



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

**KARATINA UNIVERSITY**  
**P.O. BOX 1957 -10101 KARATINA**  
Email address: [info@karu.ac.ke](mailto:info@karu.ac.ke)

**TENDER NO: KarU/OT/002/2021-2022 FOR STRUCTURED CABLING, IP-PABX, CCTV AND ACCESS CONTROL SUB-CONTRACT FOR THE PROPOSED LIBRARY KARATINA UNIVERSITY.**

**CLOSING DATE AND TIME AS INDICATED IN INVITATION TO TENDER**

**AUGUST, 2021.**

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# **INVITATION TO TENDER**

**PROCURING ENTITY: KARATINA UNIVERSITY**

**CONTRACT NAME AND DESCRIPTION: STRUCTURED CABLING, IP-PABX, CCTV AND ACCESS CONTROL SUB-CONTRACT FOR THE PROPOSED LIBRARY KARATINA UNIVERSITY.**

**(KarU/OT/002/2021-2022)(RE-ADVERTISED)**

- 1. The KARATINA UNIVERSITY invites sealed tenders for STRUCTURED CABLING, IP-PABX, CCTV AND ACCESS CONTROL SUB-CONTRACT FOR THE PROPOSED LIBRARY KARATINA UNIVERSITY.**
2. Tendering will be conducted under open competitive method (National) using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours **[0800 to 1700 hours]** at the address given below.
4. A complete set of tender documents may be purchased or obtained by interested tenders upon payment of a non-refundable fees of **(Kenya shillings 1000.00)** in cash or Banker's Cheque and payable to the address given below. Tender documents may be obtained electronically from the Website [www.karu.ac.ke](http://www.karu.ac.ke) or the PPIP tender portal: [www.tenders.go.ke](http://www.tenders.go.ke). Tender documents obtained electronically will be free of charge.
5. Tender documents may be viewed and downloaded for free from the website [www.karu.ac.ke](http://www.karu.ac.ke) or the PPIP tender portal: [www.tenders.go.ke](http://www.tenders.go.ke). Tenderers who download the tender document must forward their particulars immediately to [procurement@karu.ac.ke](mailto:procurement@karu.ac.ke) **0729721200 and P.O. BOX 1957-10101 KARATINA**) to facilitate any further clarification or addendum.
6. Tenders shall be quoted be in Kenya Shillings and shall include all taxes. Tenders shall remain valid **for One Hundred And Twenty (120) days** from the date of opening of tenders.
7. All Tenders must be accompanied by a *tender Security* of **Kshs. 150,000.00 Valid for 150 Days starting from the date of tender closing.**
8. The Tenderer shall **chronologically serialize all pages** of the tender documents submitted.
9. Completed tenders must be delivered to the address below on or before **12.00 NOON EAT on 1<sup>st</sup> September, 2021.** Electronic Tenders **will not** be permitted.
10. Tenders will be opened immediately after the deadline date and time specified above or any dead line date and times specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.
11. Late tenders will be rejected.
12. The addresses referred to above are:

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

- (1) Name of Procuring Entity: **KARATINA UNIVERSITY**
- (2) Physical address for hand Courier Delivery to an office or Tender Box: **PROCUREMENT DEPARTMENT, MAIN CAMPUS, KAGOCI, KARATINA**
- (3) Postal Address: **P.O. BOX 1957-10101 KARATINA**
- (4) Insert name, telephone number and e-mail address of the officer to be contacted: **Head of Procurement, TEL: 0729721200, EMAIL: [procurement@karu.ac.ke](mailto:procurement@karu.ac.ke)**

**B. Address for Submission of Tenders.**

**VICE CHANCELLOR,  
KARATINA UNIVERSITY,  
P.O. BOX 1957-10101  
KARATINA.**

Bid document to be deposited in the Tender Box located at the Administration Block at the Main Campus Kagochi - Karatina.

Bulky tenders to be delivered to the Procurement Office at Main campus Kagochi Karatina for registration.

**C) Address for Opening of Tenders.**

**KARATINA UNIVERSITY  
CONFERENCE HALL,  
MAIN CAMPUS, KAGOCI, KARATINA**

**The Vice Chancellor, Karatina University  
P.O Box 1957-10101,  
KARATINA**

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## **PART1: TENDERING PROCEDURES**

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## SECTION I - INSTRUCTIONS TO TENDERERS

### A GENERAL PROVISIONS

#### 10 Scope of tender

11 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.

12 Throughout this tendering document:

- a) The term “inwriting” means communicated in written form (e.g. by mail, e-mail, fax, including if specified in the TDS, distributed or received through the electronic-procurement system used by the Procuring Entity) with proof of receipt;
- b) if the context so requires, “singular” means “plural” and vice versa;
- c) “Day” means calendar day, unless otherwise specified as “Business Day”. A Business Day is any day that is an official working day of the Procuring Entity. It excludes official public holidays.

#### 20 Fraud and corruption

21 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.

22 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.

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

24 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.

#### 30 Eligible tenderers

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

32 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.

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

- a) Directly or indirectly controls, is controlled by or is under common control with another tenderer;
  - b) Receives or has received any direct or indirect subsidy from another tenderer;
  - c) Has the same legal representative as another tenderer;
  - d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process;
  - e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods or works that are the subject of the tender;
  - f) Any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as a consultant for Contract implementation;
  - g) Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document;
  - h) Has a close business or personal relationship with senior management or professional staff of the Procuring Entity who has the ability to influence the bidding process and:
    - i) Are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or
    - ii) May be involved in the implementation or supervision of such Contract unless the conflicts stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.
- 34** A tenderer shall not be involved in corrupt, coercive, obstructive or fraudulent practice. A tenderer that is proven to have been involved in any of these practices shall be automatically disqualified
- 35** A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. Members of a joint venture may not also make an individual tender, be a sub-contractor in a separate tender or be part of another joint venture for the purposes of the same Tender. A firm that is not a tenderer or a JV member may participate as a subcontractor in more than one tender.
- 36** A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT3.9. A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed sub-contractors or sub-consultants for any part of the Contract including related Services.
- 37** A Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA [www.ppra.go.ke](http://www.ppra.go.ke).
- 38** A Tenderer that is a state-owned enterprise or a public institution in Kenya may be eligible to tender and be awarded Contract(s) only if it is determined by the Procuring Entity to meet the following conditions, i.e. if it is:
- i) A legal public entity of Government and/or public administration,
  - ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and;
  - (iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it compete with firms in the private sector on an equal basis.
- 39** Firms and individuals shall be ineligible if their countries of origin are:
- (a) As a matter of law or official regulations, Kenya prohibits commercial relations with that country;
  - (b) By an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

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

- 3.10** Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, local sub-contracts and labor) from citizen suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided for this purpose in “*SECTION II - EVALUATION AND QUALIFICATION CRITERIA, Item 9*”.
- 3.11** Pursuant to the eligibility requirements of ITT 3.10, a tender is considered a foreign tenderer, If it is registered in Kenya and has less than 51 percent ownership by nationals of Kenya and if it does not subcontract to foreign firms or individuals more than 10 percent of the contract price, excluding provisional sums. JVs are considered as foreign tenderers if the individual member firms registered in Kenya have less 51 percent ownership by nationals of Kenya. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.
- 3.12** The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website [www.nca.go.ke](http://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](http://www.cak.go.ke).
- 3.14 A Kenyan tenderer shall be eligible to tender if it provides evidence of having fulfilled his/her tax obligations by producing valid tax compliance certificate or tax exemption certificate issued by the Kenya Revenue Authority.
- 40 Eligible goods, equipment, and services**
- 41** Goods, equipment and services to be supplied under the Contract may have their origin in any country that is not ineligible under ITT 3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment and services.
- 42** 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.
- 50 Tenderer's responsibilities**
- 51** 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.
- 52** The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the Site of the Works and its surroundings and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be the tenderer's own expense.
- 53** 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 liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the examination and inspection.



- 54 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**

### **60 Sections of Tender Document**

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

#### **PART 1: Tendering Procedures**

Section I – Instructions to Tenderers

Section II – Tender Data Sheet (TDS)

Section III- Evaluation and Qualification

Criteria Section IV – Tendering Forms

#### **PART 2: Works' Requirements**

Section V - Bills of Quantities

Section VI - Specifications

Section VII - Drawings

#### **PART 3: Conditions of Contract and Contract Forms**

**Section VIII - General Conditions (GCC)**

Section IX - Special Conditions of Contract

Section X- Contract Forms

- 62 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Contract documents. Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of a pre-arranged site visit and those of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 10. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.
- 63 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.
- 70 Clarification of Tender Document, Site Visit, Pre-tender Meeting**
- 71 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the **TDS** or raise its enquiries during the pre-Tender meeting if provided for in accordance with ITT 7.2. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS** prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender documents in accordance with ITT 7.4, including a description of the inquiry but without identifying its source. If so specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents following the procedure under ITT 8 and ITT 22.2.
- 72 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the site(s) of the required contracts and obtain all information that may be necessary for preparing a tender. The costs of visiting the Site shall be at the Tenderer's own expense. The Procuring Entity shall specify in the **TDS** if a pre-arranged Site visit and or a pre-tender meeting will be held, when and where. The Tenderer's designated representative is invited to attend a pre-arranged site visit and a pre-tender meeting, as the case may be. The purpose of the site visit and the pre-tender meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 73 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.
- 74 Minutes of a pre-arranged site visit and those of the pre-tender meeting, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting,

will be transmitted promptly to all Tenderers who have acquired the Tender Documents. Minutes shall not identify the source of the questions asked.

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

## **80 Amendment of Tender Documents**

- 81** At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tender Documents by issuing addenda.
- 82** Any addendum issued shall be part of the Tender Documents and shall be communicated in writing to all who have obtained the Tender Documents from the Procuring Entity. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's website in accordance with ITT 7.5.
- 83** To give Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity should extend the dead line for the submission of Tenders, pursuant to ITT 22.2.

## **C. PREPARATION OF TENDERS**

### **9. Cost of Tendering**

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

### **10.0 Language of Tender**

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

### **11.0 Documents Comprising the Tender**

#### **11.1** The Tender shall comprise the following:

- a) Form of Tender prepared in accordance with ITT 12;
- b) Schedules including priced Bill of Quantities, completed in accordance with ITT 12 and ITT 14;
- c) Tender Security or Tender-Securing Declaration, in accordance with ITT 19.1;
- d) Alternative Tender, if permissible, in accordance with ITT 13;
- e) **Authorization**: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 20.3;
- f) **Qualifications**: documentary evidence in accordance with ITT 17 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;
- g) **Conformity**: a technical proposal in accordance with ITT 16;
- h) Any other document required in the **TDS**.

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

## **12.0 Form of Tender and Schedules**

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

## **13 Alternative Tenders**

- 13.1 Unless otherwise specified in the TDS, alternative Tenders shall not be considered.
- 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **TDS**, and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.
- 13.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.
- 13.4 When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

## **140 Tender Prices and Discounts**

- 14.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Bill of Quantities shall conform to the requirements specified below.
- 14.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.
- 14.3 The price to be quoted in the Form of Tender, in accordance with ITT 12.1, shall be the total price of the Tender, including any discounts offered.
- 14.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 12.1.
- 14.5 It will be specified in the **TDS** if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except in cases where the contract is subject to fluctuations and adjustments, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.
- 14.6 Where tenders are being invited for individual lots (contracts) or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 14.4, provided the Tenders for all lots (contracts) are opened at the same time.

- 147** 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.
- 150 Currencies of Tender and Payment**
- 151** The currency(ies) of the Tender and the currency(ies) of payments shall be the same.
- 152** Tenderers shall quote entirely in Kenya Shillings. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in Kenya shillings.
- a) A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya (referred to as “the foreign currency requirements”) shall (if so allowed in the **TDS**) indicate in the Appendix to Tender the percentage(s) of the Tender Price (excluding Provisional Sums), needed by the Tenderer for the payment of such foreign currency requirements, limited to no more than two foreign currencies.
- b) The rates of exchange to be used by the Tenderer in arriving at the local currency equivalent and the percentage(s) mentioned in (a) above shall be specified by the Tenderer in the Appendix to Tender and shall be based on the exchange rate provided by the Central Bank of Kenya on the date 30 days prior to the actual date of tender opening. Such exchange rate shall apply for all foreign payments under the Contract.
- 153** Tenderers may be required by the Procuring Entity to justify, to the Procuring Entity's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Adjustment Data in the Appendix to Tender are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Tenderers.

## **16.0 Documents Comprising the Technical Proposal**

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

## **17.0 Documents Establishing the Eligibility and Qualifications of the Tenderer**

- 171** Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.
- 172** 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.
- 173** If a margin of preference applies as specified in accordance with ITT 33.1, national tenderers, individually or in joint ventures, applying for eligibility for national preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.
- 174** Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.
- 175** The purpose of the information described in **ITT 17.4** above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.
- 176** 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 6.4. The obligations to require this information shall continue for the duration

Of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

- 177** 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.
- 178** 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.
- 179** 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 as depending the outcome of (iii),
  - iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other person have committed any criminal offence.
- 17.10** If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences of ITT 17.8 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

## **18.0 Period of Validity of Tenders**

- 18.1.** Tenders shall remain valid for the Tender Validity period specified in the **TDS**. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 22). A tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.
- 18.2** In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the response shall be made in writing. If a Tender Security is requested in accordance with ITT 19, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting the request shall not be required or permitted to modify its Tender.

## **19.0 Tender Security**

- 19.1** The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the **TDS**, in original form and, in the case of a Tender Security, in the amount and currency specified in the **TDS**. A Tender-Securing Declaration shall use the form included in Section IV, Tender Forms.
- 19.2** If a Tender Security is specified pursuant to ITT 19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:
- i) cash;
  - ii) a bank guarantee;
  - iii) a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority;
  - (iv) a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya, from a reputable source, and an eligible country.
- 19.3** If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 18.2.



- 194** 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.
- 195** If a Tender Security is specified pursuant to ITT 19.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the TDS. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non-responsive or a bidder declines to extend tender validity period.
- 196** 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.
- 197** The Tender Security may be forfeited or the Tender-Securing Declaration executed:
- a) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension there to provided by the Tenderer; or
  - b) if the successful Tenderer fails to:
    - i) sign the Contract in accordance with ITT47; or
    - ii) furnish a Performance Security and if required in the TDS, and any other documents required in the TDS.
- 198** Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA to debar the Tenderer from participating in public procurement as provided in the law.
- 199** 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.
- 1910** A tenderer shall not issue a tender security to guarantee itself.
- 200** **Format and Signing of Tender**
- 201** The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 11 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 13, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **TDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.
- 202** 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.
- 203** 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.
- 204** In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.
- 205** 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**

### **210 Sealing and Marking of Tenders**

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

- a) in an envelope or package or container marked “ORIGINAL”, all documents comprising the Tender, as described in ITT 11; and
- b) in an envelope or package or container marked “COPIES”, all required copies of the Tender; and
- c) if alternative Tenders are permitted in accordance with ITT 13, and if relevant:
  - i) in an envelope or package or container marked “ORIGINAL –ALTERNATIVE TENDER”, the alternative Tender; and
  - ii) in the envelope or package or container marked “COPIES- ALTERNATIVE TENDER”, all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

- a) bear the name and address of the Procuring Entity,
- b) bear the name and address of the Tenderer; and
- c) bear the name and Reference number of the Tender.

