in damp conditions they shall be galvanized. Conduit fittings, accessories or equipment used in conjunction with galvanized conduits shall also be galvanized 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 galvanized, the links shall be made by galvanized 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 35mm^2 are employed.

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

Screws and bolts securing covers to trunking or sections of covers together shall be arranged so that damage to cables cannot occur either when fixing covers or when installing cables in the trough.
Where trunking is used to connect switchgear of fuseboards, such connections shall be made by trunking fittings manufactured for this purpose and not by multiple conduit couplings.
Where vertical sections of trunking are used which exceed 4.5m in length, staggered tie off points shall be provided at 4.5m intervals to support the weight of cables.
Unless otherwise stated, all trunking systems shall be painted as for conduit.
Where a wiring system incorporates galvanized conduit and trunking, the trunking shall be deemed to be galvanized unless specified otherwise.
The number of cables to be installed in trunking shall be such as to permit easy drawing in without damage to the cables, and shall in no circumstances be such that a space factor of 45% is exceeded.
Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects.
Oil and any other insulating substance shall be removed from the screw threads; where conduits terminate in fuse-gear, distribution boards, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enameled tubing and galvanizing paint for galvanized 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 enameled or galvanized 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.

TESTING ON SITE

The Sub-contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the

Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specification and the Electric Supply Company's By-Laws.

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

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

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

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

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

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

(g) 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.

(h) 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.

MECHANICAL SPECIFICATION

General

This section specifies the general requirement for plant, equipment and materials forming part of the Sub- contract Wo rks and shall apply except where specifically stated elsewhere in the Specification or on the contract Drawings.

Quality of Materials

All plant, equipment and materials supplied as part of the SubcontractWorks shall be new and of first class commerci al quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications desi gnated herein.

All products or materials not manufactured by the Subcontractor shall be products of reputable manufacturers and so far as the provisions of the Specification is concerned shall be as if they had been manufactured by the Sub-contractor.

Materials and apparatus required for the complete installation as called for by the Specification and Contract Drawings shall be supplied by the Sub-contractor unless mention is made otherwise.

Materials and apparatus supplied by others for installation and connection by the Sub-contractor shall be carefully examined on receipt. Should any defects be noted, the Subcontractor 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.

SOLAR FARM POWER GENERATION SPECIFICATION

SPV Crystalline Modules

SPV Mono crystalline modules of 72- or 60-cell with minimum 16.3% efficiency.

Solar modules offered shall be

1. Tier-1 Manufacturer of Kenya or international company
2. Certified as per IEC 61215 /ISI14286
3. Qualify IEC 61730- Part -1: PV Module Safety Qualification Part -1 Requirement for Construction.
4. Qualify IEC 61730- Part -2: PV Module Safety Qualification Part -2 Requirements for Testing.

SPV modules shall be used in highly corrosive atmosphere throughout their life time so they must qualify IEC 61701.

Solar PV Module design shall conform to following requirement:

i) Weatherproof, DC rated MC4 connector and a lead cable coming out as a part of the module, making connections easier and secure, not allowing any loose connections.

ii) Resistant to water ingress, abrasion, hail impact, humidity, sea water & other harsh environmental factors for the worst situation at site.

Module rating is considered under standard test conditions; however Solar Modules shall be designed to operate and perform under site conditions including high temperature, dusty conditions, high humidity and corrosive atmosphere.

Identification and Traceability

Each PV module shall have Nameplate tag. The following information must be mentioned in the Nameplate used on each module. This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions.

i. Name of the manufacturer of SPV module.
ii. Name of the manufacturer of Solar cells.
iii. Month and year of the manufacturer (separately for solar cell and module).
iv. Country of origin (separately for solar cell and module).
v. I-V curve for the module.
vi. Peak wattage, Im, Vm and PF for the module.
vii. Unique Serial No and Model No of the module.
viii. Date and year of obtaining IEC SPV module qualification certificate
ix. Name of the test lab issuing IEC certificate
x. Other relevant information on traceability of solar cell and module as per ISO 9001and ISO14001

Warranties for Modules

Product Warranty

The manufacturer should warrant the solar module(s) to be free from the defects and/or failures specified below for a period not less than ten (10) years from the date of sale to the original customer ("Employer")

i) Defects and /or failures due to manufacturing.
ii) Defects and/or failures due to quality of materials.
iii) Non-conformity to specifications due to faulty manufacturing and/ or inspection processes.

Performance Warranty

The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25-year period and not more than 10% after ten years period of the full rated original output.

Bidder shall provide data sheet for solar PV module (under standard testing condition) along with their offer as per guaranteed technical particular (Bid Response sheet -1).

Module Mounting Structure (MMS)

The MMS to be used for mounting the SPV modules shall be as under:

i) Fixed-tilt type
ii) Azimuth: 0º True South/North as per site location
iii) Tilt angle: 10º tilt angle shall be provided for all sites with adequate spacing to prevent inter-row shading.

Structure shall comply with IEC 61215/61646.

The mounting steel structure and its galvanizing shall be as per standards listed in Table 2 above

The mounting structure shall be suitably designed for mechanical and electrical installation. It shall support SPV modules at a given orientation, absorb and transfer the mechanical loads along with applicable wind loads to the base properly.

While designing of MMS additional care is needed to ensure that the material size used is capable to withstand the wind forces generated on account of heavy wind speed of respective sea wind zone. MMS with documented results of wind tunnel testing and resonant frequency dampening are preferred.

To reduce the pressure on structure and foundation, clear spacing between two adjacent modules shall be sufficient to allow wind passage.

The minimum clearance between the lower edge of the modules and developed ground level shall be adequately elevated above relevant flood plain. Minimum 1000mm and to employers' approval

For ground-mounted systems, contractor has to choose suitable foundation design(s) depending on soil conditions, geographical condition, regional wind speed, bearing capacity, slope stability etc.

The structure shall be designed to allow replacement of any module.

Nuts & bolts, supporting structures including module mounting structures shall have to be adequately protected against all climatic conditions prevailing in the area.

All fasteners shall be of stainless steel of grade SS 304 or suitable equivalent. The mounting structure shall be grounded properly using maintenance-free earthing kit.

The mounting structure & foundation shall be designed to withstand applicable speed of wind zone of the applicable site as given in relevant International/Kenya wind load codes /standards. Suitable fastening arrangement such as grouting and clamping should be provided to secure the installation against the specific wind speed. The contractor shall ensure that the design has been certified by a recognized lab/ institution in this regard and submit the same to Employer.

PV Inverter

Solar Farm shall be either DC- or AC-coupled as per the lists provided in Tables 2A-2K.

The efficiency of the Inverter shall be more than 97% at full load.

Supply Voltage and Variation

i) Supply voltage Single phase, 230V AC
ii) Voltage variation (+10% to – 10%),
iii) Frequency variation 50+/-1.5 Hz
iv) Total harmonic voltage distortion less than 3% to synchronize with standard /local grid.

The inverter shall have high overload capacity. The Bidder should specify the overload capacity in the bid.
String inverter(s)/ Central inverter(s) as per design shall be of requisite numbers having equal to total AC capacity as per requirement of each site at a suitable DC/AC ratio as specified for the inverter.
Maximum Power Point Tracker (MPPT) shall be integrated into the inverter to maximize energy drawn from the solar PV array. MPPT shall be microprocessor/micro controller based to minimize power losses and maximize energy utilization. The details of working mechanism of MPPT shall be mentioned by the Bidder in its proposal. The MPPT unit shall be integrated in to the inverter or conform to IEC 62093 for design qualification.
Inverter should comply with IEC 61683 for efficiency and measurements and should comply with IEC 60068-2 for environmental testing.
The inverter shall be capable of controlling power factor dynamically and be equipped with components required to support reactive power.
The Inverters shall be designed for continuous, reliable power supply as per specification and shall have internal protection arrangement against any sustained fault in the feeder line and against lightning strikes in the feeder line.
The inverter shall have the required protection arrangements against earth leakage faults.
Specifically, the inverter shall be single phase power conditioning unit using static solid-state components.
The inverter shall be suitably designed for parallel operation. Each solid-state electronic device shall have to be protected to ensure long life of the inverter as well as smooth functioning of the inverter.
The inverter must have the feature to work in tandem with other similar inverters and be able to be successively & automatically switched “ON” and “OFF” based on solar radiation variations during the day.
Degree of protection of the indoor inverter shall be at least IP-54 and that of outdoor at least IP-65.
The system should be capable of providing all the data including that of SPV energy meter and inverter to the central software on IEC-104 protocol. All the equipment/hardware/software for complying with the same will be in the Bidder’s scope.
Communication interface shall be an integral part of inverter and shall be suitable to be connected to local data monitoring system and also remotely via the web.
The inverter shall have the capability to store data for at least 6 months.
Inverter front panel, supplemental metering, or remote monitoring interface shall be provided with display or remote monitoring of the following:

i) DC power input
ii) DC input voltage
iii) DC current
iv) AC output power
v) AC voltage
vi) AC current

Both AC & DC lines shall have suitable fuses, surge arrestors and contactors to allow safe start up and shut down of the system. Fuses used in the DC circuit should be DC rated.
Protections required in Inverter

i) Input side disconnection switch
ii) Ground fault monitoring
iii) DC reverse polarity protection
iv) DC over voltage / current limitation protection
v) AC short circuit protection
vi) AC over voltage / current limitation protection
vii) DC and AC side surge protection (Metal Oxide Varistor (MOV) built-in)
viii) Any other protection in view of battery.
ix) Anti-islanding protection

The inverter shall include appropriate self-protective and self-diagnostic features to protect itself and the PV array from damage in the event of inverter component failure or from parameters – beyond the inverter’s safe operating range due to internal or external causes.
Inverter shall go to shutdown/standby mode, with its contacts open, under the following conditions before attempting an automatic restart after an appropriate time delay.

i) When the power available from the PV array is insufficient to supply the losses of the inverter, the inverter shall go to standby/shutdown mode
ii) The inverter control shall prevent excessive cycling of shut down during insufficient solar irradiance.

Operation outside the limits of power quality as described in the technical data sheet should cause the inverter to disconnect the grid. Additional parameters requiring automatic disconnection are

i) Neutral voltage displacement
ii) Over current
iii) Earth fault
iv) And reverse power

In each of the above cases, tripping time should be low enough to protect the inverter.

Internal surge protection shall consist of three MOV type surge-arrestors connected from positive and negative terminals to earth (via Y arrangement).

Battery Inverter/ Charger

SF shall be either DC- or AC-coupled as per the lists provided in Tables 2A-2K.

The efficiency of the Inverter shall be more than 95% at full load.

Supply Voltage and Variation

i) Nominal Input VDC 48 V
ii) Supply voltage Single phase, 230V AC
iii) Voltage variation (+5% to – 5%)
iv) Frequency variation 50+/-1.5 Hz
v) Total harmonic voltage distortion less than 3% to synchronize with standard /local grid.

The inverter shall have high overload capacity. The Bidder should specify the overload capacity in the bid.

Battery Inverter/charger to be bi-directional with power factor capability of at least 0.80 lagging to 0.80 leading.

Inverters to have pure sinewave output waveform.

Inverter should comply with IEC 61683 for efficiency and measurements and should comply with IEC 60068-2 for environmental testing.

The inverter shall be capable of controlling power factor dynamically and be equipped with components required to support reactive power.

The Inverters shall be designed for continuous, reliable power supply as per specification and shall have internal protection arrangement against any sustained fault in the feeder line and against lightning strikes in the feeder line.

The inverter shall have the required protection arrangements against earth leakage faults. Specifically, the inverter shall be single phase power conditioning unit using static solid-state components.

The inverter shall be suitably designed for parallel operation. Each solid-state electronic device shall have to be protected to ensure long life of the inverter as well as smooth functioning of the inverter.

Degree of protection of the indoor inverter shall be at least IP-54 and that of outdoor at least IP-65.

The system should be capable of providing all the data including that of SPV energy meter and inverter to the central software on IEC-104 protocol. All the equipment/hardware
/software for complying with the same will be in the Bidder's scope.

Communication interface shall be an integral part of inverter and shall be suitable to be connected to local data monitoring system and also remotely via the web.

The inverter shall have the capability to store data for at least 6 months.

Inverter front panel, supplemental metering, or remote monitoring interface shall be provided with display or remote monitoring of the following:

i) DC power input
ii) DC input voltage
iii) DC current
iv) AC output power
v) AC voltage
vi) AC current

Both AC & DC lines shall have suitable fuses, surge arrestors and contactors to allow safe start up and shut down of the system. Fuses used in the DC circuit should be DC rated.

Protection required in Inverter

i) Input side disconnection switch
ii) Ground fault monitoring
iii) DC reverse polarity protection
iv) DC over voltage / current limitation protection
v) AC short circuit protection
vi) AC over voltage / current limitation protection
vii) DC and AC side surge protection (Metal Oxide Varistor (MOV) built-in
viii) Any other protection in view of battery.
ix) Anti-islanding protection

The inverter shall include appropriate self-protective and self-diagnostic features to protect itself from damage in the event of inverter component failure or from parameters beyond the inverter's safe operating range due to internal or external causes.

Operation outside the limits of power quality as described in the technical data sheet should cause the inverter to disconnect the grid. Additional parameters requiring automatic disconnection are

i) Neutral voltage displacement
ii) Over current
iii) Earth fault
iv) And reverse power

In each of the above cases, tripping time should be low enough to protect the inverter.

Internal surge protection shall consist of three MOV type surge-arrestors connected from positive and negative terminals to earth (via Y arrangement).

Battery Energy Storage System (BESS)

Supply of Battery Energy Storage System (BESS) with Lithium-ion Battery pack conforming to IEC standards with warranty of 10 years, 3000 cycles minimum. Complete in all respects as under and confirming to Employer's Requirement & technical specification, consisting of

i) Lithium-ion Battery Power Packs for required energy capacity, or equivalent as per approved design, minimum 80% Depth of Discharge (DOD). Batteries should be capable of at least C/4 charge and discharge rate
ii) Enclosures conforming to IP54 for Indoor /IP65 or better for outdoor.
iii) All accessories for correct installation, foundation, connection, controls, and operation of BESS.

Batteries are charged by Battery Inverter / Charger. Thus, batteries charging mechanism should be part of the BESS.

The BESS must allow minimum 80% of Depth of Discharge in all installations as Lithium ion shall be used.

Warranted number of cycles for the BESS for lithium Ion battery systems at the supplier recommended depth of discharge should not be less than 3,000 cycles at 80% DOD.