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

### **220 Deadline for Submission of Tenders**

**221** 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**.

**222** The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

### **23.0 Late Tenders**

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

### **240 Withdrawal, Substitution, and Modification of Tenders**

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

- a) prepared and submitted in accordance with ITT 20 and ITT 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION;” and
- b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 22.

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

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

## **25. Tender Opening**

- 251** Except in the cases specified in ITT 23 and ITT 24.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified **in the TDS**, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 22.1, shall be as specified in the **TDS**.
- 252 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.
- 253 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.
- 254 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.
- 255 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.
- 256 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bill of Quantities (to be decided on by the tender opening committee) are to be initialed by the members of the tender opening committee attending the opening.
- 257 At the Tender Opening, the Procuring Entity's shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 23.1).
- 258 The Procuring Entity shall prepare minutes of the Tender Opening that shall include, as a minimum: -
- a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification;
  - b) the Tender Price, per lot (contract) if applicable, including any discounts;
  - c) any alternative Tenders;
  - d) the presence or absence of a Tender Security, if new as required;
  - e) number of pages of each tender document submitted.
- 259 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening register shall be distributed to all Tenderers.

## **E. EVALUATION AND COMPARISON OF TENDERS**

### **26. Confidentiality**

- 261 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 43.
- 262 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.
- 263 Notwithstanding ITT 26.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any matter related to the tendering process, it shall do so in writing.



## **270 Clarification of Tenders**

- 271** To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 31.
- 272** 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.

## **280 Deviations, Reservations, and Omissions**

- 281** 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.

## **290 Determination of Responsiveness**

- 291** The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 11.
- 292** A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, if accepted, would:
- a) Affect in any substantial way the scope, quality, or performance of the Works specified in the Contract;
  - b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the tenderer's obligations under the proposed contract;
  - c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.
- 293** The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 16, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation or omission.
- 294** 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.

## **300 Non-material Non-conformities**

- 301** Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.
- 302** Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities in the tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.
- 303** Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable non-material non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified in the TDS.

### **31.0 Arithmetical Errors**

- 31.1** The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity.
- 31.2** Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis: -
- a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.
  - b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and
  - c) if there is a discrepancy between words and figures, the amount in words shall prevail
- 31.3** Tenderers shall be notified of any error detected in their bid during the notification of award.

### **32.0 Conversion to Single Currency**

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

### **33.0 Margin of Preference and Reservations**

- 33.1** A margin of preference may be allowed only when the contract is open to international competitive tendering where foreign contractors are expected to participate in the tendering process and where the contract exceeds the value/threshold specified in the Regulations.
- 33.2** A margin of preference shall not be allowed unless it is specified so in the **TDS**.
- 33.3** Contracts procured on basis of international competitive tendering shall not be subject to reservations exclusive to specific groups as provided in ITT 33.4.
- 33.4** Where it is intended to reserve a contract to a specific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses or firms belonging to the specified group are eligible to tender. No tender shall be reserved to more than one group. If not so stated in the Invitation to Tender and in the Tender documents, the invitation to tender will be open to all interested tenderers.

### **34.0 Nominated Subcontractors**

- 34.1** Unless otherwise stated in the **TDS**, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected/nominated by the Procuring Entity. In case the Procuring Entity nominates a subcontractor, the subcontract agreement shall be signed by the Subcontractor and the Procuring Entity. The main contract shall specify the working arrangements between the main contractor and the nominated subcontractor.
- 34.2** Tenderers may propose sub-contracting up to the percentage of total value of contracts or the volume of works as specified in the **TDS**. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.
- 34.3** Domestic subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated so by the Procuring Entity in the **TDS** a scan be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

### **35. Evaluation of Tenders**

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

- 352 To evaluate a Tender, the Procuring Entity shall consider the following:
- a) Price adjustment in accordance with ITT 31.1 (iii); excluding provisional sums and contingencies, if any, but including Daywork items, where priced competitively;
  - b) price adjustment due to discounts offered in accordance with ITT 14.4;
  - c) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 32;
  - d) price adjustment due to quantifiable non-material non-conformities in accordance with ITT 30.3; and
  - e) any additional evaluation factors specified in the **TDS** and Section III, Evaluation and Qualification Criteria.
- 353 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.
- 354 Where the tender involves multiple lots or contracts, the tenderer will be allowed to tender for one or more lots (contracts). Each lot or contract will be evaluated in accordance with ITT 35.2. The methodology to determine the lowest evaluated tenderer or tenderers base done lot (contract) or based on a combination of lots (contracts), will be specified in Section III, Evaluation and Qualification Criteria. In the case of multiple lots or contracts, tenderer will be will be required to prepare the Eligibility and Qualification Criteria Form for each Lot.

### **36.0 Comparison of tenders**

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

### **37.0 Abnormally low tenders and abnormally high tenders**

#### **Abnormally Low Tenders**

- 371 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.
- 372 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.
- 373 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

#### **Abnormally high tenders**

- 374 An abnormally high tender price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.
- 375 In case of a abnormally high price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:
- i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.
  - ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

**376** 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.

#### **380 Unbalanced and/ or front-loaded tenders**

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

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

- a) accept the Tender;
- b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 30% of the Contract Price;
- c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works;
- d) reject the Tender,

#### **390 Qualifications of the tenderer**

**391** 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.

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

**393** 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.

#### **400 Lowest evaluated tender**

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

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

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

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

### **F. AWARD OF CONTRACT**

#### **42.0 Award criteria**

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

#### **430 Notice of Intention to Enter into a Contract/Notification of Award**

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

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

#### **440 Stand still Period**

**441** 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.

**442** 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.

#### **450 Debriefing by The Procuring Entity**

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

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

#### **46.0 Letter of Award**

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

#### **470 Signing of Contract**

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

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

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

#### **480 Performance Security**

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



**482** 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.

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

#### **490 Publication of Procurement Contract**

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

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

#### **50.0 Procurement related Complaint**

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

<b>Section II - Tender Data Sheet (TDS)</b>	
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.	
<b>A. General</b>	
<b>ITT1.1</b>	<p>The name of the contract is: <b>STRUCTURED CABLING, IP-PABX, CCTV AND ACCESS CONTROL SUB-CONTRACT FOR THE PROPOSED LIBRARY KARATINA UNIVERSITY.</b></p> <p>The reference number of the contract is: <b>SEE COVER PAGE AND INVITATION TO TENDER</b></p>
<b>ITT2.3</b>	The information made available on competing firms is as follows: <b>NOT APPLICABLE</b>
<b>ITT2.4</b>	The firms that provided consulting services for the contract being tendered for are: <b>JKUATES LTD</b>
<b>ITT3.1</b>	Maximum number of members in the Joint Venture (JV) shall be: <b>2 (TWO)</b>

B. Contents of Tender Document	
ITT 7.1	<p>(i) The Tenderer will submit any request for clarifications in writing at the Address <b>procurement@karu.ac.ke, or P.O. Box 1957-10101 Karatina, or Hand delivered to the Procurement Department, Main Campus, Kagochi, Karatina</b></p> <p>To reach the Procuring Entity not later than: <b>5 days before tender opening</b></p> <p>(ii) The Procuring Entity shall publish its response at the website: <b>www.karu.ac.ke/www.tenders.go.ke</b></p>
ITT 7.2	<p>(A) A pre-arranged pretender site visit <b>shall not</b> take place at the following date, time and place: Date: <u>    N/A    </u> Time: <u>                    </u> Place: <u>                    </u></p> <p>(B) Pre-Tender meeting <b>shall not</b> take place at the following date, time and place: Date: <u>    N/A    </u> Time: <u>                    </u> Place: <u>                    </u></p>
ITT 7.3	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than <b>N/A</b> before the meeting.
ITT 7.5	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender will be published is: <b>www.karu.ac.ke</b>
ITT 9.1	<p>For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is:</p> <p>(1) Name of Procuring Entity: <b>Karatina University</b></p> <p>(2) Physical address for hand Courier Delivery to an office or Tender Box (City, Street, Building, Floor Number and Room): <b>Procurement Department, Main Campus, Kagochi, Karatina</b></p> <p>(3) Postal Address: <b>P.O. BOX 1957-10101 Karatina</b></p> <p>(4) Insert name, telephone number and e-mail address of the officer to be contacted: <b>Head of Procurement Karatina University, Tel: 0729721200, Email: procurement@karu.ac.ke</b></p>
C. Preparation of Tenders	
ITT 11.1 (h)	The Tenderer shall submit the following additional documents in its Tender: <i>[list any additional document not already listed in ITT 11.1 that must be submitted with the Tender. The list of additional documents should include the following: All other documents required under "Evaluation and pre-qualification criteria" section]</i>
ITT 13.1	Alternative Tenders <b>shall not be</b> considered.
ITT 13.2	Alternative times for completion <b>shall not be</b> permitted.
ITT 13.4	Alternative technical solutions <b>shall not</b> be permitted.
ITT 14.5	The prices quoted by the Tenderer shall be: <b>fixed</b>

ITT 15.2 (a)	Foreign currency requirements are <i>not allowed</i> .
ITT 18.1	The Tender validity period shall be ____ <i>120</i> days.
ITT 18.3	N/A
ITT 19.1	Tender shall provide a <b>Tender</b> Security. The type of Tender security shall be a <i>Bond</i> in the amount of Kenya shillings <i>150,000.00 as described in ITT</i> .
ITT 20.1	In addition to the original of the Tender, the number of copies is: <i>1 copy of the original</i>
ITT 20.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: <i>Power of attorney</i>
<b>D. Submission and Opening of Tenders</b>	
ITT 22.1	<p>(A) For <u>Tender submission purposes</u> only, the Procuring Entity's address is:</p> <p style="text-align: center;"><b>VICE CHANCELLOR, KARATINA UNIVERSITY, P.O. BOX 1957-10101 KARATINA.</b></p> <p>Bid document to be deposited in the Tender Box located at the Administration Block at the Main Campus Kagochi - Karatina.</p> <p>Bulky tenders to be delivered to the Procurement Office at Main campus Kagochi Karatina for registration.</p> <p>(1) Date and time for submission of Tenders: <i>1<sup>st</sup> September, 2021 at 12.00 noon EAT</i></p> <p>(2) Tenders <i>shall not submit</i> tenders electronically.</p>
ITT 25.1	<p>The Tender opening shall take place at the time and the address for Opening of Tenders Provided below:</p> <hr/> <hr/> <p style="text-align: center;"><b>KARATINA UNIVERSITY CONFERENCE HALL, MAIN CAMPUS, KAGOCI, KARATINA</b></p> <p>DATE AND TIME AS PER ITT 22.1 ABOVE</p>



ITT 33.2	A margin of preference <i>shall not</i> _____ apply.
ITT 33.4	The invitation to tender is extended to the following group that qualify for Reservations _____ _____ N/A
ITT 34.1	At this time, the Procuring Entity _____ <i>does not intend</i> to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 34.2	Contractor's may propose subcontracting: Maximum percentage of subcontracting permitted is: <b>10% of the total contract amount.</b> Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.
ITT 34.3	N/A
ITT 35.2 (d)	Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.
ITT 48.1	Other documents required in addition to the Performance Security are N/A
ITT 50.1	<p>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 <a href="http://www.ppra.go.ke">www.ppra.go.ke</a> or email <a href="mailto:complaints@ppra.go.ke">complaints@ppra.go.ke</a>.</p> <p>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:</p> <p>For the attention: <b><i>The Vice Chancellor</i></b></p> <p>Title/position: <b><i>Accounting Officer</i></b></p> <p>Procuring Entity: <b><i>Karatina University</i></b></p> <p>Email address: <b><i>vc@karu.ac.ke</i></b></p> <p>In summary, a Procurement-related Complaint may challenge any of the following (among others):</p> <ul style="list-style-type: none"> <li>(i) the terms of the Tender Documents; and</li> <li>(ii) the Procuring Entity's decision to award the contract.</li> </ul>

## **SECTION III - EVALUATION AND QUALIFICATION CRITERIA**

### **10 GENERAL PROVISIONS**

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

**12** 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.

### **13 EVALUATION AND CONTRACT AWARD CRITERIA**

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

### **2.0 PRELIMINARY EXAMINATION FOR DETERMINATION OF**

#### **RESPONSIVENESS Preliminary examination for Determination of Responsiveness**

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

**Preliminary evaluation (Mandatory requirements)**

To be deemed as responsive, tenders shall be checked for the following mandatory requirements:

Item	Description	Remark (×/√)
1	Dully filled forms (Original): a) Form of tender, b) Confidential business questionnaire, c) Certificate of independent tender determination, d) Self-declaration forms SD1 and SD2 and e) Declaration and commitment to the code of ethics	
2	Bid security (Tender bond) of Kshs. One Hundred and Fifty Thousand ( <b>Kshs 150,000.00</b> ) ( <b>Original</b> ) Valid for <b>150 days</b> (days to start from tender closing date)	
3	Company certificate of registration or incorporation ( <b>Provide Copy</b> )	
4	Current registration certificate and annual practicing license with National Construction Authority (NCA) as a contractor in Structured Cabling and Computer Networking Installations, Security Surveillance (CCTV) and Access Control Systems - <b>Category 4, 3, 2 or 1. (Provide copies of Current NCA registration and practicing license)</b>	
5	Valid Communication Authority of Kenya (CAK) compliance certificate and annual license as a telecommunication contractor ( <b>Provide Copy</b> )	
6	Dully filled and signed Statement of Compliance ( <b>Original</b> )	
7	Power of attorney where the signatory is not a director ( <b>Copy</b> )	
8	Current form CR12 (for companies) and identity documents (National ID's or Passports) for the directors/proprietor ( <b>Copy</b> )	
9	Manufacturers authorization form/letter for CCTV cameras; IP-PABX; Telephone Instruments; Data Switches; Patch Panels; Data Cabinets; Cables and Cabling Accessories and UPS being offered by the bidder ( <b>Copy</b> )	
10	Type approval from CAK for the IP PABX and telephone instruments being offered by the bidder.	
11	Submission of Manufacturer's ISO 9001 for the CCTV equipment/components being offered by the bidder	
12	All the pages in the tender document including all attachments must be serialized in the format of page of last page <b>i.e 22 of 250</b> the document should also be book bound.	
	<b>CONCLUSIVE REMARK ( RESPONSIVE OR NON RESPONSIVE)</b>	

**30 TENDER EVALUATION (ITT 35): NB – NOT APPLICABLE**

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

- (i) Alternative Completion Times, if permitted under ITT13.2, will be evaluated as follows:  
.....
- (ii) Alternative Technical Solutions for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows:.....
- (iii) Other Criteria; if permitted under ITT 35.2(j):  
.....