Guaranteed minimum service life of Lithium Ion BESS shall be minimum 10 years with warranty of 10 years. If due to any reason battery requires to be replaced, then the Contractor is to replace the same in warranty period without any extra cost to the Employer.

Load demand requirement of each site, design concept of BESS, Inverter rating, Battery rating etc. elaborated in Tables 2A to 2K. Contractor should submit the detailed drawing for approval demonstrating the meeting of load requirements of consumers for each community facility.

There shall be no environmental hazards caused due to:

i) Improper use and maintenance of the battery bank.
ii) Improper disposal of batteries at the time of replacement.
iii) Any manufacturing defects.

All technical and other details pertaining to the storage cells shall be supplied including but not limited to the following:

i) Rated voltage and ampere-hour capacity of each storage cell as the rated discharge rate,
ii) Permitted maximum DOD,
iii) Self-discharge rate,
iv) Cycle life of the storage cell and the anticipated life (in years) of the battery bank.
v) Total number of storage cells in use.

vi) Details on cell interconnections, if any
vii) Charging system used for battery

The system should allow for the load current to be supplied at the same time as the battery charging current, whether AC- or DC- coupled.

Contractor shall submit (in 4 sets) complete design and expected performance of BESS calculations, drawings, reports and data for approval of the Employer during detailed engineering. The design of BESS with critical parameters such as response time discharge duration, Depth of discharge, frequency of discharge, cycle life, round trip cycle efficiency performance degradation, self-discharge characteristics, short time discharge rating, transient response characteristics, auxiliary system requirement etc. shall be included in the detailed engineering.

Suitable fire protection system shall be designed for BESS in line with IEC or international norms regulation as applicable and system requirement considering project site.

Detailed hazard analysis and risk mitigation strategy shall be provided along with bid documents.

BESS conforming to International Safety and Electrical Standards shall be Complete in all respect consisting of:

i) Battery inverter/charger for supply voltage as per clause 4.6 above, wave type sinusoidal.
ii) Complete with programmable control and regulation parameters, protection system, control system, surge protection system etc.
iii) Site Master Controller System. Charge controller for DC coupled systems.
iv) Requisite numbers of battery pack, the combination of which shall equal or exceed the estimated capacity shown in design characteristics in this document, with Min. 80 % DOD,
v) Enclosures conforming to IP54 for Indoor /IP65 or better for outdoor.
vi) All accessories and connection for correct installation and operation of BESS.
vii) All cables for inter connection with main AC distribution board.
viii) Support structure to keep battery at a suitable clearance level from ground to take care of water flooding etc. The design shall be submitted to the employer before its implementation. Test certificate and test reports as per IEC62133, IEC61959 and IEC 61960 or other international equivalent standard applicable to battery technology shall be submitted for approval of the Employer. All other test certificate and test reports as per international standards and norms for BESS shall be submitted for approval of the Employer during submission of detailed engineering.

Lightning & Over Voltage Protection

The SPGP shall be provided with lightning and over voltage protection connected to proper earth pits. Earthing pits shall be measured to have an earthing resistance of 1Ω or less at the time of installation. If this level cannot be obtained with the soil at the facility, then soil conditioning (engineered backfill) shall be implemented to improve the earthing resistance within acceptable levels.

Lightning mast/conductor, placed at strategic locations, shall be used to protect the arrays against lightning protection. The bidder shall give detailed design showing location of lightning conductor/masts and the protection coverage on array without causing any shadow on the modules to the Employer.

All designs shall be submitted to the Employer before its implementation.

Necessary concrete foundation for holding the lightning conductor in position to be made after giving due consideration to maximum wind speed and maintenance requirement at site in future.

The lightning conductor shall be earthed through Galvanized Iron (GI) flat strips and connected to earth pits per applicable International Standards. Each lightning conductor shall be fitted with individual earth pit as per required Standards including accessories.

Design calculations, technical specification and requisite test reports of lightning mast conforming to international standards along with detailed write up in 4 sets shall be provided for approval to the Employer.

Earthing Protection

Earthing system shall be in strict accordance with IEC specified in Table 3 and applicable Electricity Rules / Acts and Guidelines for connections.

Earthing system network / earth mat shall be of interconnected mesh as per IEC requirements/specifications. The earth conductors shall be free from pitting, laminations, rust, scale and other electrical or mechanical defects.

Metallic frame of all electrical equipment shall be earthed by two separate and distinct connections to earthing system, each of 100% capacity, with the exception of solar panels, for which alternate means of code-compliant earthing shall be admissible if integrated with racking design.

Metallic sheaths / screens, and armor of multi-core cables shall be earthed at both ends.
Metallic sheaths and armor of single core cables shall be earthed at switchgear end only unless otherwise approved.
Each continuous laid lengths of cable tray shall be earthed at minimum two places to earthing system, the distance between earthing points shall not exceed 30 meters. Wherever earth mat is not available, necessary connections shall be done by driving an earth electrode in the ground.
Neutral connections and metallic conduits/pipes shall not be used for the equipment earthing.
Lightning protection system down conductors shall be terminated to separate earth electrodes & not be connected to other earthing conductors.
Connections between earth leads and equipment shall normally be of bolted type. Contact surfaces shall be thoroughly cleaned before connections. Equipment bolted connections after being tested and checked shall be painted with anti-corrosive paint / compound.
Back filling material to be placed over buried conductors shall be free from stones and harmful mixtures. Back filling shall be placed in layers of 150 mm.
Earth pit shall be constructed as per IEC standard specified in Table 3. Minimum spacing between electrodes shall be 2000 mm. Earth pits shall be treated with salt and charcoal/chemical
Powder Earthing.
Earth resistance at earth terminations shall be measured and recorded. All equipment required for testing shall be furnished by successful bidder.
Each array structure of the SPGP yard/shed shall be grounded properly as per standard. The Array Structure is to be connected to earth pits as per standards. Junction boxes shall be connected to the main earthing conductor/electrode.
The arrays shall be in protected zone of lightning arrester/spheres by installation of suitable lightning surge diverters/arrestors. The earth electrodes for the same shall have to be completely separate from the plant/array earthing.
All metal casing/shielding of the plant shall be thoroughly grounded in accordance with applicable electricity act/rules/guidelines. Total earthing system installation shall be in strict accordance with the latest editions of Electricity Rules, relevant Standards and code of practices and the local statutory authority regulations.
Necessary test point provision shall be made for bolted isolating joints of each earthing pit for periodic checking of earth resistance.
All non-current carrying metal parts shall be earthed with two separate and distinct earth continuity conductors to an efficient earth electrode.
Earthing Design and Layout

i) The successful bidder shall submit Design along with drawings showing the location of lightning arresters and protection zones to cover all arrays against lightning for approval from Employer.
ii) The earth mesh system design shall be submitted for approval of Employer.
iii) Total plant earthing system shall be designed to give an earth resistance of less than 1 ohm all along the earth mesh.
iv) Earthing conductors in outdoor areas shall be buried 1.5 to 2M below finished graded level and these buried conductors shall be brought 500 mm above ground level for making tap connections to the equipment.
v) All the electrodes shall be as per EPRA standards/specifications.

Charge Controller

The bidder shall provide, integrate, install, configure, and commission a Charge Controller to manage and coordinate the performance of SPGP and BESS.
The Charge Controllers shall be MPPT.
The Charge Controller input voltage is 48VDC
Output currents for the Charge Controllers for each site are given in Tables 2A-2K
The charge Controller should have a display for voltage and current for load and solar.
The display should also be able to display other parameters.
The Charge controller should be protected against short circuits, over currents and reverse connection.
The charge controller must have programmable settings for all voltage set points. These set points must be adjusted by the installer to match the temperature-adjusted battery charging and discharging curves in the anticipated ambient temperatures at the location of the batteries.
The Charge Controller should provide a low voltage disconnect to prevent over discharging the battery array, and consistent with the settings and specifications of the battery warranty and prudent operational practices.

The Charge Controller must provide a high voltage disconnect to prevent over-charging the battery array, and consistent with the settings and specifications of the battery warranty and prudent operational practices.
The Charge Controller should either have an automated equalization charge cycle or should allow for manual override by the operator for the ability to perform periodic equalization charge cycles
The Charge Controller must have programmable settings for the maximum current for both charging and discharging. These set points must be adjusted by the installer to match the temperature-adjusted C-Rates for charging and discharging within the battery warranty.
If the battery array has its own protection system or Battery Management System (BMS), then the Charge Controller should integrate with the BMS to ensure coordinated protection of the battery array.
The Charge Controller should have multiple operating modes, for example Charge,
Discharge, Float, Standby, which can be clearly communicated to the user via a Graphical User
Interface (GUI), on-screen display, Bluetooth, wired connection, etc. System voltages, control settings, and set points should also be communicated via the on-screen display or equivalent user interface.
The Charge Controller should be protected from the battery system with DC over-current protection, breaker(s) and/or fuse(s).
The Charge Controller shall be accessible and configurable both remotely and on-site.

Cables

Cables & Wiring

All instruments and panel wiring shall be of heat resisting and self-extinguishing type in compliance with International Standards. Plastic or porcelain cleats of the limited compression type shall be used for holding wiring runs. All wires shall be suitable for bending to meet the terminal studs at right angles. Metal cases of all apparatus mounted on panels shall be separately earthed by means of copper wire or strips.
The following color scheme of the wiring shall be used as per standard for three phase systems.

a) AC three phase circuits:
   - i) No.1 Phase : Red.
   - i) No.2 Phase : Yellow.
   - ii) No.3 Phase : Blue
   - iii) Neutral conductor : Black
   - iv) Connection to earth : Green

b) D.C. circuits: Grey

Cables and Accessories

Cables of appropriate size to be used in the system shall have the following characteristics:

- i) Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- ii) Temp. Range: –100C to +800C
- iii) Excellent resistance to heat, cold, water, oil, abrasion, Ultraviolet (UV) radiation.
- iv) Flexible.
- v) Sizes of cables between array interconnections, array to junction boxes, junction boxes to inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.

All the cables shall conform to the requirements of the related standards and codes for:

- i) DC cable for photovoltaic system
- ii) XLPE / PVC insulated (heavy duty) electric cables for working voltages up to and including 1100V.
- iii) Recommended current ratings
- iv) Low carbon galvanized steel wires, formed wires and tapes for armoring of cables
- v) PVC insulation and sheath
- vi) Cross linked polyethylene insulated PVC sheathed cables
- vii) Conductors for insulated electrical cables and flexible cords.
- viii) Standard test method for density of smoke from the burning or decomposition of plastics.
- ix) Tests on gases evolved during combustion of electric cables.
- x) Tests on electric cables under fire conditions.

Technical Requirements

i) The cables shall be suitable for laying on racks, in ducts, trenches, trestles, conduits and under-ground buried installation with chances of flooding by water.
ii) All cables of module area if laid on cable trays shall be covered. If cables are to be laid underground, laying shall be as per latest relevant code.
iii) Cables with copper conductor on DC side & that with aluminum conductor in AC side to be used as power cables shall have tensile strength as per relevant standards.
i) Conductors shall be stranded.
iv) Cables with XLPE insulation, PVC sheathed & armored suitable for a continuous conductor temperature of 900C and short circuit conductor temperature of 2500C shall be used.
v) PVC insulation shall be suitable for continuous conductor temperature of 700C and short circuit conductor temperature of 1600C.
vi) Only terminal cable joints shall be accepted. No cable joints to join two cable ends shall be accepted.
vii) Cables inside the control room shall be laid in suitable Cable Trays of approved type.
viii) Cable terminations for LT cables shall be made with suitable cable lugs & sockets etc. crimped properly and passed through brass compression type cable glands at the entry and exit point of the cubicles.
ix) The panels' bottoms shall be properly sealed to prevent entry of snakes / lizard etc. inside the panel.
x) The terminal end of cables and wires are to be fitted with good quality letter and number ferrules of proper sizes so that the cables can be identified easily.

Cable Selection & Sizing

All LT power cables of sizes more than 90 sq.mm shall be XLPE insulated, PVC sheathed and armored. Cables shall be sized based on the following considerations:

i) Rated current of the equipment
ii) DC Cable: Minimum voltage drop in the cable during full load running condition, maximum voltage drop shall be limited to 1% of the rated voltage
iii) AC Cable: Minimum voltage drop in the cable during full load running condition, maximum voltage drop shall be limited to 2% of the rated voltage
iv) Short circuit withstand capability.
v) De-rating factors for various conditions of installations including the following shall be considered while selecting the cable sizes:
    a. Variation in ambient temperature for cables laid in air.
    b. Grouping of cables.
    c. Variation in ground temperature and soil resistivity for buried cables.
    d. Cable lengths shall be considered in such a way that straight through cable joints is avoided. Cables shall be armored type if laid in yard area or directly buried.

Cable employed for series connection of PV modules through MC4 connectors shall be of 4 / 6 sq mm size subject to voltage drop value within acceptance.

Cable Constructional Features

1.1 kV Grade Cables:

i) 1.1 KV grade XLPE power cables on AC side shall have compacted aluminum conductor, XLPE insulated, armored, inner & outer PVC sheathed conforming to EPRA requirements/standards.
ii) Withstanding 90 0C continuous conductor temperature and 250 0C during short circuit, inner sheathed with heat resistant elastomeric compound, nylon cord reinforced, outer- sheathed with heat resistant, oil resistant and flame-retardant heavy-duty elastomeric compound conforming to KEBS standards.
iii) Cables laid in trenches and using Galvanized Cable trays of adequate strength shall be on structural (Mild Steel) supports.

Control Cables

i) 1.1 KV Grade control Cables shall have stranded copper conductor, PVC insulated with appropriate grade shall be used for all control cables required for the SPGP. The cables shall be terminated using Cu. Lugs of adequate cross section area with miller insulation between each pair and tinned copper screening.
ii) Control cables shall have minimum conductor cross-section of 1.5Sq.mm.