#### **40 MULTIPLE CONTRACTS: NB – NOT APPLICABLE**

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

#### **OPTION 1**

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

#### **OPTION2**

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

#### **5.0 ALTERNATIVE TENDERS (ITT 13.1): NB NOT APPLICABLE**

##### **Alternative Tenders (ITT 13.1)**

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

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

#### **60 MARGIN OF PREFERENCE: NB NOT APPLICABLE**

- 61** If the TDS so specifies, the Procuring Entity will grant a margin of preference of fifteen percent (15%) to be loaded on evaluated prices of the foreign tenderers, where the percentage of shareholding of Kenyan citizens is less than fifty- one percent (51%).
- 62** Contractors shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractors qualifies for a margin of preference.
- 63** After Tenders have been received and reviewed by the Procuring Entity, responsive Tenders shall be assessed to ascertain their percentage of shareholding of Kenyan citizens. Responsive tenders shall be classified into the following groups:
- i) *Group A:* tenders offered by Kenyan Contractors and other Tenderers where Kenyan citizens hold shares of over fifty one percent (51%).
  - ii) *Group B:* tenders offered by foreign Contractors and other Tenderers where Kenyan citizens hold shares of less than fifty one percent (51%).
- 64** All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award of contract. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 6.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group B. All tenders shall then be compared using new prices with added prices to Group B and the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected for award. If not, the lowest evaluated tender from Group

B based on the first evaluation price shall be selected.

**7. Post qualification and Contract award (ITT 39), more specifically: REFER TO QUALIFICATION TABLE IN THE NEXT PAGE**

- 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 \_\_\_\_\_
  - ii) Minimum average annual construction turnover of Kenya Shillings \_\_\_\_\_ *[insert amount]*, equivalent calculated as total certified payments received for contracts in progress and/or completed within *[insert of year]* years.
  - iii) At least \_\_\_\_\_ *(insert number)* of contract(s) of a similar nature executed within Kenya, or the East African Community or a broad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings \_\_\_\_\_ equivalent.
  - iv) Contractor's Representative and Key Personnel, which are specified as \_\_\_\_\_
  - v) Contractors key equipment listed on the table "Contractor's Equipment" below and more specifically listed as *[specify requirements for each lot as applicable]* \_\_\_\_\_
  - iv) Other conditions depending on their seriousness.

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

Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last \_\_\_\_\_ *(specify years)*. The required information shall be furnished in the appropriate form.

**b) Pending Litigation**

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

**c) Litigation History**

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

Tenders that pass the preliminary evaluation shall be subjected to the following table of technical evaluation. Tenderers are required to provide the required information using the forms provided and attach documents required to proof that they meet the qualification requirements.

**QUALIFICATION FORM\***

1	2	3	4	5
Item No.	Qualification Subject	Qualification Requirement	Document To be Completed by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI - 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by Kenya Revenue Authority in accordance with ITT 3.14.	Attachment	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.7	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.8	Forms ELI - 1.1 and 1.2, with attachments	
6	Goods, equipment and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI - 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since <b>1<sup>st</sup> January 2016</b>	Form CON-2	
8	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON-2	

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)
10	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1 <sup>st</sup> January <i>[insert year]</i> .  <b>Year 2016</b>	Form CON - 2	
11	Financial Capabilities	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as Kenya Shillings <b>[50% of tender sum]</b> equivalent for the subject contract(s) net of the Tenderer's other commitments.  (ii) The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.  (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 <b>[last Three years certified and complete Audited accounts i.e 2018,2019 and 2020]</b> years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability ( <b>should have made profits in at least two years requested above</b> )	Form FIN - 3.1, with attachments	
12	Average Annual Construction Turnover	Minimum average annual construction turnover of Kenya Shillings <b>[50% of tender sum]</b> , equivalent calculated as total certified payments received for contracts in progress and/or completed within the last <b>[three]</b> years, divided by <b>[three]</b> years	Form FIN - 3.2 and attachments <b>(Attach payment certificates)</b>	
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 <b>[three]</b> years starting 1 <sup>st</sup> January <b>[2018]</b> .	<b>4. Form EXP - 4.1 Experience</b>	



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)
14	Specific Construction & Contract Management Experience	A minimum number of <b>[Three]</b> 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 <b>[2016]</b> and tender submission deadline i.e. .. <b>Three</b> .. (Number) contracts, each of minimum value Kenya shillings..... <b>50% of tender sum</b> ..... equivalent.  The similarity of the contracts shall be based on the following: <b>[Type of work and value]</b>	Form EXP 4.2(a) and attachments <b>Attach completion certificates.</b>	
15	Contractor's equipment	Contractor to demonstrate equipment capability. ( <b>Minimum 1 number vehicle</b> )	<b>FORM EQU with ownership/lease documents attachments</b>	
16	Contractors personnel	Contractor to demonstrate availability of qualified personnel for the works  <b>(Minimum 1 number Project Manager/Supervisor) with minimum of a diploma in the relevant engineering field and</b>  <b>Minimum 2 number artisans with minimum of a trade test certificate in the relevant engineering field)</b>	<b>FORMS PER 1 AND PER 2 with certificates attached</b>	

Only tenders that meet all the qualification requirements above and comply with the Section VI (Particular specification) shall proceed to the next stage (determination of the lowest evaluated bidder) in accordance with ITT 36-40



## SECTION IV - TENDERING FORMS

### QUALIFICATION FORMS

#### 1. FOREIGN TENDERERS 40%RULE

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

ITEM	Description of Work Item	Describe location of Source	COST in K. shillings	Comments, if any
A	Local Labor			
1				
2				
3				
4				
5				
B	Sub contracts from Local sources			
1				
2				
3				
4				
5				
C				
1				
2				
3				
4				
5				
D				
1				
2				
3				
4				
5				
E				
1				
2				
3				
4				
5				
6				
	TOTAL COST LOCAL CONTENT		XXXXX	
	PERCENTAGE OF CONTRACT PRICE			

## 2. **FORM EQU: EQUIPMENT**

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

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

### 3. **FORM PER -1**

#### **Contractor's Representative and Key Personnel Schedule**

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

#### **Contractor' Representative and Key Personnel**

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

#### 4. **FORM PER - 2:**

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

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

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

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

#### **Declaration**

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

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

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

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

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

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

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

Counter signature of authorized representative of the Tenderer:

Signature: \_\_\_\_\_

Date: (day month year): \_\_\_\_\_

## 5. TENDERERS 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.

### 51 FORM ELI -1.1

#### Tenderer Information Form

Date: \_\_\_\_\_

ITT No. and title: \_\_\_\_\_

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: <i>[indicate country of Constitution]</i>
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of <input type="checkbox"/> 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 <input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5 <input type="checkbox"/> In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing: <ul style="list-style-type: none"><li>• Legal and financial autonomy</li><li>• Operation under commercial law</li><li>• Establishing that the Tenderer is not under the supervision of the Procuring Entity</li></ul> 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

## 52 FORM ELI -1.2

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

Date:\_\_\_\_\_

ITT No. and title:\_\_\_\_\_

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mailaddress: _____
1. Attached are copies of original documents of <input type="checkbox"/> 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. <input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.5.  2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

## 53 FORM CON –2

### Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: \_\_\_\_\_ Date: \_\_\_\_\_

JV Member's Name \_\_\_\_\_ ITT No. and title: \_\_\_\_\_

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> Contract non-performance did not occur since 1 <sup>st</sup> January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.			
<input type="checkbox"/> Contract(s) not performed since 1 <sup>st</sup> January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
<input type="checkbox"/> Contract(s) withdrawn since 1 <sup>st</sup> January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert street/city/country]</i> Reason(s) for nonperformance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.			
<input type="checkbox"/> 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			
<input type="checkbox"/> No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. <input type="checkbox"/> Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			
Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: <i>[indicate complete contract name, number, and any other identification]</i> Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Procuring Entity" or "Contractor"]</i> Reason(s) for Litigation and award decision <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>

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

## 5.4 Form FIN – 3.1

### Financial Situation and Performance

Tenderer's Name: \_\_\_\_\_

Date: \_\_\_\_\_

JV Member's Name \_\_\_\_\_

ITT No. and title: \_\_\_\_\_

#### 5.4.1. Financial Data

Type of Financial information in _____ (currency)	Historic information for previous _____ years, _____ (amount in currency, currency, exchange rate*, USD equivalent)				
	Year1	Year2	Year 3	Year4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*\*Refer to ITT 15 for the exchange rate*

## 542 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		

## 543 Financial documents

The Tenderer and its parties shall provide copies of financial statements for **3 previous** years pursuant Section III, Evaluation and Qualifications Criteria. The financial statements shall:

- Reflect the financial situation of the Tenderer or incase of JV member, and not an affiliated entity (such as parent company or group member).
- Be independently audited or certified in accordance with local legislation.
- Be complete, including all notes to the financial statements.
- Correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements<sup>1</sup> for the \_\_\_\_\_ years required above; and complying with the requirements.

---

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

## 5.5 FORM FIN 3.2

### Average Annual Construction Turnover

Tenderer's Name: \_\_\_\_\_

Date: \_\_\_\_\_

JV Member's Name \_\_\_\_\_

ITT No. and title: \_\_\_\_\_

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

\* See Section III, Evaluation and Qualification Criteria

## 5.6 FORMFIN-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 contractor contracts as specified in Section III, Evaluation and Qualification Criteria.

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

## 57 FORMFIN-3.4:

### Current Contract Commitments / Works in Progress

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

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

## 58 FORM EXP -4.1

### General Construction Experience

Tenderer's Name: \_\_\_\_\_ Date: \_\_\_\_\_

JV Member's Name \_\_\_\_\_ ITT No. and title: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_ pages

<b>Starting Year</b>	<b>Ending Year</b>	<b>Contract Identification</b>	<b>Role of Tenderer</b>
		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: _____	

## 59 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 <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
Total Contract Amount			<b>Kenya Shilling</b>	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				
Description of similarity				
1 Amount				
2 Physical size of required works items				
3 Complexity				
4 Methods/Technology				
5 Construction rate for key activities				
6 Other Characteristics				



## 5.10 FORM EXP - 4.2 (b)

### Construction Experience in Key Activities

Tenderer's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Tenderer's JV Member Name: \_\_\_\_\_

Sub-contractor's Name<sup>2</sup> (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

#### 1. Key Activity No One:

Information				
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
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:				
Description of key activities				

<sup>2</sup>If applicable

## **OTHER FORMS**

### **6. FORM OF TENDER**

#### *INSTRUCTIONS TO TENDERERS*

- i) *The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.*
- ii) *All italicized text is to help Tenderer in preparing this form.*
- iii) *Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER attached to this Form of Tender.*
- iv) *The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.*
  - *Tenderer's Eligibility- Confidential Business Questionnaire*
  - *Certificate of Independent Tender Determination*
  - *Self-Declaration of the Tenderer*

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

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

Dear Sirs,

1. In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above-named Works, we, the undersigned offer to construct and complete the Works and remedy any defects there in for the sum<sup>3</sup> of Kenya Shillings *[[Amount in figures]*\_\_\_\_\_ Kenya Shillings *[amount in words]*\_\_\_\_\_
2. We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Architect notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Special Conditions of Contract.
3. We agree to adhere by this tender until \_\_\_\_\_ *[Insert date at least 120days from opening date]*, and it shall remain binding upon us and may be accepted at any time before that date.
4. We understand that you are not bound to accept the lowest or any tender you may receive.
5. We, the under signed, further declare that:
  - i) No reservations: We have examined and have no reservations to the tender document, including Addenda 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
- Option2, in case of multiple lots:
- (a) Total price of each lot *[insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies]*; and
- (b) Total price of all lots (sum of all lots) *[insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies]*;
- vii) Discounts: The discounts offered and the methodology for their application are:
- viii) The discounts offered are: *[Specify in detail each discount offered.]*
- ix) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts]*;
- x) Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- xi) Performance Security: If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;
- xii) One Tender Per Tender: 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 sub-contractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 13.3;
- xiii) Suspension and Debarment: We, along with any of our subcontractors, suppliers, Engineer, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.
- xiv) State-owned enterprise or institution: *[select the appropriate option and delete the other]* *[We are not a state- owned enterprise or institution]/[We are a state-owned enterprise or institution but meet the requirements of ITT3.8]*;
- xv) Commissions, gratuities, fees: We have paid, or will pay the following commissions, gratuities, or fees with respect to the tender process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

Name of Recipient	Address	Reason	Amount

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

<sup>3</sup>This sum should be carried forward from the Summary of the Bills of Quantities.

- xvi) **Binding Contract:** We understand that this Tender, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- xvii) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;
- xviii) **Fraud and Corruption:** We here by certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption; and
- xix) **Collusive practices:** We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the “Certificate of Independent Tender Determination” attached below.
- xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from \_\_\_\_\_ (*specify website*) during the procurement process and the execution of any resulting contract.
- xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:
  - a) Tenderer's Eligibility; Confidential Business Questionnaire - to establish we are not in any conflict of interest.
  - (b) Certificate of Independent Tender Determination - to declare that we completed the tender without colluding with other tenderers.
  - (a) Self-Declaration of the Tenderer - to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
  - (d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal.

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

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

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

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

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

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

Date signed \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Notes

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

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

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

**Instruction to Tenderer**

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

**(a) Tenderer's details**

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

## **General and Specific Details**

**(b) Sole Proprietor**, provide the following details.

Name in full \_\_\_\_\_ Age \_\_\_\_\_  
Nationality \_\_\_\_\_ Country of Origin \_\_\_\_\_  
Citizenship \_\_\_\_\_

**(c) Partnership**, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

**(d) Registered Company**, provide the following details.

- i) Private or public Company \_\_\_\_\_  
ii) State the nominal and issued capital of the Company \_\_\_\_\_

Nominal Kenya Shillings (Equivalent).....

Issued Kenya Shillings (Equivalent).....

- iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

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

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

If yes, provide details as follows.

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



(ii) **Conflict of interest disclosure**

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

## Certification

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

Full Name \_\_\_\_\_

Title or Designation \_\_\_\_\_

\_\_\_\_\_

*(Signature)*

\_\_\_\_\_

*(Date)*

**b) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION**

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

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

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

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Date \_\_\_\_\_

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

(c) **SELF- DECLARATION FORMS**

**FORM SD1**

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

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

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

.....  
(Title)

.....  
(Signature)

.....  
(Date)

Bidder Official Stamp

## FORM SD2

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

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

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of .....  
(insert name of the Company) who is a Bidder in respect of **Tender No.**..... for  
..... (*insert tender title/description*) for ..... (*insert name of the Procuring entity*) and  
duly authorized and competent to make this statement.
2. THAT the afore said Bidder, its servants and/or agents/subcontractors will not engage in any corrupt or fraudulent  
practice and has not been requested to pay any inducement to any member of the Board, Management, Staff  
and/or employees and/or agents of ..... (*insert name of the Procuring entity*) which is the  
procuring entity.
3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any  
member of the Board, Management, Staff and/or employees and/or agents of ..... (*name of the  
procuring entity*).
4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders  
participating in the subject tender
5. THAT what is deponed to here in above is true to the best of my knowledge information and belief.

.....  
(Title)

.....  
(Signature)

.....  
(Date)

Bidder's Official Stamp

## DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

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

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

Name of Authorized signatory.....

Sign.....

Position.....

Office address..... Telephone.....

E-mail.....

Name of the Firm/Company.....

Date.....

**(Company Seal/ Rubber Stamp where applicable)**

Witness

Name.....

Sign.....

Date.....

**(d) APPENDIX 1 - FRAUD AND CORRUPTION**

*(Appendix 1 shall not be modified)*

**1. Purpose**

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

**2. Requirements**

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

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

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

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



- a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:
- i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
  - ii) “fraudulent practice” is any act or omission, including is representation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
  - iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party; “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
  - iv) “obstructive practice” is:
    - Deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
    - acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.
- b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:
- "fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.
- c) Rejects a proposal for award<sup>1</sup> of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
  - d) Pursuant to the Kenya's above stated Acts and Regulations, may recommend to appropriate authority(ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;
  - e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring(i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect<sup>2</sup> 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.

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

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

## 2. FORM OF TENDER SECURITY-DEMAND BANK GUARANTEE

**Beneficiary:** \_\_\_\_\_

**Request for Tenders No:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**TENDER GUARANTEE No.:** \_\_\_\_\_

**Guarantor:** \_\_\_\_\_

1. We have been informed that \_\_\_\_\_ (here in after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here in after called "the Tender") for the execution of \_\_\_\_\_ under Request for Tenders No. \_\_\_\_\_ ("the ITT").
2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.
3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of \_\_\_\_\_ (\_\_\_\_\_) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:
  - (a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or
  - b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.
4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.
5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

\_\_\_\_\_  
[signature(s)]

#### 4. 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 Purchaser]*, as Surety (hereinafter called “the Surety”), are held and firmly bound unto *[name of Purchaser]* as Obligee (hereinafter called “the Purchaser”) in the sum of *[amount of Bond]**[amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and as signs, jointly and severally, firmly by these presents.
2. WHERE AS the Principal has submitted or will submit a written Tender to the Purchaser dated the \_\_\_\_\_ day of \_\_\_\_\_, 20, for the supply of *[name of Contract]* (herein after called the “Tender”).
3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:
  - a) Has 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 there to provided by the Principal; or
  - b) Having been notified of the acceptance of its Tender by the Purchaser during the Tender Validity Period or any extension there to provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers (“ITT”) of the Purchaser's Tendering document.then the Surety undertakes to immediately pay to the Purchaser up to the above amount upon receipt of the Purchaser's first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser shall state that the demand arises from the occurrence of any of the above events, specifying which event (s) has occurred.
4. The Surety here by agrees that its obligation will remain in full force and effect upto and including the date 30 days after the date of expiration of the Tender Validity Period set forth in the Principal's Letter of Tender or any extension thereto provided by the Principal.
5. IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this day of \_\_\_\_\_ 20.

Principal: \_\_\_\_\_  
Corporate Seal (*where appropriate*)

Surety: \_\_\_\_\_

\_\_\_\_\_  
(Signature)  
(Printed name and title)

\_\_\_\_\_  
(Signature)  
(Printed name and title)

#### 4. FORM OF TENDER - SECURING DECLARATION

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

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

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

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

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.
2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of 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

## 5. Appendix to Tender

### Schedule of Currency requirements (Not applicable)

Summary of currencies of the Tender for \_\_\_\_\_ [insert name of Section of the Works]

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

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## **PART II - THE CONDITIONS OF CONTRACT AND CONTRACT**

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## CONDITIONS OF SUB-CONTRACT AND APPENDIX

The successful tenderer shall be required to enter in a sub- contract agreement with the main contractor under the terms of the standard Kenya Association of Building and Civil Engineering Contractors (KABCEC) conditions of sub-contract which shall be amended and completed as follows:

Clause 28: Fluctuations; Sub-clause 28.2-28.4 shall be omitted. The contract shall be a fixed price contract.

The appendix shall be completed as follows:

### APPENDIX

### Clause

Name of sub-contractor's insurers	6.0..... <b>To be approved</b>
Name of sub-contractor's surety	7.0..... <b>To be approved</b>
Amount of surety	7.0: .... <b>10% of contract sum</b>
Period of possession of site	8.1..... <b>To be agreed</b>
Date of commencement of works	8.2..... <b>To be agreed</b>
Date for practical completion	8.2..... <b>To be calculated based on above</b>
Interval for application of payment certificates	23.1..... <b>1 month</b>
Minimum amount of payment certificate	23.4..... <b>Kshs. 500,000.00</b>
Percentage of certified value retained	23.6..... <b>10%</b>
Limit of retention fund, if any	23.6..... <b>5%</b>
Name of the bank for purposes of interest calculation.	23.7, 23.8..... <b>As per main contract</b>
Defects liability period	23.11..... <b>12 Months</b>
Period of final measurement and valuation	23.12..... <b>12 Months</b>
Damages of delay in completion	27.1 at the rate of Kshs..... <b>.. As per Main contract</b>



**SECTION V - CONTRACT FORMS (TENDERERS SHOULD NOTE THAT THE FORMS UNDER THIS SECTION ARE FOR YOUR INFORMATION ONLY AND SHOULD NOT BE FILLED AS PART OF THE BID)**

FORM No. 1 - NOTIFICATION OF INTENTION TO AWARD

FORM No. 2 - NOTIFICATION OF AWARD - LETTER OF ACCEPTANCE

FORM No. 3- PERFORMANCE SECURITY [Performance Bond]

## **FORM No 1: NOTIFICATION OF INTENTION TO AWARD OF CONTRACT**

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

### **FORMAT**

1. For the attention of Tenderer's Authorized Representative

- i) Name: *[insert Authorized Representative's name]*
- ii) Address: *[insert Authorized Representative's Address]*
- iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*
- iv) Email Address: *[insert Authorized Representative's email address]*

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

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

This Notification is sent by *(Name and designation)* \_\_\_\_\_

3. Notification of Award

- i) Procuring Entity: *[insert the name of the Procuring Entity]*
- ii) Project: *[insert name of project]*
- iii) Contract title: *[insert the name of the contract]*
- iv) ITT No: *[insert ITT reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender by submitting a Procurement-related Complaint in relation to the decision to award the contracts.

a) The successful tenderers

i) Name of successful Tender \_\_\_\_\_

ii) Address of the successful Tender \_\_\_\_\_

iii) Contract price of the successful Tender Kenya Shillings \_\_\_\_\_  
(in words \_\_\_\_\_)

b) The reasons for your tender being unsuccessful are as follows:

c) Other Tenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why Not Evaluated
1				
2				
3				
4				
5				

(Note a) State NE if not evaluated

#### 5. How to request a debriefing

- a) DEADLINE: The dead line to request a debriefing expires at midnight on *[insert date]* (local time).
- b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (5) Business Days of receipt of this Notification of Intention to Award.
- c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
  - i) Attention: *[insert full name of person, if applicable]*
  - ii) Title/position: *[insert title/position]*
  - iii) Agency: *[insert name of Procuring Entity]*
  - iv) Email address: *[insert email address]*
- d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.
- e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.
- f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

#### 6. How to make a complaint?

- a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, *[insert date]* (local time).
- b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:
  - i) Attention: *[insert full name of person, if applicable]*
  - ii) Title/position: *[insert title/ position]*
  - iii) Agency: *[insert name of Procuring Entity]*
  - iv) Email address: *[insert email address]*
- c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.
- d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website [www.ppra.go.ke](http://www.ppra.go.ke).

You should read these documents before preparing and submitting your complaint.

- e) There are four essential requirements:
  - i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process and is the recipient of a Notification of Intention to Award.
  - ii) The complaint can only challenge the decision to award the contract.
  - iii) You must submit the complaint within the period stated above.
  - iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

- i) DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
- ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
- iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

**Signature:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Title/position:** \_\_\_\_\_

\_\_\_\_\_

**Telephone:** \_\_\_\_\_

\_\_\_\_\_

## **FORM NO 2: LETTER OF AWARD**

*[letterhead paper of the Procuring Entity]*

*[date]*

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words]* *[name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is here by accepted by..... *(name of Procuring Entity)*.

You are requested to furnish the Performance Security within in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Procuring Entity: .....

Attachment: *Contract Agreement*: .....

## **FORM No. 3- PERFORMANCE SECURITY**

### **[Performance Bond]**

*[Guarantor letterhead or SWIFT identifier code]*

**Beneficiary:** *[insert name and Address of Procuring*

Entity] **Date:** \_\_\_\_\_

\_\_\_\_\_*[Insert date of issue]* **PERFORMANCE BOND**

**No.:** \_\_\_\_\_

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond \_\_\_\_\_ as Principal (hereinafter called “the Contractor”) and \_\_\_\_\_] as Surety (hereinafter called “the Surety”), are held and firmly bound unto \_\_\_\_\_] as Obligee (hereinafter called “the Procuring Entity”) in the amount of \_\_\_\_\_ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, for \_\_\_\_\_ in accordance with the documents, plans, specifications, and amendments there to, which to the extent here in provided for, are by reference made part here of and are here in after referred to as the Contract.
3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:
  - a) Complete the Contract in accordance with its terms and conditions; or
  - b) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “Balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
  - c) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.
4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.
5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.
6. In testimony whereof, the Contractor has here unto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly at tested by the signature of his legal representative, this day \_\_\_\_\_ of \_\_\_\_\_ 20\_\_\_\_\_.

SIGNED ON \_\_\_\_\_ on behalf of \_\_\_\_\_

By \_\_\_\_\_ in the capacity of \_\_\_\_\_

In the presence of \_\_\_\_\_

SIGNED ON \_\_\_\_\_ on behalf of \_\_\_\_\_

By \_\_\_\_\_ in the capacity of \_\_\_\_\_

In the presence of \_\_\_\_\_



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## **PART III - WORKS REQUIREMENTS**

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## **SECTION VI – SPECIFICATIONS**

### **PARTICULAR SPECIFICATIONS**

#### **EMPLOYER**

The “Employer” is the **KARATINA UNIVERSITY** whose address unless otherwise notified is **P.O. BOX 1957-10101 KARATINA**.

#### **PROJECT MANAGER**

The term "P.M." wherever used in the Bills of Quantities shall be deemed to imply the Project Manager as defined in the Conditions of Contract or such person or persons as may be duly authorized to represent him.

#### **ARCHITECT**

The term “Architect” shall be deemed to mean “The P.M.” as defined above whose address unless otherwise notified is **JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY ENTERPRISES LTD (JKUATES), P.O. BOX 62000-00200 NAIROBI**.

#### **QUANTITY SURVEYOR**

The term “Quantity Surveyor” shall be deemed to mean ‘The P.M.’ as defined above.

#### **ELECTRICAL ENGINEER**

The term “Electrical Engineer” shall be deemed to mean “The P.M.” as defined above.

#### **MECHANICAL ENGINEER**

The term “Mechanical Engineer” shall be deemed to mean “The P.M.” as defined above.

#### **STRUCTURAL ENGINEER**

The term “Structural Engineer” shall be deemed to mean “The P.M.” as defined above.

#### **THE CONTRACTOR OR MAIN CONTRACTOR**

The term ‘contractor’ or ‘main contractor’ shall be deemed to mean the firm appointed by the employer to carry out the main building works. The terms ‘contractor’ and ‘main contractor’ shall be synonymous.

#### **WORKS**

The expression 'work' or 'works' shall mean all or any portion of the work, material and plant to be provided and the labour to be performed for the execution and in fulfillment of this contract, and whether the same may be on site or not.

#### **THE SITE**

The proposed works shall be situated at KAGOCI, MATHIRA SUB-COUNTY, NYERI COUNTY.

The tenderer is advised to visit the site and will be deemed to have satisfied himself with regard to the existing conditions thereof, the means of access, the risk of injury or damage to existing property and property adjacent to the site or to the occupiers of such property. No claim by the contractor will be allowed on the ground of any misunderstanding or misapprehension in respect of any such matter or otherwise.

The contractor must obtain the approval of the Engineer regarding the use of any materials found on the site.

#### **GENERAL DESCRIPTION OF THE WORKS**

The works comprise supply, installation and commissioning of **Structured Cabling, IP-PABX, CCTV and Access and Control installation.**

#### **SPECIFICATION**

Shall mean the whole of the contract document including but not restricted to:-

- a) This document comprising definitions and preliminaries, General specifications, particular specifications and schedules as contained herein.
- b) The contract drawings.

#### **BILLS OF QUANTITIES**

Where the term 'Bills of Quantities' bears any relation to subcontract, it shall mean the 'specification' and the prices or any other schedules contained therein.

#### **CONTRACT DRAWINGS**

Shall mean those drawings listed in the schedules or referred to herein, forming part of this specification.

#### **MANUFACTURER'S RECOMMENDATIONS**

Shall mean the manufacturer's recommendation or instructions, printed or in writing and current at the time of execution of the works.

#### **OR OTHER APPROVED**

Shall mean that commodities of a manufacturer other than that specified by the proprietary name may be substituted provided they meet the standards specified and that express approval has been obtained from the Engineer. The rates of prices will be held to be of the commodity specified and current at the time of tender.

#### **PROPRIETARY NAME**

The phrase 'or other approved' shall be deemed to be included in every case where commodities are specified by proprietary name.

#### **APPROVED, DIRECTED AND SELECTED**

Shall mean approved, directed or selected by the Engineer and shall not be binding unless put in writing and signed by the Engineer.

## ABBREVIATIONS

NO	-	shall mean number
m	-	shall mean metre
L.M	-	shall mean linear metre
mm	-	shall mean millimetre
kg	-	shall mean kilogramme
Ltr.	-	shall mean litre
S.S	-	shall mean stainless steel
G.M.S	-	shall mean galvanised mild steel
M.O.P.W-		shall mean ministry of public works
B.S	-	shall mean the Current British standards specification published by The British standard Institution
C.P	-	shall mean the current British standard code of practice published together with the B.S
I.E.E	-	shall mean the Institute of Electrical Engineers, Savoy Place , London.
I.S.O	-	shall mean the International organization for standardization
K.B.S	-	shall mean the Kenya Bureau of Standards.
Ditto	-	shall mean the whole of the preceding description except as qualified in the description in which it occurs.

## **GENERAL AND PARTICULAR SPECIFICATIONS OF MATERIALS AND WORKS**

### **GENERAL SPECIFICATIONS OF MATERIALS AND WORKS**

This specification is to be read in conjunction with any other information herein issued with it. Bills of quantities and schedule of unit rates 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 contractor shall adhere.

Should the contractor install any material not specified herein before receiving approval from the proper authorities, the Engineer shall direct the 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 Contractor. All materials required for the works shall be from branded manufacturers, and 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 contractor's expense.

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

### **PROCUREMENT OF MATERIALS**

The 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.

Contractors are warned that they must make their own arrangements for the supply of materials and/or products specified or required. Where necessary, advance payment shall be granted as stipulated in the Appendix to Instruction to Tenderers clause 9 page A/17

### **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 (KBS), 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 (CAK)

Where the sets of regulations appear to conflict, they shall be clarified with the Engineer.

## **SETTING OUT WORK**

The 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.

## **TESTING ON SITE**

The 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 Specifications No. 1 and No.2, Electric Supply Company’s By-Laws, Communications Authority of Kenya (CAK) requirements or any other supplementary Regulations as may be produced by the engineer.

Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation shall be rectified by the contractor at his own expense.