DC Side Cables

i) DC cables in the plant shall be with Copper conductors to be used between

a) Module to Modules inter connections
b) Strings to String Combiner Box
c) String Combiner Boxes (SCBs) / Array Junction Boxes (AJBs) to DC
d) Distribution Board (DCDB) & or SCBs / AJBs to Inverters

ii) Their guiding factor selected cables shall be the current carrying capacity after the considered reduction factors which shall be higher than 1.25 times of Isc under STC as per IEC 60364-7-712 and the annual energy yield loss is less than 1% as per prevailing norms and to be considered in the Energy Yield Estimation analysis.

iii) The selected cables for the community facility shall be

a. 1 Core, 4 Sq mm copper conductor (Electrolytic Tinned Copper IEC 60228, Class 5) or higher size, rated 600/1000V AC, as per module manufacturer recommendations for module to module interconnection (normally comes along with modules). The cable shall be solar grade cables with UV and weather resistant protected cables suitable for outdoor applications and confirming to TUV: 2 PfG 1169 / 08.2007.
b. 1 Core, 6 Sq mm copper conductor (Electrolytic Tinned Copper IEC 60228, Class 5) rated 600/1000V AC, solar grade cable with UV and weather resistant protected cables suitable for outdoor application according to TUV: 2 PfG 1169/ 08.2007, Ethylene propylene rubber (EPR) insulation with Ethylene-vinyl acetate (EVA) outer sheath or higher size as per approved design shall be used for cable joining the string to string combiner box (called as Home run cables).
c. 1.1 kV grade, single core with copper conductor, XLPE insulation, armored, with inner & outer PVC sheaths. The cable connecting the SCBs and inverters / DCDB shall be suitable underground laying and shall be 90 -120 sq.mm or more in size
d. Cables of appropriate size to be used in the system shall have the following characteristics:
   i) Temp. Range –10 0C to +80 0C.
   ii) Excellent resistance to Heat, Fire, oil, cold, water, abrasion, UV radiation.
   iii) Flexible Cabling on DC side of the system shall be as short as possible to minimize the voltage drop in the wiring
   iv) All parts shall be corrosion resistant.

Low Tension (LT) Cables

1.1 kV Grade, Al. conductor PVC armored cables in AC Side shall be used for all LT power cables between control cubicles, Motor Control Centres (MCC), respective feeders, etc.

These cables shall be laid on structural supports and using galvanized cable trays of adequate strength. The cable shall be terminated using Al. Lugs of adequate cross section area.

Danger Boards/Plates

Danger boards/ plates should be provided as per grid codes and requirements/specifications and must be affixed at various appropriate locations for safety of personnel.

Construction

The installation shall be carried out by an electrical contractor holding a valid license as required by the Government Authorities.

The contractor shall provide necessary drawings and documents required by statutory authorities and obtain the approval before taking up erection. It shall be the sole responsibility of the contractor to obtain safety certificates / approvals from local statutory authorities.

Any modification in the equipment or installation that may be demanded by the inspecting authorities shall be carried out by the contractor at no additional cost to the Employer.

In accordance with the specific installation instruction as per the manufacturers drawings or as directed by Employer, the successful Bidder shall unload, assemble, erect, install, test, commission and hand over all electrical equipment included in this contract.

Erection materials including all consumables, tools, testing instruments or any other equipment required for successful commissioning shall be arranged by the successful Bidder in a timely manner.

Clearing the site after completion, for ground-mounted systems, of erection as well as regular clearance of unwanted materials from site, returning excess materials supplied by

Employer back to Employer’s stores shall also be included under this scope of work.

All equipment and instruments, indoor and outdoor, shall be marked with Numbers and provided with suitable danger boards as per local electricity codes and standards before commissioning.

The contractor shall touch up the surface with paint of same shade for equipment, which are scratched and / or damaged during transportation and erection before commissioning.

The contractor shall employ skilled and semi-skilled labourers for erection, testing and commissioning as required. All the electricians, cable jointers, wiremen, welders and others employed shall posses' valid certificates / licenses recognized by relevant authorities.

The contractor shall set up his own facilities at site at allocated place to undertake fabrication/assembly jobs etc.

Civil works

The Contractor shall carry out civil works as called for in scope of work:

Pertaining to electrical equipment like foundation for modules structures in ground mounted SPGP or roof support grid for roof mounted SPGP.

Foundations and Structural Support of equipment, AC Distribution Boards (ACDB), DC boards, Inverters and associated trenches etc.

Enclosures for batteries, Inverter and other accessories.

Fencing

All minor civil works such as fixing of foundation bolts, cutting holes in walls, chipping of floor and ceiling etc. and making good the same after installation of the equipment.

All applicable foundations for equipment under scope of work and required to complete the associated work for SPGP only.

During erection, care is to be taken to see that painting does not peel off at any place and if so, it has to be given a 'Touch-up' after erection by the contractor.

Detailed Topographical Survey & Geotechnical Investigation of plant area

The turnkey contractor shall be responsible for detailed geotechnical investigation and topographical survey at required locations for the purposes of foundation design.

Land Development for site activities

The contractor is responsible for making the site ready by clearing of bushes, felling of trees (if required), leveling of ground and any associated earthworks (wherever required) etc. for commencing the SPGP.

Any other civil works advised by Employer for completion of the work related to Solar farm has to be carried out without any extra charges.

Earthing Testing after Installation

Tests to ensure continuity of all earth connections.

Tests to obtain earth resistance of the complete network by using earth tester. The test values obtained shall be within the limits.

Preparation of the Equipment for Commissioning

After completion of the installation at site and for the preparation of plant commissioning, the contractor shall check all the equipment and installation in accordance with the agreed standards, latest relevant code of practices of Kenyan Standards and specific instructions furnished by the particular equipment suppliers.

Checks required to be made on all equipment and installations at site shall comprise, but not be limited to the following:

(a) Physical inspection of Modules for removal of any foreign bodies, external defects, such as damaged/ loose connection in Junction Boxes & inverters etc. loose foundation bolts etc.
(b) Check for the free movement of mechanism for the circuit – breaker, rotating parts of the rotating machines and devices.
(c) Check for tightness of all cable joints and bus bar termination ends as well as earth connections in the main earthing network.
(d) Check for clearance of live bus bars and connectors from the metal enclosure.
(e) Check for proper alignment of all the modules etc.
(f) Continuity checks in case of power and control cables.
(g) Checking of all mechanical and electrical interlocks including tripping of breakers using manual operation of relay.
(h) Checking of alarm and annunciation circuits by manual actuation of relevant relays.
(i) Check and calibrate devices requiring field adjustment/calibration like adjustment of relay setting etc.

(j) Check for proper connection to earth network of all non-current carrying parts of the equipment and installation.

The relevant tests shall be carried out in accordance with relevant IEC of latest issue.

The tests which are to be carried out on the equipment shall include, but not be limited to, the testing of all electrical equipment as well as the system as a whole. This shall be carried out to ensure that the equipment and its components are in satisfactory condition and will successfully perform its functional operations. The inspection of the equipment shall be carried out to ensure that all materials, workmanship and installations conform to the following:

i) Completeness of installation.
ii) Each pole to earth insulation resistance test.

Cables

i) Insulation resistance test shall be conducted by megger for cables rated up to 1.1kV grade.
ii) All 1.1 kV cables shall be subjected to high voltage test after joining and terminating but before commissioning as per relevant standards.
iii) In each test, the metallic sheath/screen/armor should be connected to earth.
iv) Continuity of all the cores, correctness of all connections as per wiring diagram, correctness of polarity and phasing of power cables and proper earth connection of cable glands, cable boxes, armor and metallic sheath, shall be checked.

Testing & Commissioning

The testing and commissioning for all electrical equipment at site shall be according to the procedures listed below:

All electrical equipment shall be tested, installed and commissioned in accordance with the latest relevant standards and code of practices published by Kenyan Standards wherever applicable and stipulations made in relevant general specifications.

Accepted design, engineering and construction standards, as well as accepted code of practices and stipulations made in the relevant general specifications.

The contractor in the presence of representative / Consultant of Employer shall carry out all tests using his own calibrated instruments, testing equipment as well as qualified testing personnel.

The results of all tests shall conform to the specification requirements as well as any specific performance data, guaranteed during finalization of the contract.

Housing enclosures for equipment

The bidder is to provide suitable well ventilated and weather proof housing enclosures as per his optimized design for each SPGP to house indoor type equipment – Inverters, batteries, charge controllers, solar energy export meter etc. The housing enclosures shall be designed to the appropriate size as per equipment requirements. Minimum area shall be 6 square metres.

It shall consist of concrete foundation; the walling shall be masonry or pre-fabricated steel panels. The designs shall be subject to employer approval.

The enclosure should contain appropriate indoor lighting.

The enclosure shall have a main door with minimum height of 2100mm and with restricted access. It shall also have aluminium/steel casement windows complete with burglar proof bars.

Suitable fire protection system shall be designed for the enclosure in line with IEC or international norms regulation as applicable and system requirement considering project site.

The bidder is to supply complete civil lay out plan, elevation, details of each amenity, trenches and structural foundation detailed applicable designs for approval, complete with associated design calculations. Bidders are also required to consider aesthetics while designing.

After design review and approval by Employer or his representative, construction shall commence.

Fencing

The contractor shall provide chain link fencing with concrete posts around the perimeter of the demarcated area. Warning plates/danger plates etc. shall be provided in sufficient numbers all around the fencing as per safety requirements. The contractor will take prior approval of design from Employer.

Barbed wire shall be installed in 3no. wires above the chainlink fabric on supporting arms facing outwards from site at 45 degree angles.

The fence shall also include a double gate (one leaf for normal traffic, and the other to remain closed by means of a drop bolt locking into centre rest)

Materials for the chainlink fence

Fabric: ASTM A 392, 2 000 mm high, 3.8 mm diameter (No. 9 gauge) steel wire, 50 mm diamond pattern, twisted and barbed finish at top, knuckled wires at bottom, zinc coated.
Pipes: ASTM A 120, steel pile, hot-dipped zinc coated after welding, diameter and weight size as shown on drawings, unthreaded ends, free from burrs.
Fence fittings: ASTM F 626, hot-dipped zinc coated according to ASTM A 123.
Barbed wire: ASTM A 121, 2.51 mm diameter wire in strand (No.12-1/2 gauge), 2 strands with
4-point barbs spaced at 125 mm, Class 3 zinc coating.
Bottom wires: 5 mm (No. 6 gauge) steel wire, 500 g/m2 zinc coating. This shall be surrounded by a concrete beam (C20) as shown on the drawings.
Fence fittings: ASTM F 626, steel tension bars and bands, nuts and bolts, weather proof tops of commercial aluminium alloy, malleable cast iron, or rolled or pressed steel, cast iron and steel fittings hot-dipped galvanized with 500 g/m2 according to ASTM A123.

Solar Export Energy Meter

Export Energy meter system to measure solar generation, complete with CT, PT (where applicable) set shall be as per Requirements/specifications of EPRA (as per clause 5.3.7 and
5.3.8) and shall be installed at power plant end, in line with Grid code.

Design, Drawings for Electrical & Civil works (Drawing Section)

Submission of Drawings by contractor for Approvals

The Contractor shall submit design /drawings /design Calculations/data Sheets as applicable for each SPGP within 30days from the date of award for approval of Employer. The timely approval of design and drawings are of essence for timely completion of work.

Service Cables and Internal Wiring for Facilities

Scope of Internal Wiring

The bidder's scope includes design, supply, installation and commissioning of limited internal wiring.

Design work shall incorporate all necessary survey work, Customer premises picking, geo-referencing, obtaining & filling customer information as prescribed in a customer information template and updating of LVSWWDA Facility Data Base (FDB) to ensure all additional network is appropriately digitized. At project completion, "As Built Drawings" shall be used to permanently update the FDB.

Designs shall be approved by the employer. Four (4) physical files shall be availed to help in supervision. Soft copies of the designs shall also be submitted to the employer.

Each design file shall bear LVSWWDA's Design & Construction System (DCS) reference number and full costing into a Capital Works Authority (CWA) job to facilitate online tracking and eventual commissioning in FDB and final capitalization into assets.

The contractor shall be expected to be informed by the outcome of the design process of quantities to buy for certain materials that are difficult to predict.

Internal Wiring for Community Facilities

Contractor will carry out internal wiring for the main building of the community facility for 5 lighting points and 2 sockets in compliance with local codes and standards.

Lighting Fixtures

Type -	2 ft LED linear tube type with reflector fitted
Power rating -	11 - 20 watts
Operating Voltage range -	220-240V AC
Ballast Type -	Electronic
Power Factor of ballast/light assembly -	0.8
Colour Rendering Index -	80 or Better
Start to Full Brightness -	0 to 5 seconds
Lamp Lumen Maintenance -	Good
Efficacy (lumens/watt) -	60
Warranty -	1 year

NB: Ordinary Tungsten and Compact Fluorescent Lamps will NOT be considered

(Attach detailed technical specifications)

Switched Sockets

These shall be flush pattern in steel/pvc box and shall be of the gang type.

They shall be 13- Amp, 3-pin, shuttered, switched approved as per KS 04 – 246: 1987

For all lighting and sockets wiring shall be carried out in the "looping in" system and there shall be no joints whatsoever

Sub-circuit wiring

(i) Lighting circuits P. V.C. cable 1.5mm² for all lighting circuits

(ii) Power circuits P.V.C cable (minimum sizes): 2.5mm² for all socket wiring.

Specifications for Service Cables, Meters, Accessories and other items

25mm2 4C Aluminum cables

The technical specification for 25mm2 4C Aluminum cables shall comply with EPRA standard specification document no. KP1/3CB/TSP/05/001

16mm2 Single Phase PVC Insulated Single Phase Concentric Aluminum Cables (Low Voltage)

The technical specification for PVC insulated single phase concentric aluminum cables (Low Voltage) shall comply with EPRA standard specification document no. KP1/3CB/TSP/05/004

Earthing Rods

The technical specification for Earthing Rods and their connectors shall comply with EPRA standard specification document no. KP1/3CB/TSP/06/031-1

Low Voltage Fuse Cut-Out

The technical specification for LV fuse cut-out shall comply with EPRA standard specification document no. KP1/6C.1/13/TSP/11/023 and KP1/6C.1/13/TSP/11/022

Meter Box

The Bidder shall provide a Meter box for each installation suitable for housing the customer energy meter and withstanding climatic conditions. The design (drawings and technical details) of the Meter box shall be submitted to the employer for approval before manufacture commences.

Metering system

For customer meters:

i) On site, meter boxes must be sealable-EPRA standard.

ii) Customers` contracting data and installation certificates to be availed to EPRA.

iii) After meter installations, all meters and meter boxes must be sealed with serialized twist tights which conforms with EPRA standards.

iv) Meter installation technician to fill and submit IIR – Installation inspection report.

Single-Phase Static Meters for Active Energy

The technical specification for Single Phase Static Meters for active energy shall comply with

EPRA standard specification document no. TSP 14.11

Current and Potential Transformer Connected Meters

The technical specification for Current and Potential Transformer Connected Meters shall comply with EPRA standard specification document no. KP1/6C/4/1/TSP/14/020

SAFETY AND APPLICABLE LAWS

Safety of contractor staff

The safety of the Contractor's staff is the responsibility of the Contractor. The scope of supply includes adequate supply of Personal Protective Equipment (PPE) at each site. Replacement of worn out or damaged PPEs shall be the responsibility of the contractor

1.47.2 Safety during construction period

During construction Period the site engineer of the Contractor shall take adequate steps to ensure the proper use of the safety equipment by Contractor's staff at all times. The contractor shall be responsible for any accident/incidents that may occur at any site.