## PARTICULAR SPECIFICATIONS OF MATERIALS AND WORKS

### PART-1: TELECOMMUNICATIONS DISTRIBUTION SYSTEM – STRUCTURED CABLING

#### A. GENERAL TECHNICAL SPECIFICATIONS

- a. **Section Includes: Equipment, materials, labor, and services to provide telephone and data distribution system including but not limited to:**
1. Telephone and data cabling terminations
  2. Optical fiber and terminations
  3. Data/voice outlets
  4. Terminal blocks/cross-connect systems
  5. Equipment racks and cabinets
  6. System testing
  7. Documentation and submissions
8. Surface trunking, cable ladder
9. Core switch, edge switches
- b. **Provide all equipment, materials, labor, and services, not specifically mentioned or shown, which may be necessary to complete or perfect all parts of the installation. Ensure that they are in compliance with requirements stated or reasonably inferred by the contract documents.**

#### 1. REFERENCES

- a. **Design, manufacture, test, and install telecommunications cabling networks per manufacturer's requirements and in accordance with NFPA-70 (*National Electrical Code®*)/IEEE Regulations, state codes, local codes, requirements of authorities having jurisdiction, and particularly the following standards: ANSI/NECA/BICSI-568 -- Standard for Installing Commercial Building Telecommunications Cabling ANSI/TIA/EIA Standards.**
- 1) ANSI/TIA/EIA-568-B.1 -- *Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements*
  - 2) ANSI/TIA/EIA-568-B.2 -- *Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted Pair Cabling Components*
  - 3) ANSI/TIA/EIA-568-B.3 -- *Optical Fiber Cabling Components Standard*
  - 4) ANSI/TIA/EIA-569-A -- *Commercial Building Standard for Telecommunications Pathways and Spaces*
  - 5) ANSI/TIA/EIA-606(A) -- *The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings*
  - 6) ANSI/TIA/EIA-607(A) -- *Commercial Building Grounding and Bonding Requirements for Telecommunications*
  - 7) ANSI/TIA/EIA-526-7 -- *Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant*
  - 8) ANSI/TIA/EIA-526-14A -- *Measurement of Optical Power Loss of Installed Multimode Fiber Cable Plant*
  - 9) ANSI/TIA/EIA-758(A) -- *Customer-Owned Outside Plant Telecommunications Cabling Standard*
  - 10) ISO/IEC 1101 *Amendment 2*
- b. **Local codes, rules, regulations, and ordinances governing the work, are as fully part of the specifications as if herein repeated or hereto attached. If the contractor should note items in the drawings or the specifications, construction of which would be code violations, promptly call them to the attention of the Project Manager in writing. Where the requirements of other**



sections of the specifications are more stringent than applicable codes, rules, regulations, and ordinances, the specifications shall apply.

## **2. PERMITS, FEES, AND CERTIFICATES OF APPROVAL**

- a. The Contractor to include the cost of application and pay for building permit.
- b. As prerequisite to final acceptance, supply to the client certificates of inspection from an inspection agency acceptable to the owner and approved by local municipality and utility company serving the Project Manager.

## **3. SYSTEM DESCRIPTION**

- a. A telecommunications cabling system generally consists of one telecommunications outlet in each workstation, wall telephones in common and power socket outlet.
- b. The typical work area consists of a single-gang plate with two standards compliant work area outlets.
- c. One work area outlet consists of one (1) four-pair data Category 6A cable or above, installed from work area outlet to the data cabinet. Terminate data cables on modular patch panels located in the appropriate data cabinet.
- d. One work area outlet consists of one (1) four-pair screened (ScTP) cable installed from work area outlet to the data termination rack in the cabinet. Terminate data cables on rack mounted modular patch panels.

**2.1 Vertical/horizontal copper backbone cabling consists of multiple pair unshielded twisted-pair installed from the main cross-connect (MC) to the horizontal cross-connect (HC) and/or from the MC to the intermediate cross-connect (IC) to the HC.**

**2.2 Vertical/horizontal backbone cabling consists of 62.5/125  $\mu$ m multimode optical fiber cable installed from the MC to the HC and/or from the MC to the IC to the HC.**

**2.3 Vertical/horizontal backbone cabling consists of 50/125  $\mu$ m multimode optical fiber cable installed from the MC to the HC and/or from the MC to the IC to the HC. *Specification Note: State what this backbone will be utilized for. Examples are voice telecommunications service, premises switching equipment, data communications, etc.***

## **4. SUBMITTALS**

- a. Submit to the P.M shop drawings, product data (including cut sheets and catalog information), and samples required by the contract documents. Submit shop drawings, product data, and samples with such promptness and in such sequence as to cause no delay in the work or in the activities of separate contractors. The engineer will indicate approval of shop drawings, product data, and samples submitted to the engineer by stamping such submittals "APPROVED" with a stamp. Submitted shop drawings shall be initialed or signed by the contractor, showing the date and the contractor's legitimate firm name.

1) By submitting shop drawings, product data, and samples, the contractor represents that he or she has carefully reviewed and verified materials, quantities, field measurements, and field construction criteria related thereto. It also represents that the contractor has checked, coordinated, and verified that information contained within shop drawings, product data, and samples conform to the requirements of the work and of the contract documents. The engineer/designer remains responsible for the design concept expressed in the contract documents as defined herein.

2) The P.M approval of shop drawings, product data, and samples submitted by the contractor shall not relieve the contractor of responsibility for deviations from requirements of the contract documents, unless the contractor has specifically informed the engineer/designer in writing of such deviation at time of submittal, and the engineer/designer has given written approval of the specific deviation. The contractor shall continue to be responsible for deviations from requirements of the contract documents not specifically noted by the contractor in writing, and specifically approved by the engineer in writing.

3) The P.M approval of shop drawings, product data, and samples shall not relieve the contractor of responsibility for errors or omissions in such shop drawings, product data, and samples.

4) The P.M review and approval, or other appropriate action upon shop drawings, product data, and samples, is for the limited purpose of checking for conformance with information given and design concept expressed in the contract documents. The engineer's review of such submittals is not conducted for the purpose of determining accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the contractor as required by the contract documents.

The review shall not constitute approval of safety precautions or of construction means, methods, techniques, sequences, or procedures. The P.M approval of a specific item shall not indicate approval of an assembly of which the item is a component.

**b. Shop drawings: Submit the following:**

**Coordinate with Part 2.**

- 1) *Backbone (riser) diagrams*
- 2) *System block diagram, indicating interconnection between system components and subsystems*
- 3) *Interface requirements, including connector types and pin-outs, to external systems and systems or components not supplied by the contractor*
- 4) *Fabrication drawings for custom-built equipment*

**c. Product Data -- Provide catalog cut sheets and information for the following:**

**Coordinate with Part 2.**

- 1) Wire, cable, and optical fiber
- 2) Outlets, jacks, faceplates, and connectors
- 3) All metallic and nonmetallic raceways, including surface raceways, outlet boxes, and fittings
- 4) Terminal blocks and patch panels
- 5) Enclosures, racks, and equipment housings
- 6) Over-voltage protectors
- 7) Splice housings

**d. Samples - Submit samples as required by the Engineer.**

**e. Project record drawings:**

- 1) Submit project record drawings at conclusion of the project and include:
  - (a) Approved shop drawings.
  - (b) Plan drawings indicating locations and identification of work area outlets, nodes, data cabinet rooms, and backbone (riser) cable runs.
  - (c) Cross-connect schedules including entrance point, main cross-connects, intermediate cross-connects, and horizontal cross-connects.
  - (d) Labeling and administration documentation.
  - (e) Warranty documents for equipment.

- (f) Copper certification test result printouts and diskettes.
- (g) Optical fiber power meter/light source test results.
- (h) Operation and maintenance manuals:

## **5. QUALITY ASSURANCE**

- 1.1 The contractor shall have worked satisfactorily for a minimum of five (5) years on systems of this type and size.**
- 1.2 Upon request by the P.M, furnish a list of references with specific information regarding type of project and involvement in providing of equipment and systems.**
- 1.3 Equipment and materials of the type for which there are independent standard testing requirements, listings, and labels, shall be listed and labeled by the independent testing laboratory.**
- 1.4 Where equipment and materials have industry certification, labels, or standards (i.e., NEMA - National Electrical Manufacturers Association), this equipment shall be labeled as certified or complying with standards.**
- 1.5 Material and equipment shall be new, and conform to grade, quality, and standards specified. Equipment and materials of the same type shall be a product of the same manufacturer throughout.**
- 1.6 Subcontractors shall assume all rights and obligations toward the contractor that the contractor assumes toward the client and P.M.**

## **5. WARRANTY**

- 5.1 Unless otherwise specified, unconditionally guarantee in writing the materials, equipment, and workmanship for a period of not less than fifteen (15) years from date of commissioning of the project for active components.**
- 5.2 Transfer manufacturer's warranties to the owner in addition to the General System Guarantee. Submit these warranties on each item in list form with shop drawings. Detail specific parts within equipment that are subject to separate conditional warranty. Warranty proprietary equipment and systems involved in this contract during the guarantee period. Final payment shall not relieve you of these obligations.**

## **6. DELIVERY, STORAGE, AND HANDLING**

- 6.1 Protect equipment during transit, storage, and handling to prevent damage, theft, soiling, and misalignment. Coordinate with the client for secure storage of equipment and materials. Do not store equipment where conditions fall outside manufacturer's recommendations for environmental conditions. Do not install damaged equipment; remove from site and replace damaged equipment with new equipment.**

## **7. SEQUENCE AND SCHEDULING**

- 7.1 Submit schedule for installation of equipment and cabling. Indicate delivery, installation, and testing for conformance to specific job completion dates. As a minimum, dates are to be provided for bid award, installation start date, completion of station cabling, completion of riser cabling, completion of testing and labeling, cutover, completion of the final punch list, start of demolition, owner acceptance, and demolition completion.**

## **8. USE OF THE SITE**

- 8.1 Access to building wherein the work is performed shall be as directed by the P.M. The client will occupy the premises during the entire period of construction for conducting his or her normal business operations. Cooperate with the client to minimize conflict and to**

facilitate the owner's operations.

Schedule necessary shutdowns of plant services with the main contractor, and obtain written permission from the client.

Proceed with the work without interfering with ordinary use of streets, aisles, passages, exits, and operations of the client.

## **PRODUCTS**

### **1. MANUFACTURERS**

Provide products of manufacturers as named in individual articles. Where no manufacturer is specified, provide products of manufacturers in compliance with requirements.

### **2. FABRICATION**

Fabricate custom-made equipment with careful consideration given to aesthetic, technical, and functional aspects of equipment and its installation.

### **3. SUITABILITY**

Provide products that are suitable for intended use, including, but not limited to environmental, regulatory, and electrical.

### **4. VOICE/DATA TELECOMMUNICATIONS SERVICE BACKBONE CABLE**

a. Solid copper, 24 AWG, 100  $\Omega$  balanced twisted-pair (UTP) backbone cable, with mechanical and transmission performance specifications that meet or exceed ANSI/TIA/EIA-568-B.2

b. Multimode 62.5/125  $\mu\text{m}$  diameter tight-buffered optical fiber, with fiber counts as indicated on drawings, with mechanical and transmission performance specifications that meet or exceed ANSI/TIA/EIA-568-B.3

### **5. VOICE TELECOMMUNICATIONS STATION CABLE**

a. Solid copper, 24 AWG, 100  $\Omega$  balanced twisted-pair (UTP) Category 6A cables with four individually twisted-pairs, which meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-B.2 up to 100 MHz.

### **6. DATA STATION CABLE (Copper)**

a. Solid copper, 24 AWG, 100  $\Omega$  balanced twisted-pair (UTP) Category 6A cables with four individually twisted-pairs, which meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-B.2 up to 100 MHz.

b. Solid copper, 24 AWG, 100  $\Omega$  balanced twisted-pair, screened (ScTP) cables with four individually twisted-pairs, which meet or exceed the mechanical and transmission performance specifications in ANSI/TIA/EIA-568-B.2 (Annex K) up to 100 MHz.

### **7. DATA STATION CABLE (Optical Fiber)**

a. Multimode 62.5/125  $\mu\text{m}$  diameter tight-buffered optical fiber, with the required number of fiber counts, with mechanical and transmission performance specifications that meet or exceed ANSI/TIA/EIA-568-B.3

### **8. UNDERGROUND TELECOMMUNICATIONS CABLE (Copper)**

If you have copper cables installed outside between buildings, be certain to specify overvoltage protectors on both ends of the cable. See article, OVERVOLTAGE PROTECTORS.

Solid copper, 24 AWG 100  $\Omega$  balanced twisted-pair, gel-filled duct cable, in sizes as indicated on the drawings, which meet or exceed the mechanical and transmission performance specifications listed in ANSI/TIA/EIA-568-B.2 and ANSI/TIA/EIA-758(A).

**9. UNDERGROUND TELECOMMUNICATIONS CABLE (Optical Fiber)**

Singlemode 8.7 µm to 10 µm diameter, armored, gel-filled optical fiber, with number of usable fibers as shown on drawings, which meet or exceed the mechanical and transmission performance specifications listed in ANSI/TIA/EIA-568-B.3 and ANSI/TIA/EIA-758(A).

**10. VOICE/DATA – COPPER & OPTICAL FIBER WORK AREA OUTLETS**

Edit for items that will actually be used on the project.

Pick a color for the faceplate and each type of jack, or make them all one color.

Determine which pinning standard is to be used, T568A, T568B, or USOC. If not otherwise specified, specify T568A. Use either 10c with SC connectors or 10d (1) for ST connectors. SC connectors are preferred. Use ST connectors to match existing cable plant if required.

Single-gang mounting plate with two (2) openings containing the following devices:

- a. Data Outlet - 8-pin modular, category 6A, unkeyed, black, pinned to either T568 (A or B) standards.
- b. Optical Fiber Connectors – simplex ST - ST adapter.  
Provide two optical fiber adapters for each faceplate

**11. VOICE/DATA WORK AREA OUTLETS (Copper only)**

Single-gang mounting plate with four (4) openings containing the following devices:

Data Outlet - 8-pin modular, Category 6A, unkeyed, black, pinned to either T568 (A or B) standards.

**12. VOICE ONLY WORK AREA OUTLET**

Single-gang faceplate with 8-pin modular, category 6A, unkeyed, ivory telephone jack, pinned to either T568 (A or B) standards

**13. TERMINATION BLOCKS**

For items that will actually be used on the project: Coordinate with MC, IC and HC layout drawing.

a. Product(s) as approved by the P.M: Wiring blocks are to be in following configurations:

- 1) List dimensional configurations
- 2) ER – List pairs categorized for PABX portion of ER and pairs field terminated for backbone and CO portion of ER

Provide wiring troughs between ER frame sections.

**14. PATCH PANELS**

Specification Note: Alter quantities to match job requirements.

19 in. rack mountable, 24-port 8-pin modular to insulation displacement connector (IDC) meeting Category 6A performance standards, and pinned to either T568 (A or B) standards. Typical examples of IDC connections are the 110, BIX, and Krone.

**15. WALL MOUNTED OPTICAL FIBER PATCH PANELS**

Specification Note: Alter quantities to match job requirements

Wall-mounted optical fiber termination panel with 12-fiber capacity, hinged door, cable strain relief, slack storage, and two 6-port SC or approved alternative connector panels with adapters and provisions for two splice trays.

**16. RACK MOUNTED OPTICAL FIBER TERMINATION PANEL**

Specification Note: Alter size to match job requirements. Coordinate with connector type.

19 in. rack mounted 72-port rack-mounted optical fiber termination panel with cable strain relief, grounding lugs, slack storage and three 12-port duplex SC or approved alternative connector panels with adapters and provisions for six (6) splice trays.