Applicable Safety Regulations

All works shall be executed in accordance with the requirement of the:

a) Occupational Safety and Health Act (OSHA),

b) Factories Act and rules,

c) Energy Act 2019,
d) KPLC safety rules and other applicable acts and rules or codes.

STATUTORY ACTS

Clearances

All legal formalities/clearances are to be obtained prior to commencement of work by the Contractor regarding the execution of the facility.

Applicable laws

The Contractor shall comply with all the Acts, rules and regulations, laws and by-laws framed by the County or the Government of the Republic of Kenya. The Employer shall have no liabilities in this regard.

Key Obligations of Contractor

The Contractor shall be responsible for installation and Maintenance of the PV system during the DLP, subject to the provisions of the Contract, in accordance with the following. It should be clearly understood that in the event of inconsistency between two or more of the following, the order of priority as between them shall be the order in which they are placed, with 'applicable Law' being the first:

a) Applicable Law.
b) The Terms and Conditions of Contract.
c) Technical specifications and
d) Any Approvals and Permits.

ENVIRONMENTAL AND SOCIAL SAFEGUARGDS

Adherence to ESHS Laws and ESMF

The Contractor shall be responsible for adherence to the Environmental and Social Safeguards as provisioned in the Contract and Kenyan Law.

In addition to providing the electricity generation, connection and supply, the Contractor shall at all times be required to adhere to the Environmental and Social Management Framework (ESMF) and Environmental and Social Management Plan (ESMP).

Compliance to Environmental and Social Management Framework during SF Development

The Contractor shall ensure the following while constructing and developing the SF:

i) Acquisition of relevant permits from Local Authority for setting up the SF,
ii) Acquisition of requisite approvals from National Environment Management Authority (NEMA), if applicable
iii) Acquisition of permission for Tree cutting (If applicable),
iv) Approval for use of water requirement,
v) Due diligence for waste management system or any pollution which may be generated from the plant or related activities
vi) Due diligence for Ground water usage/availability of water/ Right of way/drainage,
vii) Safe handling and management of E-waste (CFLs, batteries, LEDs, solar panels)
viii) Compliance with Workers Right, Health and Safety requirements as per the applicable local laws and World Bank Group Environmental, Health, and Safety Guidelines (EHSG).

Precautions to be taken during SF Development

The Contractor shall ensure that the following precautions are taken during construction, development and O&M phases of the SF.

Phase I: Site Identification and Design

All land used for PV system shall be within the compound of the beneficiary. The following activities shall be avoided:

i) Clearing of natural forest or using its resources,
ii) Any type of land acquisition resulting in involuntary resettlements,
iii) Avoidance of Land or any section of land having physical or any other cultural significance to the local community,
iv) Disputed land or have encroachments on them (informal settlers, non-titledentities),
v) Lack of provision for advance notice and lack of due crop compensation for owners and stakeholders.

vi) Adverse impact to any indigenous people (if any) in the community facility area.

Phase II: Solar Farm Implementation

The contractor shall avoid the following during implementation

i) Tree cutting without permission,
ii) Use of Chemical Pesticides,
iii) Blockage of drainage and consequent flooding or erosion due to cross drainage structures such as new roads or water access,
iv) Lack of internal drainage system for the rain fall run off,
v) Non-involvement of local labor.

Phase III: Solar Farm Operation and Maintenance

During O&M period, contractor shall take the following precautions

i) Avoid waste disposal or waste water run-off in the nearby fields,
ii) Have a water conservation plan,
iii) Ensure arrangements for safe handling and management of e-waste (CFLs, batteries, LEDs, solar panels),
iv) Avoid Non-compliance with Workers Rights, Health and Safety of the Workers and community at large.

Ground Water Uses/Right of Way

The contractor shall be responsible for provisions for Ground water usage/availability of water/drainage/Right of Way and other approvals, as required to complete the project. In case of difficulty, LVSWWDA will provide recommendation letter to other government departments on request of contractor.

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).

SECTION VII- BILLS OF QUANTITIES

Preambles

1. The measurements shall be based on actual executed works
The Site for **DRILLING, CONDITIONAL EQUIPPING AND CIVIL WORKS FOR GORGOR WATER PROJECT & KAPCHUMBA/KAPLONG BOYS HIGH WATER PROJECT IN BOMET COUNTY, SOTIK CONSTISTUENCY**

   The Contractor shall visit the site and acquaint itself with its nature and position, the nature of the ground, substrata and other local conditions, positions of existing power, water and other services, access roads or any other limitations that might affect his cost or progress. No claim for extras shall be considered on account of lack of knowledge in this respect.

2. The Contractor shall obtain the Project Manager's approval on the siting of all temporary buildings, spoil heaps, temporary access path, and storage of materials. The Contractor shall also obtain the Project Manager approval and direction regarding the use of any materials found on the Site.

3. The drawings used in the preparation of these Bills of Quantities can be inspected at the offices of the Procuring Entity or Procuring Entity's Representative during normal working hours. Two sets of the Working Drawings shall be provided to the contractor but additional copies shall be provided at a cost to be determined by the Engineer.

4. The Contractor shall allow for the payment of all bank charges in connection with the procurement of Bank Guarantees and stamp charges in connection with this contract Agreement.

5. The Contractor shall carry out the various sections of the Works in such an order as the Project Manager May direct. The Procuring Entity reserves the right to occupy the Works by sections on completion provided that such occupation is considered to be both practical and reasonable and will not interfere with the Works. The Contractor shall allow any costs associated with such occupation.

6. The main Contractor will be fully responsible for paying his Sub-Contractor but the Procuring Entity reserves the right in very exceptional circumstances to make such payments direct in the interests of the project where the completion thereof might be jeopardized by any dispute or vicariousness between the Contractor and the Sub- Contractor involve.

7. The Contractor shall complete and deliver the Works in the period inserted in the Form of Tender as his time for completion of the Works from the date for Possession, to be agreed with the Engineer. The Contract Period is presumed to have been calculated making due allowance for seasonal inclement weather conditions. No claim for extension of time due to the normal inclement weather for this area shall be entertained.

8. The Contractor shall, upon receiving instructions to proceed with the Works, draw up a Programme and Progress Chart setting out the order in which the Works are to be carried out, with the appropriate dates thereof. This Chart shall be agreed with the Project Manager and no deviation from the order set out in it will be permitted without the written consent of the Engineer. The Contractor will be responsible for arranging the above Programme with all his sub-Contractors and Specialties. The Contractor shall allow in his rates for carrying out this exercise, and for updating it as required.

9. The Contractor shall arrange for photographs of the Site to be taken by a professional photographer approved by the Engineer. The Photographs shall provide a record of the Site and adjacent are as prior to the commencement of the Works and shall cover such portion of the works in progress and completion as the Project Manager shall direct. All prints shall be full plate size, unmounted, and marked on the reverse side with the date of exposure, identification reference and brief description. The copyright of all photographs shall be vested in the Procuring Entity. The negatives and four prints from each negative shall be delivered to the Project Manager within two weeks of exposure.

10. Figured dimensions are to be followed in preference to dimensions scaled from the Drawings, but whenever possible dimensions are to be taken on the Site or from the buildings. Before any work is commenced by Sub- Contractors or Specialist Firms, dimensions must be checked on the site comparable dimensions shown on the drawings. The Contractor shall be responsible for the accuracy of such dimensions.

11. Prior to commencement of any work the Contractor is to ascertain from the relevant Authorities the exact position, depth and level of all existing electric cables, water pipes or other services in the area and he shall make whatever provisions may be required by the Authorities concerned for the support and protection of such services. Any damage or disturbance caused to any services shall be reported immediately to the Architect and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense. Where appropriate the Contractor shall open up the ground in advance of the main work by hand digging, if necessary, to locate precisely the position and details of the services which are likely to affect his operations.

12. The Contractor shall include in his prices for the transport of materials, workmen, etc./, to and from the site of the proposed works, at such hours and by such route as are permitted by the Authorities.

13. The Contractor will be required to make good, at his own expense and damage he may cause to the present road surface and pavements within or beyond the boundary of the Site, during the period of the works. All existing paths, storm water channels, etc., that may be destroyed or damaged during the progress of the Works shall be reinstated by the Contractor to the satisfaction of the Engineer.

14. The Contractor is to allow for complying with all instructions and regulations of the Police Authorities.

15. All water shall be fresh, clean and pure, free from earthly, vegetable or organic matter, acid or alkaline substance in solution. The Contractor shall provide at his own risk and cost all water for use in connection with the Works, (including works of sub–contractors). If need be, he shall make arrangements with the Local Water Authority for the installation of a separate meter for all water used by him throughout the Contract and pay all cost and fees in connection therewith. He shall also provide temporary storage tanks and tubing, etc., as may be necessary, and clear away at completion.

16. The Contractor shall provide all artificial lighting and power for his own use on the Works, (including Sub – Contractor's) including all temporary connections, wiring, fittings, etc., and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection there with.

17. The Contractor shall constantly keep on the Works a Literate English-speaking Agent or Representative, competent and experienced in the kind of work involved, who shall give his whole time to the superintendence of the works. (Including works of sub – contractors). Such Agent or Representative shall receive on behalf of the Contractor directions and instruction from the Engineer, and such directions and instructions shall be deemed to be given to the contractor in accordance with the Conditions of Contract. The Agent shall not be replaced without the specific approval of the Engineer.

18. The Contractor shall ensure that the safety of his work people and all authorized visitors to the site are protected at all times. In particular, there shall be the proper provision of guard–rails to scaffolding, protection against falling materials, tools on site, dust, nail and other sharp objects. The site shall be kept tidy and clear of dangerous rubbish. The Project Manager shall be empowered to suspend work on site should it be considered this condition is not being observed and no claim arising from such suspension will be allowed.

19. The areas available to the Contractor for workyards, offices and other facilities shall be directed by the Project Manager and any existing features to remain shall be protected from damage throughout the

Contract Period and handed back in good condition when they are vacated at the end of the Contract. If additional areas are required, the contractor shall source then at own cost.

20. The Contractor shall give the Project Manager reasonable notice of the intention to set out or take levels for any part of the Works so that arrangements may be made for checking the work. The accuracy of setting out and leveling shall be within the tolerances specified in the Specifications or on the Drawings. The checking of setting out or leveling by the Project Manager shall not relieve the Contractor of his duties or responsibilities under the Contract.

21. The Contractor must take steps necessary to safe guard and shall beheld fully responsible for any damage caused to existing and adjacent property, including buildings that are not a subject of demolition. He shall make good at his own cost damage to persons and property caused there on, and he shall indemnify the Procuring Entity against any loss or claim that may arise.

22. The Contractor shall take such steps and exercise such care and diligence as to minimize nuisance arising from dust, noise or any other cause to the occupiers of the existing and adjacent property. He must provide such temporary and special screens and tarpaulins or gummy bags, hoarding, barriers, warning signs etc. as he considers necessary and sufficient for the protection of the existing and adjacent property and or prevention of nuisance etc. as directed by Engineer.

23. The Contractors attention is drawn to the standards levy order which was amended on 15thOctober 1998.Legal notice No.154 of 1998. The Contractor is required to pay a monthly level of 0.2% of his factory price of construction works with effect from January 1999. Tenderer shall allow for this in the build-up of his rates.

24. The Contractor shall provide temporary sheds, offices washrooms, sanitary, accommodation and other temporary buildings for the use of the contractor and sub-contractors, including lighting furniture equipment and attendance.

25. Contractor shall provide/build labor camp sat areas to be agreed with the Engineer. Labor camps shall be complete with sanitary accommodation and fencing gates.

26. The Contractor must provide the necessary toilet facilities to the requirement and satisfaction of the Health Authorities and maintain the same in a thoroughly clean and sanitary condition and pay all conservancy fees during the period of the Works and remove when no longer required.

27. The Contractor shall provide at his own risk and cost all watching and lighting as necessary to safeguard the Works, Plant and materials against damage and theft.

28. The Contractor shall provide all necessary hoists, tackle, plant, equipment, vehicles, tools and appliances of every description for the due and satisfactory completion of the Works and shall remove the same on completion. All such plant, tools and equipment shall comply with all regulations in force throughout the period of the Contract and shall be altered or adopted during the Contract period as may be necessary to comply with any amendments in or additions to such regulations.

29. Provide, erect and maintain all necessary scaffolding, sufficiently strong and efficient for the due performance of the works, including Sub-Contract Works, provide special scaffolding as required by Sub-Contractors, alter and adopt all scaffolding as and when required during the Works, and remove on completion. No scaffolding is measured here in after and the Contractor must allow in his rates for this.

30. The Contractor shall take all necessary precautions such as temporary fencing, hoarding fans, planked footways, guard–rails gantries screen, etc., for the safe custody of the Works, materials and public protection and adjacent properties.

31. Cover up all and protect from damage, including damage from inclement weather, all finished work and unfixed materials, including that of Sub-Contractors, etc., to the satisfaction of the Project Manager until the completion of the Contract.

32. The Contractor shall, after completion of the works, at his own expense, remove and clear away all surplus excavated demolition materials, plant, rubbish and unused materials and shall leave the whole of the Site and Works in a clean and tidy state to the satisfaction of the Engineer, sheds, camps, etc. Particular care shall be taken to leave clean all floors and windows and tore move all paint and cement all rubbish and dirt as it accumulates. The Contractor is to find his own dump and shall pay all charges in connection there with.

33. Concrete test cubes shall be prepared in a set of three, as described including testing fees, labor and materials, making molds, transport, handling, etc. Allow in your rates for making at least four cubes on each occasion, from different batches; the concrete being taken from the point of deposit.

34. The Contractors Hall furnish at the earliest possible opportunity before work commences, and at his own cost, any samples of materials and workmanship that may be called for by the Project Manager for the approval or rejection, and any further samples in the case of rejection, until such samples are approved by the Engineer. Such samples, when approved, shall be the minimum standard for the work to which they apply. The procedure for submitting samples of materials for testing or approval and the method of marking for identification shall be as laid down by the Engineer. The Contractor shall allow in his Tender for such samples and tests, including those in connection with his Sub-Contractors work.

35. The Contractors attention is drawn to the Finance Bill of the year 2000/2001 on withholding tax on contractual payment section 35(7) (i)(ii) which became effective on 1st August 2000. A 3% withholding tax will be applicable to all interim payments for work done in respect of building or civil works. The contractor shall allow for any costs arising resulting there from in the build-up of rates.

36. Blasting will only be allowed with the express permission of the Architect in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost, in accordance with any Government regulations in force for the time being, and any special regulations laid down by the Project Manager governing the use and storage of explosives.

37. The National Construction Authority is a state corporation established under the national construction authority Act No.14 of 2011. The broad Mandate of the Authority is to oversee the construction industry and coordinate its development. The National Construction Authority Regulations 2014 with an effective date of 6th June 2014, regulation 25, - Allow 0.5% of the tender sum/contract sum for construction levy.

38. The Contractor attention is drawn to Finance Bill of 1993 where VAT was introduced in all contracts for construction services. The tenderer is also drawn to VAT Act Cap 476 clause 19(9). The tenderer must allow for VAT 1.19 as instructed elsewhere.

39. The contractor shall allow and pay for all insurance to cover risks and indemnities required Items 17 and 18 of the Conditions of contract and also specified in the Special Conditions of Contract.

BILL OF QUANTITIES

SUMMARY OF BILLS OF QUATITIES

Note: The Tenderer is advised to check and verify that the figures carried forward to the Summary Sheet is correct. Any discrepancy between the Summary Sheet and the Bills of Quantities may lead to disqualification of the bid.

S/No	**DRILLING, CONDITIONAL EQUIPPING AND CIVIL WORKS FOR GORGOR WATER PROJECT & KAPCHUMBA/KAPLONG BOYS HIGH WATER PROJECT IN BOMET COUNTY, SOTIK CONSTISTUENCY**	**AMOUNT (Ksh)**
Bill 1	Preliminaries and General Items	
Bill No. 2	Borehole Drilling, Conditional Equipping, and Civil Works for Gorgor Water Project Borehole	
Bill No. 3	Borehole Drilling, Conditional Equipping, and Civil Works for Kapchumba/Kaplong Boys High	
	Sub Total for 1, 2 and 3 above	
	Add 0.03% for Public Procurement Capacity Building Levy	
	Add 5% Contingency	
	Sub- Total for 5, 6 and 7	
	Add 16% VAT	
	GRAND TOTAL (8 and 9) C/F FORM OF TENDER	

BILL No. 1: PRELIMINARIES AND GENERAL ITEMS

DRILLING, CONDITIONAL EQUIPPING AND CIVIL WORKS FOR GORGOR WATER PROJECT & KAPCHUMBA/KAPLONG BOYS HIGH WATER PROJECT IN BOMET COUNTY, SOTIK CONSTISTUENCY					
ITEM	**DESCRIPTION**	**UNIT**	**QTY**	**RATE (KES)**	**AMOUNT (KES)**
1	**PRELIMINARY & GENERAL ITEMS**				
1.101	Allow a sum to cater for the supply of materials, fabrication, and erection of the publicity signboard as shall be directed by the project supervisor.	Nr	3		
1.102	Allow provisional sum of KES 300,000 to cater for project supervision of drilling of 2 No. Boreholes from inception to commissioning.	Item	1	300,000.00	300,000.00
1.103	Allow provisional sum of KES 250,000 to cater for project supervision Equipping and Civil Works for 2 No boreholes from inception to commissioning.	Item	1	250,000.00	250,000.00
1.104	Allow provisional sum of KES 150,000 to cater for fuel, insurance & maintenance for the project vehicle.	PS	1	150,000.00	150,000.00
1.105	Allow provisional sum of KES 200,000 to cater for processing of WRA (drilling permit and abstraction permit) and other necessary permits and licenses for 3No. boreholes.	Item	1	150,000.00	150,000.00
1.106	Allow a provisional sum of KES 150,000 to cater for the Capacity building of the respective project PMC, commissioning, and handover of each of the 3No. Borehole Water Projects.	PS	1	150,000.00	150,000.00
1.107	Add % to Contractor's profits and overheads to Items 1.102, 1.103, 1.104, 1.105 and 1.106	%		1,000,000.00	
1.108	Allow for Insurance of the Works, contractor's plant, injury of workmen and damages to property and third party	LS	1		
	Total for P&G Items Carried to Summary Page				

DRILLING, CONDITIONAL EQUIPPING & CIVIL WORKS FOR KEDOWA WATER PROJECT BOREHOLE – SOTIK CONSTITUENCY

Notes/Guidelines on Drilling and Conditional Equipping of Boreholes.

1. *Drilling of the borehole will be undertaken at the point specified by the Hydrogeological Report.*
2. *The borehole shall be drilled to the specified depth in the Bills of Quantities, unless formally instructed otherwise by the Project Manager.*
3. *No casing of the borehole shall be undertaken before approval by the Project Manager.*
4. *Test pumping shall be supervised by the Hydrogeologist/Project Engineer. The report shall be certified and signed by the Hydrogeologist/Project Engineer who has supervised the Test.*
5. *Based on the Test pumping, if the borehole yield is less than 1.75m3/hr, the borehole shall be unfeasible for motor-driven pump equipping. In that case, the Project Manager shall formally instruct the Contractor on the next steps, alternative site drilling, or declare the contract as completed for drilling without equipping.*
6. *If the event occurs that the Project Manager declares the project as completed without Equipping, the contractor shall be entitled to only the scope of works undertaken for drilling and corresponding costs under the Preliminary and General Items.*
7. *If a contractor proceeds to equip a borehole that is unfeasible, the Employer will be under no obligation to pay for the equipping.*

2.00	**BOREHOLE DRILLING**				
ITEM	**DESCRIPTION**	**UNIT**	**QTY**	**RATE (KES)**	**AMOUNT (KES)**
	Drilling				
2.01	Mobilization and transportation of whole drilling unit to site, erecting and dismantling of contractor's borehole plant and equipment including but not limited to drilling unit, support truck(s), test pumping, and borehole development units. Identification of suitable land for the Contractor's use is the obligation and responsibility of the Contractor. Rate to include confirmatory hydrogeological survey (Terms of Reference provided), and reinstatement of the site to the satisfaction of the Project Manager. *Note: The Licensed Hydrogeologist and methodology for the exercise MUST BE APPROVED BY THE AGENCY*	L/S	1		
2.02	Drilling of a borehole of minimum diameter 205mm through all types of strata, including disposal of excavated materials, taking any remedial measures to overcome caving-in, or over-drilling to accommodate sloughed material, and keeping drilling record 270 meters below ground level. Rate to include taking samples of drill cuttings at two (2) meter intervals.	M	270		
	Water				
2.03	Supply of water for drilling operations	Item	1		
	Supply and installation of screens and casings.				
2.04	Screens and casings shall be done to the satisfaction of the Procuring Entity. The base of the bottom casing shall be sealed as required				
2.05	Supply and install surface casings, mild steel casings 5 mm wall thickness, 209 mm internal diameter length as instructed by Geologist. Kindly note this item require supervisor's approval before installation	M	12		
2.06	Supply and install mild steel casings 4mm thickness,152 mm internal diameter plain steel casings in the borehole.	M	180		

2.07	Supply and install mild steel casings 4mm thickness,152 mm internal diameter plain steel casings in the borehole.	M	96		
	Gravel pack				
2.08	Supply and install approved gravel pack (rounded 2-4 mm diameter). The rate to include for the introduction of 500g/m3 of calcium hypochlorite disinfectant. Inert material to be used above the gravel pack before commencement of grouting	Ton	6		
	Grouting				
2.09	Grout between the casing and the borehole for top six (6) meters.	Ton	1		
	Borehole development:				
	Development shall be done to the satisfaction of the project manager. Contractor shall propose the methods he intends to use for approval. Rate to include installation and removal of the necessary plant				
2.10	Borehole development (physical & chemical), including the insertion and removal of development equipment;	Hrs	8		
	Test pumping and recovery measurements:				
2.11	Rates to include for installation and removal of test pumping equipment.				
2.12	Undertake 24Hours Constant Discharge Test as instructed and 6 6-hour recovery test measurements. Rate to include insertion and retrieval of test pumping equipment	Hrs	30		
	Well completion works				
2.13	Construction of a concrete sanitary seal slab for the well head area	LS	1		
2.14	Supply and fix a 6” borehole steel cap.	No.	1		
2.15	Allow for a Provisional Sum of Ksh. 20,000 for collecting water samples and carrying out full chemical and bacteriological analysis at Lake Victoria South Water Works Development Agency Laboratory.	PS	1	20,000.00	20,000.00
2.16	% Adjustment for Contractor's costs and profit for item 2.15	%		20,000.00	
	Total for Borehole Drilling				
2.2	**BOREHOLE EQUIPPING**				
2.21	Provisional Cost for supply, installation, testing and commissioning of a submersible pump capable of pumping expected yield against a head to be identified, complete with solar system, solar pumping control unit and support structures 4 metres high, installation sundries, all accessories including cables, pipes and fittings. *NB:* *1.Designs for the pump and solar must be approved by the Supervising Engineer.* *2. Warranty for the Pump set and its accessories should be at least 2years from the manufacturer/ supplier*	PC	1	1,932,000.00	1,932,000.00

2.22	Add % to contractor profits and overheads to item 2.21	%		1,932,000.00	
2.23	Rising main pipelines as DN 63 HDPE. The rate to include supply, excavation works, laying, jointing, testing and backfilling works.	m	100		
2.24	Rising main pipelines as DN 63 HDPE from the borehole to elevated water tank. The rate to include supply, excavation works, laying, jointing, testing and backfilling works.	m	20		
2.25	Distribution pipelines as DN 50 HDPE from the elevated tank to water points. The rate to include supply, excavation works, laying, jointing, testing and backfilling works.	m	100		
	Total for Borehole Equipping Carried to Summary				
2.3	**CONCRETE TANK BASE WITH 10,000LTS PLASTIC TANK**				
2.31	Supply, erect, test and commission a 9m high steel tower to carry 2No. 10,000lts plastic water tanks.The tower comprising of 4 No. 100mm * 100mm * 3mm thick prestressed SHS sitting on reinforced concrete pad footings,100mm * 100mm * 4mm thick primary beams, Horizontal bracings and 75mm *75mm*4mm thick SHS secondary beams, 4mm thick chequer plate and 900mm high MS Railing and Catladder to Engineers Detail. *NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	1		
2.32	Supply and install 2 No 10,000 litres plastic tank (UV resistant) as Roto or Approved Equivalent	Item	1		
2.33	Provide materials and construct 2 no. standard school water collection point complete with masonry wall, draining groove, catch pit & soak pit 10m away from the collection chamber and 6 taps fixed in series. Rate to include 200m-32mm dia. HDPE pipeline from the kiosk to the desired location and other necessary fittings to Engineers Approval *NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	2		
	Total for Ground Tank Carried to Summary Page				
2.4	**FENCE AND GATE**				
2.41	Provide, dig holes, install, and fasten:				
2.411	Excavate for, provide and erect chain link fence comprising concrete posts set 0.6m below ground, 1.8m Straight end, 0.6m Top Crank with concrete class 15 (1:4:8) surround, concrete posts at 3.0m centers. 12½ gauge (6 feet) chain link ,4 No. plain wire strands threaded through holes in posts, 3 No. strands 12½ gauge barbed wire tied to cranked top and weave to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and	m	80		

	disposal. *NB: Designs and Drawings must be approved by the Supervising Engineer*				
2.42	Gate				
2.421	Provide and install double gate of 3m wide X 2.0m high fabricated from dia. 50mm SHS (gauge 16) cut and welded to form 1.0m x 1.0m and 25mm x 25mm SHS cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint *NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	1		
	Total for Fencing and Gate Carried to Summary Page				
S/No	**SUMMARY**				**AMOUNT (Ksh)**
2.1	Borehole Drilling				
2.2	Borehole Equipping				
2.3	Concrete Tank Base With 10,000lts Plastic Tank				
2.4	Installation of Fence and Gate				
	Subtotal 1 for Kedowa Water Project Borehole				

DRILLING, CONDITIONAL EQUIPPING & CIVIL WORKS FOR GORGOR WATER PROJECT

Notes/Guidelines on Drilling and Conditional Equipping of Boreholes.

1. *Drilling of the borehole will be undertaken at the point specified by the Hydrogeological Report.*
2. *The borehole shall be drilled to the specified depth in the Bills of Quantities, unless formally instructed otherwise by the Project Manager.*
3. *No casing of the borehole shall be undertaken before approval by the Project Manager.*
4. *Test pumping shall be supervised by the Hydrogeologist/Project Engineer. The report shall be certified and signed by the Hydrogeologist/Project Engineer who has supervised the Test.*
5. *Based on the Test pumping, if the borehole yield is less than 1.75m3/hr, the borehole shall be unfeasible for motor-driven pump equipping. In that case, the Project Manager shall formally instruct the Contractor on the next steps, alternative site drilling, or declare the contract as completed for drilling without equipping.*
6. *If the event occurs that the Project Manager declares the project as completed without Equipping, the contractor shall be entitled to only the scope of works undertaken for drilling and corresponding costs under the Preliminary and General Items.*
7. *If a contractor proceeds to equip a borehole that is unfeasible, the Employer will be under no obligation to pay for the equipping.*

3.00	**BOREHOLE DRILLING**				
ITEM	**DESCRIPTION**	**UNIT**	**QTY**	**RATE (KES)**	**AMOUNT (KES)**
	Drilling				
3.01	Mobilization and transportation of whole drilling unit to site, erecting and dismantling of contractor's borehole plant and equipment including but not limited to drilling unit, support truck(s), test pumping, and borehole development units. Identification of suitable land for the Contractor's use is the obligation and responsibility of the Contractor. Rate to include confirmatory hydrogeological survey (Terms of Reference provided), and reinstatement of the site to the satisfaction of the Project Manager. Note: The Licensed Hydrogeologist and methodology for the exercise MUST BE APPROVED BY THE AGENCY	L/S	1		
3.02	Drilling of a borehole of minimum diameter 205mm through all types of strata, including disposal of excavated materials, taking any remedial measures to overcome caving-in, or over-drilling to accommodate sloughed material, and keeping drilling records as specified between ground level and 280 meters below ground level. Rate to include taking samples of drill cuttings at two (2) meter intervals.	M	280		
	Water				
3.03	Supply of water for drilling operations	Item	1		
	Supply and installation of screens and casings.				
3.04	Screens and casings shall be done to the satisfaction of the Procuring Entity. The base of the bottom casing shall be sealed as required				