**17. SPLICE TRAYS**

Sized for single mode and multimode fibers, nonmetallic with clear plastic cover, 12-fiber splice capacity, compatible with splice enclosure and splicing method.

**18. OPTICAL FIBER CONNECTORS**

Ceramic tipped field installed 568SC connectors, which meet or exceed the performance specifications in ANSI/TIA/EIA-568-B.3. Various alternative field installed connector designs, which meet or exceed the performance specifications in ANSI/TIA/EIA-568-B.3 (Annex A).

**19. OPTICAL FIBER JUMPERS**

Dual 62.5/125- $\mu$ m (*and/or single mode*) optical fiber jumper cable, 1 m long with 3.0 mm Duplex 568SC optical fiber connectors on each end.

Dual 62.5/125- $\mu$ m (*and/or single mode*) optical fiber jumper cable, 1 m long with approved alternative duplex optical fiber connectors on each end.

**20. OPTICAL FIBER PIGTAILS**

62.5/125  $\mu$ m (*and/or single mode*) optical fiber pigtail 1 m long with 3.0 mm single 568 SC optical fiber connectors on one end

**21. OPEN FRAME EQUIPMENT RACK**

Open frame, 19 in. equipment rack, 7 foot 6 in. overall height with flange base, mounting rails drilled front and back and tapped to EIA standards, and a front-rack mountable 10 outlet multiple outlet electrical strip or 42u enclosed glazed.

**22. EQUIPMENT RACKS/CABINETS**

Specification Note: Use 19 in. or change to 23 in. as required. If using wall-mounted racks or cabinets, add required specifications here. Add and delete features as required.

a. The 19 in. equipment rack shall have the following minimum requirements:

- 77 in. (44 rack spaces) of panel space
- Welded frame construction
- Locking front and rear doors
- Adjustable front and back equipment mounting rails drilled and tapped to EIA standards
- 10 position electrical outlet strip
- Removable side panels
- Top mounted, thermostatically controlled exhaust fan
- Smoked acrylic front door.

**23. LISTED BUILDING ENTRANCE PROTECTORS**

Use when copper cables are run outside of building.

Use appropriate protector modules.

Building entrance terminal utilizing a two (2) foot fuse link between the outside cable plant splice and the protector module with IDC type input and output terminals, 100-pair capacity and female mounting base, equipped with 230-volt solid state protector modules. Provide sufficient protector modules to completely populate all building entrance terminals.

**24. SPLICE HOUSING**

Use this or something else. Delete splice modules if used for optical fiber cables.

- a. Encapsulated, re-enterable splice housing, sized as required with bonding straps, accessories, end caps and encapsulant as required
- b. Splice modules (such as 710 series or MS<sup>2</sup>) for use within splice housing

**25. SPARES**

Change quantities to suit job size. Edit to match that which is actually specified.

a. Furnish the following spare equipment and parts:

Terminal block connectors, if required

Test set cords, if required

Install one test cord set in each telecommunications closet

Five (5) percent of base bid quantity of each type of jack shall be provided

Five (5) percent of base bid quantity of each type of outlet

Five thousand (5000) ft of each type of station cable

One thousand (1000) ft of one-pair cross-connect wire for each telecommunications closet  
One thousand (1000) ft of two-pair cross-connect wire for each telecommunications closet  
Five (5) percent of base bid quantity of protector modules

## **EXECUTION**

### **1. PRE-INSTALLATION SITE SURVEY**

- a. Prior to start of systems installation, meet at the project site with the P.M and representatives of trades performing related work to coordinate efforts. Review areas of potential interference and resolve conflicts before proceeding with the work. Facilitation with the Client will be necessary to plan the crucial scheduled completions of the equipment room and telecommunications closets.
- b. Examine areas and conditions under which the system is to be installed. Do not proceed with the work until satisfactory conditions have been achieved.

### **2. HANDLING AND PROTECTION OF EQUIPMENT AND MATERIALS**

- a. Be responsible for safekeeping of your own, such as equipment and materials, on the job site. The client assumes no responsibility for protection of above named property against fire, theft, and environmental conditions.

### **3. PROTECTION OF OWNER'S FACILITIES**

- a. Effectively protect the client's facilities, equipment, and materials from dust, dirt, and damage during construction.
- b. Remove protection at completion of the work.

### **4. INSTALLATION**

Receive, check, unload, handle, store, and adequately protect equipment and materials to be installed as part of the contract. Store in areas as directed by the owner's representative. Include delivery, unloading, setting in place, fastening to walls, floors, ceilings, or other structures where required, interconnecting wiring of system components, equipment alignment and adjustment, and other related work whether or not expressly defined herein.

Install materials and equipment in accordance with applicable standards, codes, requirements, and recommendations of national, state, and local authorities having jurisdiction, and *National Electrical Code®* (NEC) and with manufacturer's printed instructions.

Adhere to manufacturer's published specifications for pulling tension, minimum bend radii, and sidewall pressure when installing cables.

- 1) Where manufacturer does not provide bending radii information, minimum-bending radius shall be 15 times cable diameter. Arrange and mount equipment and materials in a manner acceptable to the P.M and the client.
- e. Penetrations through floor and fire-rated walls shall utilize intermediate metallic conduit (IMC) or galvanized rigid conduit (GRC) sleeves and shall be fire stopped after installation and testing, utilizing a fire stopping assembly approved for that application.
  - f. Install station cabling to the nearest telecommunications room (TR), unless otherwise noted.
  - g. Installation shall conform to the following basic guidelines:
    - 1) Use of approved wire, cable, and wiring devices
    - 2) Neat and uncluttered wire termination
  - h. Attach cables to permanent structure with suitable attachments at intervals of 1200- 1500mm. Support cables installed above removable ceilings.
  - i. Install adequate support structures for 10 foot of service slack at each TR.

j. Support riser cables every floor and at top of run with cable grips.

1) Limit number of four-pair data riser cables per grip to fifty (50)

k. Install cables in one continuous piece. Splices shall not be allowed except as indicated on the drawings or noted below:

l. Provide over voltage protection on both ends of cabling exposed to lightning or accidental contact with power conductors.

Specification Note: *Insert any other specific installation requirements here, such as hook and latch fasteners instead of cable ties, etc.*

## **5. GROUNDING**

a. Grounding shall conform to ANSI/TIA/EIA 607(A) - *Commercial Building Grounding and Bonding Requirements for Telecommunications, National Electrical Code®*, ANSI/NECA/BICSI-568 and manufacturer's grounding requirements as minimum.

b. Bond and ground equipment racks, housings, messenger cables, and raceways.

c. Connect cabinets, racks, and frames to single-point ground which is connected to building ground system via #6 AWG green insulated copper grounding conductor.

## **6. LABELING**

Use 6d if the type of termination block permits labels. Otherwise use 6e.

Use 6g if the owner does not have a standard for outlet numbering.

Use 6h if required. Alter time as requested.

Labeling shall conform to ANSI/TIA/EIA-606(A) standards. In addition, provide the following:

a. Label each outlet with permanent self-adhesive label with minimum 3/16 in. high characters.

b. Label each cable with permanent self-adhesive label with minimum, 1/8 in. high characters, in the following locations:

1) Inside receptacle box at the work area.

2) Behind the communication closet patch panel or punch block.

c. Use labels on face of data patch panels. Provide facility assignment records in a protective cover at each telecommunications closet location that is specific to the facilities terminated therein.

d. Use color-coded labels for each termination field that conforms to ANSI/TIA/EIA-606(A) standard color codes for termination blocks.

e. Mount termination blocks on color-coded backboards.

f. Labels shall be machine-printed. Hand-lettered labels shall not be acceptable.

g. Label cables, outlets, patch panels, and punch blocks with room number in which outlet is located, followed by a single letter suffix to indicate particular outlet within room, i.e., S2107A, S2107B.

Indicate riser cables by an R then pair or cable number.

h. Mark up floor plans showing outlet locations, type, and cable marking of cables. Turn these drawings over to the owner two (2) weeks prior to move in to allow the owner's personnel to connect and test owner-provided equipment in a timely fashion.



i. Three (3) sets of as-built drawing shall be delivered to the owner within four (4) weeks of acceptance of project by the owner. A set of as-built drawings shall be provided to the owner in storage media of the flash disks and CD-ROM and utilizing CAD software that is acceptable to the owner. The storage media shall be delivered to the owner within six (6) weeks of acceptance of project by owner.

## 7. TESTING

Testing shall conform to ANSI/TIA/EIA-568-B.1 standard. Testing shall be accomplished using level IIe or higher field testers.

Test each pair and shield of each cable for opens, shorts, grounds, and pair reversal. Correct grounded, and reversed pairs. Examine open and shorted pairs to determine if problem is caused by improper termination. If termination is proper, tag bad pairs at both ends and note on termination sheets.

- 1) Perform testing of copper cables with tester meeting ANSI/TIA/EIA-568-B.1 requirements.
- 2) If copper backbone cable contains more than one (1) percent bad pairs, remove and replace entire cable.  
Use 2 or 3 as required.

3) If copper cables contain more than the following quantity of bad pairs, or if outer sheath damage is cause of bad pairs, remove and replace the entire cable:

CABLE SIZE	MAXIMUM BAD PAIRS
<100	1
101 to 300	1 – 3
301 to 600	3 – 6
>601	6

- 4) If horizontal cable contains bad conductors or shield, remove and replace cable. Initially test optical cable with a light source and power meter utilizing procedures as stated in ANSI/TIA/EIA-526-14A: *OFSTP-14A Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant* and ANSI/TIA/EIA-526-7 *Measurement of Optical Power Loss of Installed Single mode Fiber Cable Plant*. Measured results shall be plus/minus 1 dB of submitted loss budget calculations. If loss figures are outside this range, test cable with optical time domain reflectometer to determine cause of variation. Correct improper splices and replace damaged cables at no charge to the owner.
  - 1) Cables shall be tested at 850 and 1300 nm for multimode optical fiber cables. Cables shall be tested at 1310 and 1550 nm for single mode optical fibers.
  - 2) Testing procedures shall utilize “Method B” – One jumper reference.
  - 3) Bi-directional testing of optical fibers is required.
- d. Perform optical time domain reflectometer (OTDR) testing on each fiber optic conductor. Measured results shall be plus/minus 1 dB of submitted loss budget calculations.
  - 1) Submit printout for each cable tested.
  - 2) Submit 3.5 in. disks with test results and program to view results.
- e. Where any portion of system does not meet the specifications, correct deviation and repeat applicable testing at no additional cost.

## FIELD QUALITY CONTROL

a. Employ job superintendent during the course of the installation to provide coordination of work of this specification and of other trades, and provide technical information when requested by other trades. This person shall maintain current RCDD® (Registered Communications Distribution Designer) registration and shall be responsible for quality control during installation, equipment set-up, and testing.

b. At least 30 percent of installation personnel shall be *BICSI Registered Telecommunications Installers*. Of that number, at least 15 percent shall be registered at the *Technician Level*, at least 40 percent shall be registered at the *Installer Level 2*, and the balance shall be registered at the *Installer Level 1*.

Specification Note: Use this or insert manufacturer's requirements for installer qualifications to meet extended warranty program requirements.

c. Installation personnel shall meet manufacturer's training and education requirements for implementation of extended warranty program.

## **B. PARTICULAR SPECIFICATIONS FOR STRUCTURED CABLING WORKS**

### **1.0 SITE LOCATION**

The site of the proposed works is located at **Karatina University, Nyeri County.**

### **2.0 DESCRIPTION OF THE PROJECT**

The works to be carried out comprise the following;

- i) Proposed supply, installation, testing and commissioning of a structured cabling system to cater for computer data points and telephone points.
- ii) Configure and set up the structured cabling system to be used on LAN,
- iii) Produce test result, warranty certification, reports and as installed drawings. The Network will be capable of supporting approximately 90No.data/voice points.
- iv) Supply, install telephone cables to interconnect the data cabinets to the IP-PABX to be located in the Server Room. The works shall include inter-wiring, programming and activating all voice points.

### **3.0 REGULATIONS**

The contractor shall, in execution and completion of the works in the detailed design for which he is responsible, comply with the provisions of the following as necessary and relevant;

- a) ISO/IEC, CAK, ATM CENELEC 11801
- b) ANSI/EIA/TIA 56
- c) Latest Edition of IEE Regulation
- d) Kenya Bureau of Standards
- e) Electric Power Act and Rules made there under.

### **4.0 WORKING DRAWINGS**

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations of and identifiers for all cable routing and terminations, telecommunication outlets/connectors. Location of core switch and Edge switches.

### **5.0 NETWORK CABINETS**

- a) To be located on each floor in designated rooms as indicated in the electrical drawings.
- b) Must be metallic (appropriately sized as specified in the BQ) with a front clear glass, freestanding, complete with lock and key and the following accessories;
  - Cable Management channel rack
  - Cable support hooks
  - Cable support rings and straps
  - Cable duct cover
  - Feed through cable panels
  - Vented equipment shelving
  - Blank filler panels
  - Hinged wall mounted brackets
  - Glass viewing window
  - Colored Designation strips
  - Management lock and key
  - Cooling extractor fans
  - Caster wheels
  - Inbuilt 2-gang power socket outlet

### **6.0 ACTIVE CONTROL EQUIPMENTS AT THE NETWORK CORE**

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

Technical Specifications	Requirement
LAN Interface Modules	16SFP+
<b>Chassis</b>	
Chassis Slots	4
Fixed Slots (for Control Modules)	1
Open Slots (for Port Modules)	3
Max. Switching Capacity	500 Gbps
Max. Packet Forwarding Rate	400Mbps
<b>Maximum Port Density</b>	
10/100/1000Base-TPorts	144
10/100/1000Base-TPorts with PoE	144
Gigabit SFP Slots	144
10-Gigabit SFP+Slots	48
Dimensions	≤8U
Operating Temperature	0° to50°C
Operating Humidity	10%to90%RH
<b>L2Features</b>	
MACAddressTable	32K per I/O module
Flow Control	-802.3xFlowControl -HOL Blocking Prevention
IGMP Snooping	-IGMPv1/v2/v3Snooping -Support2Kgroups -IGMPProxy2 -Host-based IGMP Snooping Fast Leave
802.3adLinkAggregation	-Compliantwith802.1AXand802.3ad -Max. 128 groups per device, 8 ports per group -Support cross-module trunk
power supply	The core switch should have redundant power supply, redundant fan tray and redundant CPU/ supervisor engine installed

## 7.0 ACTIVE CONTROL EQUIPMENTS AT THE LAN EDGE

Active control equipment at the LAN Edge should have the following features

- a) 20 x 10/100/1000BASE-T PoE ports
- b) 4 x 10/100/1000BASE-T/SFP Combo ports
- c) 4 x SFP+ ports
- d) High-bandwidth physical stacking of up to 12 units for a total of 576 Gigabit ports
- e) Supports 802.3af and 802.3at PoE with a high-capacity 370 W PoE power budget
- f) L2/L3 static routing support, including Static Route and RIP v1/v2/ng
- g) Comprehensive security features including IMPB, AAA, L2/L3/L4 access control, QoS, and Safeguard Engine
- h) IPv6-ready
- i) VLAN: VLAN Group, GVRP, 802.1Q tagged, Port-based, Trunking, Voice, Asymmetric
- j) QoS: 802.1p, Queue Handling, Bandwidth Control
- k) ACL: VLAN ID, MAC Address, TCP/UDP port Number, Ether Type, IPV6, Time Based
- l) Security: SSH v2, Traffic Segmentation, DoS prevention, DHCP server screening
- m) AAA: 802.1X, Web-Based Access Control, MAC-Based Access Control
- n) Active Edge switches should be quoted with a minimum of **One year of warranty** covering free replacement of parts and units.

## 8.0 NTU Specifications

Type:	HDSL
Max Data Transfer Rate:	2Mbps
Mode of Operation:	DCE
Connector:	DB37
Interface Cable:	DB37-DB15

## 9.0 NETWORK MANAGEMENT SYSTEM

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

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

## 10.0 CABLES

### 10.1) UTP CABLE

The UTP cable must be category 6A compliant UTP cable, with the following specifications;

- a) 4-pair cables with 100-ohm impedance.
- b) Compliant to standards such as TIA/EIA – 268-B. 2-1 and IEC 61156-5
- c) Made of polyethylene insulation
- d) Pulling force should support up to 50N/mm<sup>2</sup>
- e) Low Smoke Zero Halogen outer sheath

### 10.2) OPTICAL FIBRE CABLE

The fibre cable must be 8 core multimode fibre with the following specifications: -

- a) Cable size: 8 core.
- b) Termination: SC Duplex connectors.
- c) Graded Index: Nominal 62.5/125 micro. m

## 11.0 CAT 6A PATCH PANELS

The Contractor shall provide factory made patch panels, Cat 6A complete with cable management and front designation strips, 110 PCB mounted connectors and integral RJ mounted jack sockets.

## **12.0 FIBER PATCH PANELS**

All Backbone Fiber links to individual floors should be terminated on Fiber Patch Panels. Connector interfaces should support ST, Sc simplex, Sc duplex, FC, LC or MT-RJ.

## **13.0 BACK BONE**

Backbone cabling inclusive of switches and all necessary accessories shall be carried out in readiness for the termination of edge switches.

The Backbone cabling shall be flexible and allow for easy 'add on's' for future expansions. Hence enough capacity shall be allowed for future expansion.

## **14.0 COMPLETION COMMISSIONING OF STRUCTURED CABLING WORKS**

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

#### **a) Category 6A Cable Tests**

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

#### **b) Fibre Optic Cable Tests**

1. Link attenuation (insertion loss)
2. Length

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

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

### **14.2 All components must be tested and a Completion Certificate issued stating the following:**

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

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

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

## **15.0 Documentation**

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

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

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

## **16.0 Warranty and Support**

- 16.1 The Contractor will be required to give a per link warranty of at least fifteen (15) years for the structured cabling infrastructure and must provide a site certification certificate from the manufacturer of the cabling infrastructure not more than 30 days after completion of tests.
- 16.2 In the event of failure of the core switch, the contractor will be required to deliver any necessary parts on the next business day after determining that parts replacement is required, during the standard work week (8 hours a day, 5 days a week). This support will be carried out by a field engineer and will run for a period of Twenty Four months from the date of commissioning of the LAN.
- 6.3 The contractor will be required to provide a sixty months warranty on the edge switches from the date of commissioning of the LAN.

## **17.0 ADDITIONAL NOTES**

Tenderers should take note of the following

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

## **PARTICULAR AND TECHNICAL SPECIFICATIONS – IP-PABX EQUIPMENT**

### **1.01 DESCRIPTION OF THE SITE**

The site of the proposed works is located at **Karatina University, Nyeri County**.

### **1.02 DESCRIPTION OF THE PROJECT**

The works comprise the Installation, Testing and Commissioning of existing IP-PABX Equipment, Supply, Installation and Testing of new Telephone Instruments and the associated cabling works as listed in the Bills of Quantities.

### **1.03 CLIMATIC CONDITIONS**

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

Altitude	1798M above Sea level
Mean Maximum Temperature	28.7°C
Mean Minimum Temperature	12.8°C
Range of Relative Humidity	48%-93%
Salt in the atmosphere	0.02%
Mean Rainfall	897mm

Extremely heavy rainfall is experienced at certain periods of the year and the contractor shall be deemed to have taken account of this factor both in his prices and his planning of the execution of the contract works.

Equipment de-rating factors for the temperature and altitude shall be stated.

### **1.04 BOND FOR PABX WITH PROVISIONAL TYPE APPROVAL**

Where the IP-PABX offered for this tender does not possess full type approval from C.A.K but has provisional type approval, the tenderer will be required to submit the name of a separate surety who will be willing to be bound to the Kenya Government in an amount equal to the full value of the PABX project for a period of 18 months from the date the IP-PABX is commissioned into service. The surety will be subject to the approval of the government.

### **1.05 REGULATIONS**

The contractor shall, in the execution and completion of the works in the detailed design for which he is responsible comply with the provisions of the following as necessary and relevant:

- Communication Authority of Kenya (*formerly CCK*)
- The Kenya Communications Act
- The Electronic Power Act and the Rules made there under.
- The Kenya Power and Lighting Company Limited's Bye-Laws.
- The current edition of the "Regulations for the Electric Equipment of Buildings" issued by the Institution of Electrical Engineers.
- The requirements of the Chief Inspector of Factories for the Kenya Government.
- Kenya Bureau of Standards (KEBS) Standard Specifications and Codes of Practice, or other equal and approved standard specifications and codes.
- The Bye-Laws of the Local Authority.
- Any other regulations applicable to Electric and Electronic Installations or Communications systems in Kenya.
- The Employer's Safety Regulations.

### **1.06 POSITION OF SERVICES AND EQUIPMENT**



The route services and approximate positions of apparatus are shown on the contract drawings but their exact positions shall be determined by approved dimensional details on working drawings or on site by the P.M.

The contractor shall ascertain on site that his work will not foil other services or furniture and all services through the ducts must be readily accessible for maintenance and arranged to allow maximum access along the ducts. Any work which has to be redone due to negligence in this respect will be the contractor's responsibility.

#### **1.07 SETTING TO WORK AND REGULATING SYSTEMS**

The contractor shall carry out such tests of the contract works as are required by KEBS Standard Specifications and Codes of Practice, I.E.E Regulations or equal and approved codes, or the competent Authority.

No testing or commissioning shall be under taken except in the presence of and to the satisfaction of the P.M. unless approved otherwise by him (contractor's own preliminary and proving tests are exempted).

The contractor shall include in his tender for the costs for testing and commissioning the contract works as herein described. He shall submit for approval to the P.M. a suitable programme for testing and commissioning. The P.M. and the Employer shall be given ample warning as to the dates on which testing and commissioning will take place.

The proving of any system of plant or equipment as to compliance with the specification shall not be approved by the P.M. except at his discretion until tests have been carried out under operating conditions appertaining to the most onerous conditions specified except where the time taken to obtain such conditions is unreasonable or exceeds 12 months after practical completion of the contract works.

#### **1.08 IDENTIFICATION OF PLANT AND COMPONENTS**

The contractor shall supply and install identification labels to all plant and to all switches and items of control equipment with, where no excessive heating is involved, white Traffolyte or equal labels engraved in block lettering denoting the name/function and/or section controlled. Where heating is likely to distort Traffolyte, approved aluminum labels with stamped or engraved lettering shall be used.

The labels shall be mounted on equipment and in most suitable positions. They shall be in English or in internationally understood symbols capable of being read without difficulty. The labels shall conform to descriptions used on record drawing. Details of the lettering of the labels and the method of mounts or supporting shall be forwarded to the P.M. for approval prior to manufacture.

#### **1.09 WORKING DRAWINGS**

The contractor shall prepare such working Drawings as may be necessary. The working Drawings shall be completed in such details not only that the contract works can be executed on site but also that the P.M. can approve the contractor's designs and intentions in execution of the contract works.

Approved working drawings shall not be departed from except where provided for.

Approval by the P.M. of working Drawings shall neither relieve the contractor of any of his obligations under the contract nor relieve him from correcting any errors found subsequently in the approved working Drawings or elsewhere associated therewith or with the works.

#### **1.10 RECORD DRAWINGS**

During the execution of works on site the contractor shall, in a manner approved by the P.M. record on working or other Drawings at site all information necessary for preparing Record Drawings of the installed contract Works. Marked-up working or other Drawings and other documents shall be made available to the P.M. as he may require for inspection and checking.

Record Drawing shall include but are not restricted to the following drawings or information: -

- Working Drawings amended as necessary but titled "Record Drawings" and certified as a true record of the as installed" contract works.

- Fully dimensioned drawings of all plant and apparatus.
- System Schematic and trunking diagrams showing all salient information relating to control and instrumentation.
- Wiring diagrams of individual plant, apparatus and switch and control boards.  
These diagrams to include these particular to individual plant or apparatus and elsewhere applicable those applicable to system operation as a whole.

One reproducible copy of the Record Drawings of the contract works and Schematic Diagrams shall be provided not later than one month afterwards.

Notwithstanding the contractor's obligation referred to above, if the contractor fails to produce to the P.M.'s approval of the Record Drawings, within one month of partial or Practical Completion the Employer shall be at liberty to have these drawings produced by others. The cost of obtaining the necessary information shall be deducted from the out-standing payments due to the contractor.

### **1.11 TESTS**

Both on completion of his work and at the end of the guarantee period the contractor shall carry out such tests as may be required in the presence of the P.M. or his representative, or the competent Authority and shall provide all necessary Instruments, labour and materials to do so. The Contractor shall pay such charges related to such tests if any.

### **1.12 QUALITY OF MATERIALS**

Materials and apparatus required for the complete installation as called for in the specifications or Contract Drawings shall be supplied by the contractor unless specified otherwise.

Unless otherwise specified all materials (including equipment, fittings, cables) shall be new, of the best quality and approved origin.

### **1.13. TRAINING**

In the direction and to the satisfaction of the P.M. the contractor shall arrange for the training of the attendant console operators, users and the administrators at the site or the contractor's office on the workings of the IP-PABX. The cost of such training shall be included in the contractor's prices.

### **1.14 EQUIPMENT GUARANTEE**

The contractor shall undertake in writing to rectify free of charge, all faults arising from faulty components, materials, design or workmanship by the manufacturer or contractor whichever is applicable. This liability shall be for a minimum period of one calendar year from the date of acceptance of the equipment. Twelve months limitation notwithstanding, the period of liability shall not end until all defects which appear during the liability period have been rectified.

### **1.15 PATENT RIGHTS**

The contractor shall fully indemnify the Government of Kenya, against any action, claim or proceeding relating to infringement of any patent or design rights, and shall pay any royalties which may be payable in respect of any article or any part thereof which shall have been supplied by the contractor to the P.M. and in like manner the government of Kenya shall fully indemnify the contractor against any such action, claim or proceeding for infringement or alleged infringement under the works the design thereof which shall have been supplied by the P.M. to the contractor, but this indemnity shall apply to the works only, and any permission or request to manufacture to the order of the P.M. shall not relieve the contractor from liability should he manufacture for, or supply to other buyers.

## **2.00 TECHNICAL SPECIFICATIONS**

### **2.01 SCOPE OF THE WORKS**

The contractor shall supply, deliver, unloaded, test, commission, and guarantee and be liable for defects, and be responsible for the initial maintenance, all as specified herein, of the new Telephone Instruments

and accessories and all its associated cabling. The existing IP-PABX is entirely IP, ISDN native and with time multiplexing architecture.

The contractor shall supply and install associated items of plant and equipment other than those clearly stated to be supplied by others. He shall supply and install all accessories, whether described in the specification or not, essential to the completion of the works to the satisfaction of the P.M.

All equipment supplied shall be type approved by CAK and the installation shall be approved by the Communications Commission of Kenya (the competent Authority). The tenderer shall be responsible for all negotiations with and payments to the commission. He shall also pay all fees.

## **2.02 MINIMUM REQUIREMENTS**

**This specification defines minimum requirements, but bidders who offer superior facilities will be considered. Any item/equipment that does not comply with the minimum requirements will be rejected.**

## **2.03 EQUIPMENT FINISH**

The equipment finish shall be the responsibility of the contractor, who shall be responsible for its protection during erection and in the course of making good to the building finishes after equipment erection.

## **2.04 INTERFERENCE SUPPRESSION**

The equipment and all its accessories shall be suppressed so as not to interfere with any communications, radio, T.V., Security or electro-medical equipment, recording or computer systems.

## **2.05 DOOR KEYS**

The contractor shall keep the PABX suite locked at all times when his staff are not present and shall at the conclusion of the contract hand over all keys to the P.M.

## **2.06 EQUIPMENT HARDWARE**

The tenderer shall quote for a multimedia application **fully IP-PABX**. The equipment must be 4U Industrial Grade Rack mountable Server, 4GB RAM, 500GB HDD, Core 2 Duo Processor configuration with duplicated components so that the PABX service will not be lost due to failure of a single component. The components to be duplicated should but not limited to:

- Power Supply Modules
- Main Control card
- Hard disc drives
- Memory storage expansion card

## **2.07 EQUIPMENT SOFTWARE**

The equipment shall be preloaded with core software for driving it and giving it full operating flexibility. The list of features and services should be comprehensive and extensive and comprising the following:

- System features
- Operator features
- Standard telephone features
- Executive telephone features
- System administration features
- IP Network features
- Data features
- Special applications features

## **2.08 SYSTEM FEATURES**

The system features shall include but not limited to the following facilities:

- Automated Attendant
- Black List
- Blind transfer
- Call Details Record.
- Call Forward on No Answer

- Call Forward Variable
- Call Monitoring
- Call Parking
- Call Queuing
- Call Recording
- Call Retrieval
- Call Routing (DID & ANI)
- Call Snooping
- Call Transfer Call Waiting
- Caller ID
- Caller ID on Call Waiting
- Database Store / Retrieve
- Database Integration
- Dial by Name
- Direct Inward System Access
- Distinctive Ring
- Distributed Universal Number Discovery (DUNDi™)
- Do Not Disturb
- Fax Transmit and Receive
- Music On Transfer
- Flexible Extension Logic
- Interactive Directory Listing
- Interactive Voice Response (IVR)
- Local and Remote Call Agents
- Music On Hold
- Caller ID Blocking
- Conference Bridging

## **2.09 WEB BASED COMPANY RECEPTIONIST (CALL QUEUE AND IVR (INTERACTIVE VOICE RESPONSE**

- Calls in queue, pick which calls to answer.
- Active Calls Show the list of active calls and engaged extensions.
- Availability, IP Phone/soft phone status like off-hook, on-hook, ringing.
- Call Park.
- Drag and Drop call transfer.
- Voicemail transfer.
- Call Toggle – Allows the operator to shift between calls
- Music on Hold per queue.
- Caller Experience – Let the caller hear the phone ring instead of listening to music on hold.
- Ringing Options – Ring All, Round Robin, Fewest Calls, Least Recently Called, Random, and In Order.
- Extension Dialing – Allow the callers to dial an extension at any time.
- Send to Voice Mail.

## **2.10 CALL CONTROL**

- Call Transfer – you can easily transfer incoming calls or active calls to another extension. Set the transfer rules for incoming calls so you can check the call list, then transfer, transfer without checking, or send the call straight to voicemail.
- Call Pick up – You can set up Call Pickup groups so some employees can pick up calls ringing on other extensions by dialing a short code on their own phones. You determine who has this permission and which calls they can pick up.
- Do not disturb.
- Hold – Put a call on Hold using the button on your IP phone, or from the Switchboard. You can customize the Music on Hold that plays until you resume the call.
- Call Parking – Put a call on Hold using the button on your IP phone, or from the Switchboard. You can customize the Music on Hold that plays until you resume the call.
- Parallel Ringing.