3.05	Supply and install surface casings, mild steel casings 5 mm wall thickness, 209 mm internal diameter length as instructed by Geologist. Kindly note this item require supervisor's approval before installation	M	12		
3.06	Supply and install mild steel casings 4mm thickness,152 mm internal diameter plain steel casings in the borehole.	M	186		
3.07	Supply and install mild steel casings 4mm thickness,152 mm internal diameter plain steel casings in the borehole.	M	94		
	Gravel pack				
3.08	Supply and install approved gravel pack (rounded 2-4 mm diameter). The rate to include for the introduction of 500g/m3 of calcium hypochlorite disinfectant. Inert material to be used above the gravel pack before commencement of grouting	Ton	6		
	Grouting				
3.09	Grout between the casing and the borehole for top six(6) meters.	Ton	1		
	Borehole development:				
	Development shall be done to the satisfaction of the project manager. Contractor shall propose the methods he intends to use for approval. Rate to include installation and removal of the necessary plant				
3.10	Borehole development (physical & chemical), including the insertion and removal of development equipment;	Hrs	8		
	Test pumping and recovery measurements:				
3.11	Rates to include for installation and removal of test pumping equipment.				
3.12	Undertake 24Hours Constant Discharge Test as instructed and 6 6-hour recovery test measurements. Rate to include insertion and retrieval of test pumping equipment	Hrs	30		
	Well completion works				
3.13	Construction of a concrete sanitary seal slab for the well head area	LS	1		
3.14	Supply and fix a 6” borehole steel cap.	No.	1		
3.15	Allow for a Provisional Sum of Ksh. 20,000 for collecting water samples and carrying out full chemical and bacteriological analysis at Lake Victoria South Water Works Development Agency Laboratory.	PS	1	20,000.00	20,000.00
3.16	% Adjustment for Contractor's costs and profit for item 3.15	%		20,000.00	
	Total for Borehole Drilling				
3.2	**BOREHOLE EQUIPPING**				
3.21	Provisional Cost for supply, installation,	PC	1	1,932,000.00	1,932,000.00

	testing and commissioning of a submersible pump capable of pumping expected yield against a head to be identified, complete with solar system, solar pumping control unit and support structures 4 metres high, installation sundries, all accessories including cables, pipes and fittings. *NB:1. Designs for pump and solar must be approved by the Supervising Engineer.2. Warranty for Pump set and its accessories should be at least 2years from the manufacturer/ supplier*				
3.22	Add % to contractor profits and overheads to item 3.21	%		1,932,000.00	
3.23	Rising main pipelines as DN 63 HDPE. The rate to include supply, excavation works, laying, jointing, testing and backfilling works.	m	100		
3.24	Rising main pipelines as DN 63 HDPE from the borehole to elevated water tank. The rate to include supply, excavation works, laying, jointing, testing and backfilling works.	m	20		
3.25	Distribution pipelines as DN 50 HDPE from the elevated tank to water points. The rate to include supply, excavation works, laying, jointing, testing and backfilling works.	m	100		
	Total for Borehole Equipping Carried to Summary				
3.3	CONCRETE TANK BASE WITH 10,000LTS PLASTIC TANK				
3.31	Supply, erect, test and commission a 9m high steel tower to carry 2No. 10,000lts plastic water tanks.The tower comprising of 4 No. 100mm * 100mm * 3mm thick prestressed SHS sitting on reinforced concrete pad footings,100mm * 100mm * 4mm thick primary beams, Horizontal bracings and 75mm *75mm*4mm thick SHS secondary beams, 4mm thick chequer plate and 900mm high MS Railing and Catladder to Engineers Detail. *NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	1		
3.32	Supply and install 1No 10,000 litres plastic tank (UV resistant) as Roto or Approved Equivalent	Item	1		
3.33	Provide materials and construct 2 no. standard school water collection point complete with masonry wall, draining groove, catch pit & soak pit 10m away from the collection chamber and 6 taps fixed in series. Rate to include 200m-32mm dia. HDPE pipeline from the kiosk to the desired location and other necessary fittings to Engineers *Approval NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	2		

	Total for Ground Tank Carried to Summary Page				
3.4	FENCE AND GATE				
3.41	Provide, dig holes, install, and fasten:				
3.411	Excavate for, provide and erect chain link fence comprising concrete posts set 0.6m below ground, 1.8m Straight end, 0.6m Top Crank with concrete class 15 (1:4:8) surround, concrete posts at 3.0m centres. 12½ gauge(6 feet) chain link , 4 No. plain wire strands threaded through holes in posts, 3 No. strands 12½ gauge barbed wire tied to cranked top and weave to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal. NB: Designs and Drawings must be approved by the Supervising Engineer	m	80		
3.42	Gate				
3.421	Provide and install double gate of 3m wide X 2.0m high fabricated from dia. 50mm SHS (gauge 16) cut and welded to form 1.0m x 1.0m and 25mm x 25mm SHS cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint NB: Designs and Drawings must be approved by the Supervising Engineer	Item	1		
	Total for Fencing and Gate Carried to Summary Page				
S/No	**SUMMARY**				**AMOUNT (Ksh)**
3.1	Borehole Drilling				
3.2	Borehole Equipping				
3.3	Concrete Tank Base With 10,000lts Plastic Tank				
3.4	Installation of Fence and Gate				
	Subtotal 1 for Gorgor Borehole				

BILL NO.4: KAPKIAM PRIMARY SCHOOL BOREHOLE

4. KAPKIAM PIMARY SCHOOL BOREHOLE – AINAMOI CONSTITUENCY, KERICHO COUNTY					
	BOREHOLE DRILLING				
	Notes /Guidelines on Drilling and Conditional Equipping of Boreholes. *1) Drilling of the borehole will be undertaken at the point specified by the Hydrogeological Report.* *2) The borehole shall be drilled to the specified depth in the Bills of Quantities, unless formally instructed otherwise by the Project Manager.* *3) No casing of the borehole shall be undertaken before approval by the Project Manager.* *4) Test pumping shall be supervised by the Hydrogeologist/Project Engineer. The report shall be certified and signed by the Hydrogeologist/Project Engineer who has supervised the Test.* *5) Based on the Test pumping, if the borehole yield is less than 1.75m3/hr; the borehole shall be unfeasible for motor-driven pump equipping. In that case, the Project Manager shall formally instruct the Contractor on the next steps, alternative site drilling or declare the contract as completed for drilling without Equipping.* *6) If the event that the Project Manager declare the project as completed without Equipping, the contractor shall be entitled to only the scope of works undertaken for drilling and corresponding costs under the Preliminary and General Items.* *7) If a contractor proceeds to equip a borehole which is unfeasible, the Employer will be under no obligation to pay for the equipping.*				
4.2	**CONDITIONAL BOREHOLE EQUIPPING**				
	This section will only be undertaken after formal instruction (in writing) by the Project Manager to proceed.				
	Borehole development:				
	Development shall be done to the satisfaction of the project manager. Contractor shall propose methods he intends to use for approval. Rate to include installation and removal of necessary plant				
4.2.1	Borehole development (physical & chemical) including inserting and removal of development equipment;	Hrs.	8		
	Test pumping and recovery measurements:				
	Rates to include for installation and removal of test pumping equipment.				
4.2.2	Undertake 24Hours Constant Discharge Test as instructed and 6 hours' recovery test measurements. Rate to include insertion and retrieval of test pumping equipment	Hrs.	30		
	Well completion works				
4.2.3	Construction of concrete sanitary seal slab for well head area	LS	1		
4.2.4	Supply and fix 6" borehole steel cap.	No.	1		
4.2.5	Allow for a Provisional Sum of Ksh. 20,000 for collecting water samples and carrying out full chemical and bacteriological analysis at **Lake Victoria South Water Works Development Agency** Laboratory.	PS	1		

4.2.6	% Adjustment for Contractor's costs and profit for item 2.16	%	20%		
4.2.7	Allow Prime Cost for supply, installation, testing and commissioning of a submersible pump capable of pumping expected yield against a head to be identified, complete with solar system, solar pumping control unit and support structures 4 metres high, installation sundries, all accessories including cables, pipes and fittings. *NB:* *1.Designs for pump and solar must be approved by the Supervising Engineer.* *2. Warranty for Pump set and its accessories should be at least 2years from the manufacturer/ supplier* *3.Upon completion the Contractor shall be required to submit project completion report with all details describing the borehole, pump sets installed and installation depth etc.*	PC	1	2,120,000.00	2,120,000.00
4.2.8	Add % to contractor profits and overheads to item 3.1	%			
4.2.9	Construction of masonry borehole chamber, 200mm thick plastered internally and externally and installed with 2 flaps lockable, watertight steel top lid to fit the chamber. The lid shall be a GS frame heavy duty c/w provided with 3keys (Yale, Solex or Viro), lid painted with epoxy paint	LS	1		
	Total for Borehole Equipping Carried to Summary				
4.3	**9M HIGH STEEL TOWER TO CARRY 2 NO 10,000LTS PLASTIC WATER TANKS**				
4.3.1	Supply, erect, test and commission a 9m high steel tower to carry 2No. 10,000lts plastic water tanks.The tower comprising of 4 No. 100mm * 100mm * 3mm thick prestressed SHS sitting on reinforced concrete pad footings,100mm * 100mm * 4mm thick primary beams, Horizontal bracings and 75mm *75mm*4mm thick SHS secondary beams, 4mm thick chequer plate and 900mm high MS Railling and Catladder to Engineers Detail.	Item	1		
4.3.2	Supply and install 2No. 10,000 litres plastic tanks (UV resistant) as Roto or approved Equivalent by the Project Engineer.	Nr	2		
	Total for Steel Tower Carried to Summary Page				
4.4	**WATER KIOSK (with 4,000L plastic tank)** *NB: Designs and Drawings must be approved by the Supervising Engineer*				
4.4.1	Supply and install 1No 4,000 litres plastic tank as Roto or approved equivalent (UV resistant) by the Project Engineer.	Item	1		
4.4.2	Light bush clearing	m^2	100		
4.4.3	Excavate topsoil Average 150mm depth and cart away 5 meters for re-use.	m^2	9		

4.4.4	Excavate pit for 4No. 900 X 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth.	m^3	4		
4.4.5	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth.	m^3	7.2		
4.4.6	Provide and lay approved hardcore 300mm thick layer on the strip foundation	m^2	9		
4.4.7	Provide and construct 200mm thick by 450mm wide strip foundation (1:3:6)	m^3	1		
4.4.8	Provide and construct foundation walling using dressed stones (9" X 9'), bedded in mortar (1:4)	m^2	6		
4.4.9	Provide and place 300mm approved hardcore and properly rammed.	m^2	12		
4.4.10	Provide and place 50mm blinding concrete(1:3:6)	m^2	12		
4.4.11	Provide and place damp proof membrane on the blinded surface	m^2	12		
4.4.12	Provide and place reinforced concrete floor (1:2:4) 100mm thick	M^3	1.2		
4.4.13	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is keyed to Engineer approval	m^2	23		
4.4.14	Provide and cast reinforced column 200mm by 200mm and 2640mm high .Rate inclusive of reinforcement bars-D12	m^3	1		
4.4.15	Provide and cast reinforced ring beam measuring 12m x 450m x 200mm (1:2:4). Rate inclusive of reinforcement bars-D12	m^3	1.5		
4.4.16	Provide and construct a reinforced 150mm thick roof slab using high yield reinforcement bars of 10mm diameter to be spaced at 150mm C/C both ways and be in the mix of 1:2:4 (VRC). The parapet of 150mm high and 150mm wide round must also be reinforced.	m^3	3		
4.4.17	Provide 100mm dia. semicircular drainage groove covered with removable steel grill casement draining into 600 x 600mm catch pit	Item	1		
4.4.18	Allow sum for construction of soak pit complete with steel casement and drainage pipe from the catch pit	Item	1		
4.4.19	Provide and apply 20mm thick plaster to Roof, floor and walls (1:4) mortar	m^2	40		
4.4.20	Provide, fabricate and fix steel casement door (2100mm x 900mm)	No	1		
4.4.21	Provide, fabricate and fix grilled steel casement window(1300mm x 1200mm high)	No	1		
4.4.22	Allow sum for DN 32 mm Pipework for internal plumbing works at the Kiosk. Rate to include all necessary plumbing accessories i.e elbows,Tees,Union Sockets, 3 no. DN25 taps etc.	Item	1		
4.4.23	Provide and apply three coats of paints on the internal walls and roof slab.	m^2	40		

4.4.25	Provide and install DN25 mm Consumer meter as KENT or approved equivalent	No	1		
4.4.26	Allow provisional sum of KES 20,000 per borehole for branding the water kiosk, elevated tanks & Borehole chamber with **Lake Victoria South Water Works Development Agency colour code, Logo and Court of Arms** as per the Engineer approval.	PS	1	20,000	20,000
4.4.27	Add % to contractor profits and overheads to item 2.4.26	%			
	Total for Water Kiosk Carried to Summary Page				
4.5	**PIPELINE EXTENSION**				
4.5.1	Allow Provisional sum for laying, jointing and testing of HDPE and G.S pipes c/B: Rates to include Supply of pipes, Excavation, laying, jointing materials, cutting, threading and testing of the pipeline to Engineers Approval *NB: The approved pipes specifications to be provided by the supervising Engineer*	PS	1	650,000	650,000
4.5.2	Add % for the contractor's overheads and profits on item 6.1	%			
	Total for Pipeline Extension Carried to Summary Page				
4.6	**WATER POINTS**				
4.6.1	Provide materials and construct 4 no. standard water collection points complete with masonry wall, draining groove, catch pit & soak pit 10m away from the collection chamber and 6 taps fixed in series. Rate to include 200m-32mm dia. HDPE pipeline from the kiosk to the desired location and other necessary fittings to Engineers Approval *NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	4		
4.6.2	Allow for 4 no. Last mile Connection points within a radius n.e 100m from the BH. Rate to include 100m DN32 mm HDPE pipeline from Elevated tank the desired locations and other necessary fittings to Engineers Approval	Item	1		
	Total for LMC Carried to Summary Page				
4.7	**FENCE AND GATE**				
	Concrete Fencing Posts and Fence				
4.7.1	Excavate for, provide and erect chain link fence comprising concrete posts set 0.6m below ground, 1.8m Straight end, 0.6m Top Crank with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres. 12½ gauge(6 feet) chain link , 4 No. plain wire strands threaded through holes in posts, 3 No. strands 12½ gauge barbed wire tied to cranked top and weave to form mesh, concrete strutting posts at	m	80		

	corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal. *NB: Designs, Drawings and a Sample must be approved by the Supervising Engineer*				
	Gate				
4.7.2	Provide and install double gate of 3m wide X 2.0m high fabricated from dia. 50mm SHS (gauge 16) cut and welded to form 1.0m x 1.0m and 25mm x 25mm SHS cut and welded to form a mesh 150mm X 150mm. Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of sky blue gloss paint *NB: Designs and Drawings must be approved by the Supervising Engineer*	Item	1		
	Total for Fencing and Gate				
	TOTAL TO BE CARRIED TO SUMMARY SHEET.				

S/No	SUMMARY OF KAPKIAM PRIMARY SCHOOL BOREHOLE				AMOUNT (Ksh)
4.2	Borehole Equipping				
4.3	9m High Steel Tower to Carry 2 Nr. 10,000L Plastic Water Tanks				
4.4	Construction of Water Kiosk				
4.5	Pipeline Extension				
4.6	Last Mile Connections				
4.7	Installation of Fence and Gate				
	SUB TOTAL FOR KAPKIAM PRIMARY SCHOOL BOREHOLE				
	GRAND TOTAL C/F BOQ GRAND SUMMARY SHEET.				

5.8	**DAYWORKS**				
	Note: The Bill of Quantities is provisional. The Contractor shall not proceed with the Works unless and until a written instruction to that effect is issued by the Engineer				
	CLASS E: EARTHWORKS				
	Excavation shall include strutting, shuttering, stabilizing, excavated surfaces and keeping excavation free of water bailing out, pumping or other means.				
5.801	Commencing surface for excavation is top surface prior to excavation: excavation for Topsoil; maximum depth n.e 0.25 m - rate includes for working space	M3	3		
5.802	Commencing surface for excavation is top surface prior to excavation: excavation for Materials other than topsoil, rock or artificial hard material; maximum depth 0.25 - 0.5m- rate includes for working space	M3	3		
5.803	Commencing surface for excavation is top surface prior to excavation: excavation for Materials other than topsoil, rock or artificial hard material maximum depth 0.5 - 1m- rate includes for working space	M3	6		
	Filling				
	Filling to completed structures including compaction as specified				
5.804	Selected excavated material other than topsoil, rock or artificial hard material	M3	4		
5.805	50mm murrum blinding	M3	0.5		
5.806	300mm thick, hardcore fill compacted in 150mm layers	M3	3		
	CLASS F:IN SITU CONCRETE				
	Provision of concrete				
5.807	Blinding Concrete grade 15/20 - 50mm thick	M3	0.5		
5.808	Concrete Grade C25/20 for base slab, wall footing, ring beam and roof slab	M3	3.8		
	Placing of concrete				
	Mass concrete class 15/20				
5.809	Blinding layer,50mm thick under base slab and wall footings	M3	1		
	Reinforced concrete class 25/20				
5.810	Base slab,200mm thick	M3	2		
5.811	Roof slab,150mm thick	M3	1		
5.812	Ring beam,250mm thick	M3	0.6		
	CLASS G: CONCRETE ANCILLARIES				
	Form work; fair finish				
	plane horizontal				

5.813	Soffit of roof slab	M2	7		
	Sawn vertical to:				
5.814	External face to footing, base, ring beam and roof slab	M2	4.2		
5.815	Internal face to ring beam	M2	2.4		
	Reinforcement				
	Rate to include for supplying, delivery, cutting, bending, supporting and securing concrete				
5.816	T8 to ring beam links	Kg	60		
5.817	T10 high tensile steel in ring beam and roof slab	Kg	80		
5.818	T12 high tensile steel in columns and bases	Kg	120		
5.819	BRC A142 for floor slab	M2	7		
	CLASS W				
	4,000 litres capacity plastic tank				
5.820	Supply, install & test 4000 litres plastic water tank to the water kiosk roof slab. Rate to include for protective metallic cage around the tank as approved by the Engineer. All the metalic and concrete surcafes shall be painted with three coats of suitable paints as approved by the Engineer.	Nr	1		
	CLASS I: PIPEWORK – PIPES TO WATER KIOSK.				
	All pipes to be Galvanized mild steel, PN10				
5.821	Provide and install 32mm inlet pipe	M	6		
	CLASS J: PIPEWORK - FITTINGS AND VALVES				
	Rate to include for supply and installation of PN 16, GI fittings				
5.822	32mm dia. Elbows	Nr	3		
5.823	20mm elbow	Nr	3		
5.824	32mm dia. Valve sockets	Nr	4		
5.825	32x20 mm Reducing Tee	Nr	1		
5.826	32mm end plug	Nr	2		
5.827	32mm union	Nr	6		
5.828	32mm short nipple	Nr	4		
5.829	20mm union	Nr	3		
5.83	20mm short nipple	Nr	8		
5.831	20mm gate valve	Nr	3		
5.832	32mm socket gate valve	Nr	1		
5.833	32mm Ball Valve	Nr	1		
5.834	32mm Pegler or approved Water Meter per kiosk	Nr	1		
	CLASS U: BRICK WORK, BLOCK WORK AND MASONRY				

	Walling				
5.835	natural stone to walls to substructure and superstructure walling in 1:3 cement/sand mortar. Hoop iron in every 3 courses	M2	30		
	Ancillaries-Finishes				
5.836	20mm trowel finished plaster to the wall surfaces	M2	51		
	CLASS V: PAINTING				
5.837	Provide 3 coats of approved Emulsion paint to the wall surfaces	M2	51		
	CLASS Z: SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS				
5.838	Mild steel window, 1500x600mm with two end top hangs and one middle fixed panels	Nr	1		
5.839	Install a mild steel door measuring 900mm by 2100mm. Rate to include door frame and requisite iron mongery	Nr	1		

PART III - CONDITIONS OF CONTRACT AND CONTRACT FORMS

SECTION VIII - GENERAL CONDITIONS OF CONTRACT

These General Conditions of Contract (GCC), read in conjunction with the Special Conditions of Contract (SCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties.

These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

General Conditions of Contract

A. General

1. Definitions

1.1 Bold face type is used to identify defined terms.

a) **The 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.

b) **The Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.

c) **The Adjudicator** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.

d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.

e) **Compensation Events** are those defined in GCC Clause 42 hereunder.

f) **The Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 53.1.

g) **The Contract** is the Contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.

h) **The Contractor** is the party whose Bid to carry out the Works has been accepted by the Procuring Entity.

i) **The Contractor's Bid** is the completed bidding document submitted by the Contractor to the Procuring Entity.

j) **The Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.

k) **Days** are calendar days; months are calendar months.

l) **Day work**s are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

m) **A Defect** is any part of the Works not completed in accordance with the Contract.

n) **The Defects** Liability Certificate is the certificate issued by Project Manager upon correction of defects by the Contractor.

o) **The Defects Liability Period** is the period **named in the SCC** pursuant to Sub-Clause 34.1 and calculated from the Completion Date.

p) **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, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.

q) **The Procuring Entity** is the party who employs the Contractor to carry out the Works, **as specified in the SCC,** who is also the Procuring Entity.

r) **Equipmen**t is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

s) **"In writing" or "written"** means hand-written, type-written, printed or electronically made, and resulting in a permanent record;

t) The Initial Contract Price is the Contract Price listed in the Procuring Entity's Letter of Acceptance.

u) **The Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the SCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

v) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.

w) **Plant i**s any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

x) **The Project Manager** is the person **named in the SCC** (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.

y) **SCC** means Special Conditions of Contract.

z) **The Site** is the area of the works as **defined as such in the SCC**.

aa) **Site Investigation Reports** are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.

bb) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

cc) **The Start Date** is **given in the SCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

dd) **A Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

ee) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

ff) **A Variation** is an instruction given by the Project Manager which varies the Works.

gg) **The Works** are what the Contract requires the Contractor to construct, install, and turn over to the Procuring Entity, **as defined in the SCC**.

2. Interpretation

2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.

2.2 If sectional completion is specified in the SCC, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following order of priority:

a) Agreement,

b) Letter of Acceptance,

c) Contractor's Bid,

d) Special Conditions of Contract,

e) General Conditions of Contract, including Appendices,

f) Specifications,

g) Drawings,

h) Bill of Quantities[6], and

i) any other document **listed in the SCC** as forming part of the Contract.

[6] *In lump sum contracts, delete "Bill of Quantities" and replace with "Activity Schedule."*

3. Language and Law

3.1 The language of the Contract is English Language and the law governing the Contract are the Laws of Kenya.

3.2 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Procuring Entity's Country when

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

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

4. Project Manager's Decisions

4.1 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Procuring Entity and the Contractor in the role representing the Procuring Entity.

5. Delegation

5.1 Otherwise **specified in the SCC,** the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

7. Subcontracting

7.1 The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Procuring Entity in writing. Subcontracting shall not alter the Contractor's obligations.

8. Other Contractors

8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Procuring Entity between the dates given in the Schedule of Other Contractors, as **referred to in the SCC.** The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

9. Personnel and Equipment

9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.

9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

9.3 If the Procuring Entity, Project Manager or Contractor determines, that any employee of the Contractor be determined to have engaged in Fraud and Corruption during the execution of the Works, then that employee shall be removed in accordance with Clause 9.2 above.

10. Procuring Entity's and Contractor's Risks

10.1 The Procuring Entity carries the risks which this Contract states are Procuring Entity's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Procuring Entity's Risks

11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Procuring Entity's risks:

a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to

i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

ii) negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed by or contracted to him except the Contractor.

b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is a Procuring Entity's risk except loss or damage due to

aa) a Defect which existed on the Completion Date,

bb) an event occurring before the Completion Date, which was not itself a Procuring Entity's risk, or

cc) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Procuring Entity's risks are Contractor's risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the SCC** for the following events which are due to the Contractor's risks:

a) loss of or damage to the Works, Plant, and Materials;

b) loss of or damage to Equipment;

c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and

d) personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Procuring Entity may effect the insurance which the Contractor should have provided and recover the premiums the Procuring Entity has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.

13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Data

14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the SCC**, supplemented by any information available to the Contractor.

15. Contractor to Construct the Works

15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.

16. The Works to Be Completed by the Intended Completion Date

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

17. Approval by the Project Manager

17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.

17.2 The Contractor shall be responsible for design of Temporary Works.

17.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.

18. Safety

18.1 The Contractor shall be responsible for the safety of all activities on the Site.

19. Discoveries

19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Procuring Entity. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

20. Possession of the Site

20.1 The Procuring Entity shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the SCC,** the Procuring Entity shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

21. Access to the Site

21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

22. Instructions, Inspections and Audits

22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.

22.2 The Contractor shall keep, and shall make all reasonable efforts to cause its Subcontractors and sub-consultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.

22.3 The Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Procuring Entity and/or persons appointed by the Public Procurement Regulatory Authority 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 Public Procurement Regulatory Authority. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Public Procurement Regulatory Authority's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Public Procurement Regulatory Authority's prevailing sanctions procedures).

23. Appointment of the Adjudicator

23.1 The Adjudicator shall be appointed jointly by the Procuring Entity and the Contractor, at the time of the Procuring Entity's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the SCC, to appoint the Adjudicator within 14 days of receipt of such request.

23.2 Should the Adjudicator resign or die, or should the Procuring Entity and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Procuring Entity and the Contractor. In case of disagreement between the Procuring Entity and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the SCC at the request of either party, within 14 days of receipt of such request.

24. Settlement of Claims and Disputes

24.1 Contractor's Claims

24.1.1 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 Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.

24.1.2 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.

24.1.3 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.

24.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

24.1.5 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

a) this fully detailed claim shall be considered as interim;

b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and

c) the Contractor shall send a final claim within 30 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

24.1.6 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 Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

24.1.7 Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause

24.1.8 [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.

24.1.9 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.

24.1.10 If the Project Manager does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance with Sub-Clause 24.4 [Arbitration].

24.1.11 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 24.3.

24.2 Amicable Settlement

24.2.1 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 24.1 above should move to commence arbitration after the fifty-sixth day from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

24.3 Matters that may be referred to arbitration

24.3.1 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:

a) The appointment of a replacement Project Manager upon the said person ceasing to act.
b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
e) Any dispute arising in respect of war risks or war damage.
f) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

24.4 Arbitration

24.4.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 24.3 shall be finally settled by arbitration.
24.4.2 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.
24.4.3 Notwithstanding the issue of a notice as stated above, the arbitration of such a claim or dispute shall not commence unless an attempt has in the first instance been made by the parties to settle such claim or dispute amicably with or without the assistance of third parties. Proof of such attempt shall be required.
24.4.4 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 award any sums which ought to have been the subject of or included in any certificate.
24.4.5 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 requirement or notice had been given.
24.4.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.
24.4.7 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.
24.4.8 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and

the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the Works.

24.4.9 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

24.5 Arbitration with National Contractors

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

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

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

24.6 Alternative Arbitration Proceedings

24.6.1 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.

24.7 Failure to Comply with Arbitrator's Decision

24.7.1 The award of such Arbitrator shall be final and binding upon the parties.

24.7.2 In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

24.8 Contract operations to continue

24.8.1 Notwithstanding any reference to arbitration herein,

a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

b) the Procuring Entity shall pay the Contractor any monies due the Contractor.

25. Fraud and Corruption

25.1 The Government requires compliance with the country's Anti-Corruption laws and its prevailing sanctions policies and procedures as set forth in the Constitution of Kenya and its Statutes.

25.2 The Procuring Entity requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

B. Time Control

26. Program

26.1 Within the time stated in the SCC, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.

26.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

26.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

26.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

27. Extension of the Intended Completion Date

27.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

27.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28. Acceleration

28.1 When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Procuring Entity and the Contractor.

28.2 If the Contractor's priced proposals for an acceleration are accepted by the Procuring Entity, they are incorporated in the Contract Price and treated as a Variation.

29. Delays Ordered by the Project Manager

29.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

30. Management Meetings

30.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

30.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

31. Early Warning

31.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

31.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

32. Identifying Defects

32.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

33. Tests

33.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

34. Correction of Defects

34.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the SCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

34.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

35. Uncorrected Defects

35.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

36. Contract Price[7]

36.1 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

37. Changes in the Contract Price[8]

37.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Entity.

37.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

38. Variations

38.1 All Variations shall be included in updated Programs9 produced by the Contractor.

38.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and

before the Variation is ordered.

38.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.

38.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a

38.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning

38.6 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 39.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work

38.7 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

a) the proposed change(s), and a description of the difference to the existing contract requirements;
b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Procuring Entity may incur in implementing the value engineering proposal; and
c) a description of any effect(s) of the change on performance/functionality.

38.8 The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:

a) accelerate the contract completion period; or
b) reduce the Contract Price or the life cycle costs to the Procuring Entity; or
c) improve the quality, efficiency, safety or sustainability of the Facilities; or
d) yield any other benefits to the Procuring Entity, without compromising the functionality of the Works.

38.9 If the value engineering proposal is approved by the Procuring Entity and results in:

a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the **percentage specified in the SCC** of the reduction in the Contract Price; or
b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

39. Cash Flow Forecasts

39.1 When the Program[11], is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

40. Payment Certificates

40.1 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

40.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

40.3 The value of work executed shall be determined by the Project Manager.

40.4 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed12.

40.5 The value of work executed shall include the valuation of Variations and Compensation Events.

40.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

40.7 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*.

41. Payments

41.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of each certificate. If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

41.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

41.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.

41.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Procuring Entity and shall be deemed covered by other rates and prices in the Contract.

42. Compensation Events

42.1 The following shall be Compensation Events:

d) The Procuring Entity does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.

e) The Procuring Entity modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.

f) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.

g) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.

h) The Project Manager unreasonably does not approve a subcontract to be let.

i) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.

j) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Procuring Entity, or additional work required for safety or other reasons.

k) Other contractors, public authorities, utilities, or the Procuring Entity does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

l) The advance payment is delayed.

m) The effects on the Contractor of any of the Procuring Entity's Risks.

n) The Project Manager unreasonably delays issuing a Certificate of Completion.

42.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the

Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

42.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

42.4 The Contractor shall not be entitled to compensation to the extent that the Procuring Entity's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

43. Tax

43.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

44. Currency y of Payment

44.1 All payments under the contract shall be made in Kenya Shillings

45. Price Adjustment

45.1 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[13] **specified in the SCC,** representing the non-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 IOC is the index prevailing 30 days before Bid opening for inputs payable.

45.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

46. Retention

46.1 The Procuring Entity shall retain from each payment due to the Contractor the proportion stated in the **SCC** until Completion of the whole of the Works.

46.2 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 53.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

47. Liquidated Damages

47.1 The Contractor shall pay liquidated damages to the Procuring Entity at the rate per day stated in the **SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the SCC. The Procuring Entity may deduct liquidated

damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

47.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 41.1.

48. Bonus

48.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the SCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

49. Advance Payment

49.1 The Procuring Entity shall make advance payment to the Contractor of the amounts stated in the **SCC** by the date stated in the **SCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Procuring Entity in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

49.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

49.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

50. Securities

50.1 The Performance Security shall be provided to the Procuring Entity no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the SCC,** by a bank or surety acceptable to the Procuring Entity, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 day from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Completion Certificate in the case of a Performance Bond.

51. Dayworks

51.1 If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

51.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

51.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

52. Cost of Repairs

52.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

53. Completion

53.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the

Project Manager shall do so upon deciding that the whole of the Works is completed.

54. Taking Over

54.1 The Procuring Entity shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.

55. Final Account

55.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

[13] *The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non-adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other non-adjustable components. The sum of the adjustments for each currency are added to the Contract Price.*

56. Operating and Maintenance Manuals

56.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.

56.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the SCC pursuant to GCC Sub-Clause 56.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.

57. Termination

57.1 The Procuring Entity or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

57.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

a) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;

b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;

c) the Procuring Entity or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction oramalgamation;

d) a payment certified by the Project Manager is not paid by the Procuring Entity to the Contractor within 84 days of the date of the Project Manager's certificate;

e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;

f) the Contractor does not maintain a Security, which is required;

g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the SCC**; or

h) if the Contractor, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Procuring Entity may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

57.3 Notwithstanding the above, the Procuring Entity may terminate the Contract for convenience.

57.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and

leave the Site as soon as reasonably possible.

57.5 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental or not.

58. Payment upon Termination

58.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as specified in the SCC. Additional Liquidated Damages shall not apply. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.

58.2 If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

59. Property

59.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Procuring Entity if the Contract is terminated because of the Contractor's default.

60. Release from Performance

60.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

A. General	
GCC 1.1 (q)	**The Procuring Entity is:** Lake Victoria South Water Works Development Agency (LVSWWDA) • P.O. Box 3325-40100, Kisumu, • Tel: +254 (057) 2025128, • (020) 2157233, • Hotline 020-2463081 Email: info@lvswwda.go.ke
GCC 1.1 (u)	Time for Completion shall be; - **1 Month for Drilling Works.** - **5 Months for Equipping Works, Testing and Commissioning.** - **6 Months for Defects Liability Period (DLP).**
GCC 1.1 (x)	**The project Manager is:** Senior Manager Water Works and Services Lake Victoria South Water Works Development Agency (LVSWWDA) • P.O. Box 3325-40100, Kisumu, • Tel: +254 (057) 2025128, • (020) 2157233, • Hotline 020-2463081 Email: info@lvswwda.go.ke
GCC 1.1 (z)	The sites is located in Bomet County, Sotik Constituency
GCC 1.1 (cc)	The start date shall be the latest date the contractor shall begin execution of the works
GCC 1.1 (gg)	*The Works shall consist of:* **Procurement of works for Construction of Gorgor and Kapchumba/Kaplong Boys High School Boreholes in Bomet County** The works shall be awarded as one package but implemented in two phases. The success of phase 1(Drilling, Capping and Test Pumping) will determine whether phase 2(Equipping and Civil Works) will be implemented. a) The Borehole Construction and 24Hours constant discharge test, recovery test measurements and water quality analysis is dependent on the success of the borehole. A dry or low yield borehole (less than 1.75m^3/hr.) implies that the Client WILL NOT proceed with the subsequent works (installation of steel casings, gravel pack and test pumping). b) Borehole data from {b} above will be submitted to the Project Manager for review before approval is issued for Design for a submersible pump and accessories. A Quotation for submersible pump and accessories will then be issued to be filled and submitted for review and approval before commencement of borehole equipping. The phase 2(Equipping and Civil Works) will only commence after the contractor obtains the written approval from Lake Victoria South Water Works Development

	Agency. The works comprise; (i) Preliminary and General Items **Phase I- Mandatory Part of Contract** (i) Borehole Drilling, Capping and Test Pumping **Phase II- Conditional Part of Contract** (ii) Borehole Equipping and Civil Works (iii) 9m High Steel Tower to carry 2No. 10,000lts Plastic Water Tanks (iv) Pipeline Extension (v) Construction of water kiosk and cattle trough (vi) Last Mile Connections. (vii) Installation of Fence and Gate. **Phase II of the Contract shall be Subject to Successful yield of Borehole drilled in Phase I or existence of viable alternative source of water.**
GCC 2.2	**N/A**
GCC 5.1	The Project Manager **may** delegate any of his duties and authorities in writing.
GCC 8.1	Schedule of other Contractors: **N/A**

GCC 9.1	**Key Personnel** GCC 9.1 is replaced with the following: Key Personnel are the Contractor's personnel named in this GCC 9.1 of the Special Conditions of Contract. The Contractor shall employ the Key Personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of Key Personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.
GCC 13.1	The minimum insurance amounts and deductibles shall be: (a) For loss or damage to the Works, Plant, Materials and Contractor's Equipment: • Minimum Insurance Amount shall be the **Contract Sum plus the value of the Contractor's Plant & Equipment plus Kshs. 2,000,000 for clearance of debris** • Maximum Deductible shall be **10%** of Each Loss **(b)** For Personal Injury or death of the Contractor's Employees: **Kshs 2,000,000 per occurrence,** number of occurrences unlimited. **Maximum Deductible Kshs.25, 000.**
GCC 14.1	Site Data are: As provided in Part IV: Works Requirements.
GCC 20.1	The Site Possession Date(s) shall be **14 Days from the Commencement Date**

GCC 23.1 & **GCC 23.2**	Appointing Authority for the Adjudicator: **Chartered Institute of Arbitrators (Kenya Chapter).**
GCC 24.3	Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: **As agreed by all parties**
B. Time Control	
GCC 26.1	The Contractor shall submit for approval a Program for the Works within **14 days** from the date of the Letter of Acceptance.

GCC 26.3	The period between Program updates is **14 days.** The amount to be withheld for late submission of an updated Program 1% of Contract Amount
C. Quality Control	
GCC 34.1	The Defects Liability Period is: **6 months.**
D. Cost Control	
GCC 38.9	If the value engineering proposal is approved by the Procuring Entity the amount to be paid to the Contractor shall be **25%** of the reduction in the Contract Price.
	Payment Milestone
GCC 40.1	The Contractor shall submit request for payment once the following are successively achieved.

IPC No.	Milestone
1	Upon completion of drilling, test pumping and water quality analysis for the Borehole
2	Upon completion of borehole equipping with submersible pump, electromechanical Works and installation of Elevated Tanks
3	Upon completion of all Civil Works, Water Points and Water Kiosk. All works to be completed and tested.
	Release of Retention at the end of Defects Liability Period.

GCC 44.1	The currency of the Procuring Entity's Country is: **Kenya Shillings**.
GCC 45.1	The Contract **not subject** to price adjustment in accordance with GCC Clause 45
GCC 46.1	The proportion of payments retained is: **10%**

GCC 47.1	The liquidated damages for the whole of the Works are **0.1%** per day. The maximum amount of liquidated damages for the whole of the Works is **10%** of the final Contract Price.
GCC 48.1	The Bonus for the whole of the Works is **Not Applicable**
GCC 49.1	The Advance Payments is **Not Applicable**
GCC 50.1	The Performance Security amount is **1% of the Contract Price**
E. Finishing the Contract	
GCC 56.1	The date by which operation and maintenance manuals are required is ***28 days before site taking over date.*** The date by which "as built" drawings are required is ***28 days before site taking over date.***
GCC 56.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is ***1% of the contract sum***
GCC 58.1	The percentage to apply to the value of the work not completed, representing the Procuring Entity's additional cost for completing the Works, is ***the current market rate for outsourcing the works plus 15% of the rate as penalty.***

FORM No 1: NOTIFICATION OF INTENTION TO AWARD

This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative
   - *i)* Name: *[insert Authorized Representative's name]*
   - *ii)* Address: *[insert Authorized Representative's Address]*
   - *iii)* Telephone: *[insert Authorized Representative's telephone/fax numbers]*
   - *iv)* Email Address: *[insert Authorized Representative's email address]*

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

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

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

3. Notification of Intention to Award

   - *i)* Procuring Entity: *[insert the name of the Procuring Entity]*
   - *ii)* Project: *[insert name of project]*
   - *iii)* Contract title: *[insert the name of the contract]*
   - *iv)* Country: *[insert country where ITT is issued]*
   - *v)* ITT No: *[insert ITT reference number from Procurement Plan]*

   This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender

   Submit a Procurement-related Complaint in relation to the decision to award the contract.

   a) The successful tenderer

      i) Name of successful Tender__

      ii) Address of the successful Tender __

      iii) Contract price of the successful Tender Kenya Shillings

      _____

      (in words)

   b) Other Tenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out. For Tenders not evaluated, give one main reason the

Tender was unsuccessful.

S/No	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

5. How to request a debriefing

a) DEADLINE: The deadline to request a debriefing expires at midnight on [*insert date*] (*local time*).

b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.

c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:

i) Attention: [*insert full name of person, if applicable*]

ii) Title/position: [*insert title/position*]

ii) Agency: [*insert name of Procuring Entity*]

iii) Email address: [*insert email address*]

d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (5) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (5) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint

a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:

i) Attention: [*insert full name of person, if applicable*]

ii) Title/position: [*insert title/position*]

iii) Agency: [*insert name of Procuring Entity*]

iv) Email address: [*insert email address*]

c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website info@ppra.go.ke or complaints@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 fourteen (14) Days after the date of transmission of this Notification of Intention to Award.

iii) The Standstill Period may be extended as stated in paragraph Section 5 (d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature:_____ **Name:**_____

Title/position:_____ **Telephone:**___ **Email:** _____

_____

FORM NO 2: NOTIFICATION OFAWARD - LETTER OFACCEPTANCE

[letterhead paper of the Procuring Entity] [date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is hereby accepted by …… (*name of Procuring Entity)*.

You are requested to furnish the Performance Security within 30 days 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 3: CONTRACT AGREEMENT

THIS AGREEMENT made the_____day of_____, 20____, between

_____of _____ (hereinafter "the Procuring

Entity"), of the one part, and_____of_

_____(hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Works known as

_____

should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
   a) the Letter of Acceptance
   b) the Letter of Tender
   c) the addenda No's_____(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 hereby 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 hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the Laws of Kenya on the day, month and year specified above.

Signed and sealed by_____(for the Procuring Entity)

Signed and sealed by_____(for the Contractor).

FORM NO. 4 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary:_____*[insert name and Address of* Procuring Entity*]* **Date:**

_____*[Insert date of issue]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____(hereinafter called "the Contractor") has entered into Contract No._____dated_____ _____with (*name of Procuring Entity*)____(the Procuring Entity as the Beneficiary), for the execution of _____(Hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____(*in words*),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified 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],* 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.*

FORM No. 5 - PERFORMANCE SECURITY

[Option 2– Performance Bond]

[Note: Procuring Entities are advised to use Performance Security – Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary:_____*[insert name and Address of* Procuring Entity*]*

Date:_____*[Insert date of issue]***.**

PERFORMANCE 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 thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter 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 thereunder, the Surety may promptly remedy the default, or shall promptly:
   1) complete the Contract in accordance with its terms and conditions; or
   2) obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable 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
   3) pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named herein or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day___of_____20_____.

SIGNED ON_____on behalfof By___in the capacity of

In the presence of

SIGNED ON_____on behalf of By__in the capacity of

In the presence of

FORM NO. 6 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: Lake Victoria South Water Works Development Agency; P.O. Box 3325-40100, Kisumu
Date:_____*[Insert date of issue]*

ADVANCE PAYMENTGUARANTEE 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 Rehabilitation and (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, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(*in words*_____)[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
   a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number_____at____.

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the _____ day of_____, 2 ,2 whichever is earlier. Consequently, 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

FORM NO. 7 - RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: Lake Victoria South Water Works Development Agency; P.O. Box 3325-40100, Kisumu

Date:_____*[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: [*Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____*[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____*[insert reference number of the contract]* dated_____with the Beneficiary, for the execution of (hereinafter called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[*insert the second half of the Retention Money] is to be made against a Retention Money guarantee.

3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]*_____(*[insert amount in words*_____*])*[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number_____at_____*[insert name and address of Applicant's bank]*.

5. This guarantee shall expire no later than the …..... Day of ….....……, 2.....…[2], and any demand for payment under it must be received by us at the office indicated above on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year],* in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

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

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					
2.	Full Name		Directly----	Directly……		

	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)**
	National identity card number or Passport number		------- % of shares Indirectly---------- % of shares	…….% 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……
	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 person named 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