- Follow me.

## **2.11 VOICE MAIL & VOICE MAIL TO E-MAIL**

- Voice Mail Set up.
- Voice Mail Access.
- Voice mail to email or to any email client.

## **2.12 VOICE RECORDING**

Automatically record calls coming in, going out, or even internally, based on the settings you define.

## **2.13 CONFERENCING**

1. 3 Way conferencing from the IP Phone.
2. Meet me conference- With a Meet Me Conference Center, each of your phone extensions can have its own conference room.
3. Dial-in Conference.
4. Dial-out Conference

## **2.14 FAXING**

1. Outgoing Fax.
2. Incoming Fax.

## **2.15 DISTRIBUTED OFFICE SETUP**

Connects Multiple Offices through MPLS or VPN. Branch offices can be added to the IP server through an INTERNET connection.

## **2.16 PAGING/PAS**

Dial a code to connect to a separate overhead paging and announcement system.

Dial a code and connect directly to a built-in one-way announcement speaker on one or more phones.

## **2.17 MULTI TRUNKING**

Connect with PRI ISDN E1, T1. with Analog/PSTN/CO Lines. Connect with GSM Trunk.

## **2.18 SIP TRUNKING**

- Ready to use the sip-trunking and as well the SIP Client
- Create Multiple VOIP accounts.

## **2.19 CALL ROUTING**

- Location Based routing.
- Skill Based routing.
- DID Based Routing.

## **2.20 BARGE IN & LISTEN**

Barge in: Barge in on both channels. The manager channel is joined onto the spied-on and bridged channel, and all parties can hear each other.

Listen: Monitor an agents call/ Extensions. The manager can hear both the spied-on and bridged channels, but they cannot hear the manager.

## **2.21 WHISPER**

Whisper to the agent. The manager can hear both the spied-on and bridged channels, and the spied-on channel (agent) can also hear the manager, but not the bridged channel, hence “whisper.”

## **2.22 REPORTS**

Complete report on day to day, weekly reports, Monthly report, Extension wise report,

## **2.23 THIRD PARTY INTEGRATION**

Connects any 3 party Integration Like, CRM.  
ERP.

SMS.  
Click to Call.

## **2.24 MULTI PHONES CONNECTIVITY**

Connect with different Phones Like: IP PHONE.

Analog Phone

Soft Phone

Smart Phone (Mobiles).

DECT phones

## **2.25 ATTENDANT CONSOLE (PC Based)**

One or more PC operator attendant consoles as indicated in the list of main requirements shall be supplied, together with two operators' handsets and two operators lightweight headsets per position. They shall be installed complete with suitable UPS and any other accessories necessary to complete their installation. Each console shall be equipped with all necessary facilities for controlling, connecting and monitoring the progress of calls and shall display alarms as necessary.

Night service facilities will normally be provided such that the operator can route in-coming calls to pre-selected extensions when the console is not manned.

Attendant consoles will be multiplex so that the connecting cable will comprise a minimum number of pairs, with little restriction on the sitting of the consoles and positions shall be so common that any operator can attend to any call.

Call presentation, chaining process, call back will be entirely managed by the IP-PABX. However, it will be possible to put certain call on individual hold, on keys, which have been reserved to that effect.

The information displayed on the terminal will give maximum details about the communication (normal call, urgent call, queue status, internal called-party, status of the terminal etc.).

## **2.26 TELEPHONE INSTRUMENTS**

The acquiring of telephone instruments has been liberalized. However, they must be Type-approved by the CAK and the tenderer must obtain the necessary approval.

### **a) EXECUTIVE IP TELEPHONE INSTRUMENTS**

The executive telephone instruments shall be IP- type, keypad or touchpad dialing and shall have, but not limited to, the following operating characteristics: -

- Standard IP- telephone facilities
- Backlit touch, liquid crystal display (LCD) and embedded softkeys for efficient call handling and easy message management
- Feature buttons for quick access to frequently used functions such as hold, mute, do not disturb, transfer, forward, conference page and more
- Message waiting lamp, adjustable base and wall mount
- Includes full-duplex speakerphone and dedicated headset support
- Red light emitting diodes (LEDs) to indicate a call is active, ringing or holding
- QoS and web-based programming
- Upgradeable through software
- Supports G.711 a-law, G.711 u-law, G.729a, and G.729a/b vocoders
- Supports centralized power over LAN (local area network) (IEEE compatible)
- Enables dynamic host configuration protocol (DHCP) or static IP addressing
- User configurable transmission control protocol (TCP) and user datagram protocol (UDP) port number
- Network Port (10/100/1000 SW)
- Access Port (10/100/1000 PC)
- Configurable in SIP mode

- Supports VLAN tagging, which eases management, improves call quality and increases security
- Be **type approved by the Communications Authority of Kenya**. The bidder is required to submit the CAK type approvals.

#### **b) STANDARD IP TELEPHONE INSTRUMENTS**

The standard level model design shall include:

- Backlit touch, liquid crystal display (LCD) and embedded softkeys for efficient call handling and easy message management
- A minimum of 12 self-labeling programmable call/feature keys (but also be capable of supporting up to 24 if required);
- Several fixed feature keys, including such popular features/functions as Speaker, Headset, Conference, Transfer, Redial, Mute, Drop, Hold (Color Highlighted), and Volume Up & Down;
- An integrated full duplex speakerphone; an integrated large graphical backlit gray-scale display screen capable of supporting desktop productivity applications
- Customer programmable self-labeled soft key
- Network Port (10/100/1000 SW)
- Access Port (10/100/1000 PC)
- Embedded Web browser functionality
- Application keys, such as Call Log, Speed Dial and Web Browser; and hearing aid compatibility
- Be **type approved by the Communications Authority of Kenya**. The bidder is required to submit the CAK type approvals.

### **2.27 NUMBERING SYSTEM**

The numbering scheme will be:

Level 0 Access to PABX Telephone Operator

“9 Access to the main exchange

“8 Night service

“7 Spare for future ISDN tie line access

“6 ISDN - Tie line access

“5 Spare for extensions

“4 Extensions

“3 Intercom

“2 Extensions

“1 Spare for special facilities.

“10 plus code for feature de-activation.

“11 plus code for feature activation.

### **2.28 EXCHANGE LINES**

Exchange lines shall be arranged for first party release. The IP-PABX must be capable of processing the number of digits required for international calls in accordance with CCITT and CCIL recommendations.

A device shall be fitted to sense main exchange dial tone as there may be considerable delay in receiving this after the seizure of a free exchange line.

### **2.29 ISDN TIE LINES**

The lines will provide access to all extensions and the operator. They are to be for auto-auto working through signaling and first party release. Tones are to be returned over to tie lines.

Disconnect loop signaling is at present employed with a maximum loop resistance of 2000 ohms.

## **2.30 SYSTEM MAINTENANCE**

### **Test Equipment and Tools**

PABX routine test set and a set of maintenance tools are to be supplied. The tools and spare parts are to be listed in Appendices “A” and “B” of the Bills of Quantities.

### **Maintenance Features**

The IP-PABX shall have the following system maintenance features:

- Line status monitoring device
- Station message data recording port
- System Working report
- On site system administration using a compatible terminal and attendant console.
- Remote system administration capability
- Automatic on-line diagnostic testing

Maintenance diagnostic software programmes shall be provided which can be run as required whilst the IP-PABX is in normal service.

### **Maintenance and Operating Manuals**

On practical completion of the works, the contractor shall furnish two sets of copies in soft copy and hard copy forms each of maintenance and operating manuals relating to the IP-PABX installed. The hard copy manuals shall be legibly written in English and properly bound with hard cover.

They will include but not limited to the following:

- System description
- Fault finding procedure
- Maintenance and servicing periods and procedures
- Schematic and wiring diagrams of the equipment
- Record drawings

## **2.31 POWER SUPPLY**

### **Rectifier**

The IP-PABX shall be fed through an integrated rectifier and an AC –DC converter fed from 240V A.C. 50Hz power supply. The rectifier will be equipped with the following devices:

- Security device to monitor the minimum and maximum authorized values of the output voltage. When one of the thresholds is reached, the power supply to the IP- PABX must cut itself automatically “Floating” and automatic “Equalization” device with manual command of the “Equalization” mode and automatic switch back to “floating” mode once the battery is loaded.

The rectifier will be sized to supply power to the IP-PABX and simultaneously allow re-loading of the battery within 10 Hours maximum.

### **Battery**

A stationery battery is required to supply power during peak hours and mains supply failures and to provide smoothing for DC out put from the rectifier.

The battery shall be “Maintenance Free” and shall have sufficient capacity when fully charged to supply power to the IP -PABX in the event of mains supply failure for minimum of 8 hours. The minimum DC out put shall be 48V DC +/- 10% and its life expectancy shall be 10 years. Automotive or Traction battery will not be accepted.

### **UPS**

A UPS of suitable rating is required. It shall have a response time of NOT more than 0.1 seconds and a correction range from -12% to +12% with surge/spike protection.



### **Voltage Stabilizer**

A voltage stabilizer of suitable rating is required. It shall have a response time of NOT more than 0.1 seconds and a correction range from -12% to +12% with surge/spike protection.

### **Earthing**

An independent telecommunication earth shall be provided for the IP-PABX. The earth lead cable shall not be less than 6mm<sup>2</sup> and shall terminate to copper earth electrode(s) in a concrete manhole (300mm x 300mm) with a suitable concrete cover. The earth impedance shall not exceed 4 ohms.

## **1.32 LIST OF MAIN REQUIREMENTS FOR THE PROPOSED IP-PABX.**

ITEM	FACILITY DESCRIPTION	INITIAL CAPACITY	ULTIMATE CAPACITY
1.	ISDN PRI-E1 of 30 Channels complete with a suitable Modem.	1No.	1No.
2.	No. of IP Extensions	50	100
3.	No. of Exchange Lines (Trunks)	8	12
4.	(i) GSM lines (Safaricom, Airtel, and Telkom) complete with lines.	4	6
	(ii) Wireless backup for the pilot exchange line.	1No.	1No.
5.	PC Based Operator Consoles	1	1
6.	Operator Head Sets	2	2
7.	Operator Hand Sets	2	2
8.	Branch Connectivity IP Telephony	At least - 1 No. In an environs, where the internet service infrastructure would allow.	System must support NOT less than 2 branches to connect, for future expansion as centralized architecture.

## **2.33 OTHER MINIMUM REQUIREMENTS FOR THE IP-PABX**

**The IP-PABX shall: -**

1. be fully IP
2. be VOIP ready
3. have duplex CPU
4. be ready to connect to LAN and also support branch connectivity where WAN/internet service is available.
5. be ISDN ready
6. must be able to **support five digits** extensions numbering plan
7. have at least 50% power failure trunk transfer facility
8. must be capable of offering unified communication services (voice, video & data convergence)
9. be capable of connecting/transferring an incoming call to a mobile service when the extension user is not at his desk.
10. have a UPS of at least 8 hrs autonomy.
11. have direct inward dialing system access facilities and data communication services.
12. be of compact modular design with sub-lines pre-wired and easily removable
13. be equipped with flexible music on hold
14. have call forwarding automatic call transfer, three party conference among other standard features.
15. be equipped with mains power supply Anti-surge, over-voltage and under-voltage protection devices and lightning protectors for all cards.
16. Have on screen fault indication facility.

17. be supplied with telephone call management and information software based system with a memory capable of storing at least 20,000 calls, and be supplied complete with a PC and a printer for the telephone call management
18. be complete with a maintenance terminal facility.
19. be **type approved by the Communications Authority of Kenya**. The bidder is required to submit the CAK type approvals.
20. be **compatible** for connection to Telkom Ltd, Safaricom networks etc.

## **2.34 TELEPHONE MANAGEMENT SYSTEM**

### **Scope of Works**

The works to be carried out comprise supply, installation, testing and commissioning of the following:

- a) Telephone call management software
- b) 1 No. Desktop computer
- c) 1 No. Medium duty laser printer
- d) 1No. Medium duty UPS

### **Technical Specifications**

#### **1. Call Management Software**

##### **System Capabilities**

The software system shall be able to perform the following:

1. Telephone calls tracking
2. Telephone calls costing/billing
3. Telephone calls budgeting
4. The software system shall be fully window based and run as a background task
5. All telephone call costs shall be computed basing on the prevailing service provider's rates, or shall be customized for employer's own use.
6. The software system shall have the capability of automatically barring and unbarring exchange lines and level 9 lines that shall go beyond their budget allocation and automatically reinstate them on budget re-allocation.  
It shall also have the capability of automatically barring and unbarring roaming PINS that shall go beyond their budget allocation and automatically reinstate them on budget re-allocation.
7. The software system shall be able to allocate password to the users.

##### **Reports Generated**

The call management software shall be able to generate the following: -

1. Dates of calls
2. Duration of calls
3. Extension numbers where calls originate
4. Approximate cost of trunk calls
5. Time of calls
6. Detailed report on call transfers
7. Details of exchange lines used
8. Details of extension lines used
9. Detailed report of most frequently called numbers
10. Detailed report of longest calls for selected duration
11. Detailed report of mobile calls by extensions
12. Detail of most expensive calls within selected time
13. Graphical presentation of reports.

**2.35 TECHNICAL SPECIFICATION FOR COMPUTER AND ACCESSORIES****A) SPECIFICATIONS FOR DESKTOP COMPUTERS**

ITEM	DESCRIPTION	MINIMUM REQUIREMENTS	BIDDER'S SPECIFICATIONS
<b>A</b>	<b>GENERAL SPECIFICATIONS</b>		
1	Make	<b>BRANDED</b>	
2	Model	HP Workstation Z600	
3	Country of Origin		
4	Manufacturer's brochure and specifications	Must be supplied	
<b>B</b>	<b>TECHNICAL SPECIFICATIONS</b>		
5	Processor	Intel® Xeon with AMD Graphics Card (2.4 GHz, 12 MB cache, Quad Core)	
6	System Memory	32 GB DIMM 240-PIN	
7	Disk cache	Integrated <b>12MB L2 cache</b> Bus Speed <b>2700 MHz</b>	
8	Storage sub system	<b>1 TB 7200 rpm SATA SSD</b>	
9		DVD / CD-Writer Drive Memory Card Reader	
10	Display/Graphics	<b>21" TFT Screen</b> (Free Standing-Adjustable)	
11	Keyboard	PS/2 Enhanced keyboard	
12	Pointing device	PS/2 Compatible <b>Optical mouse</b>	
13	Audio/ Graphics Systems	❖ PCI 3D audio/video cards ❖ TV/FM cards ❖ Amplified speakers (External)	
14	Communication Interface	❖ 10/100/1000Gbs fast ethernet, RJ 45 jack ❖ 56K ITU V.90 data/fax modem, wake-on-ring ready	
15	<b>Operating System Pre-load plus CDs</b>	Windows 10 Professional 64	
16	<b>Application Software, pre-installed, registered and CDs supplied</b>	MS OFFICE 2017 OR MS OFFICE XP PRO (2017 Version)	
17	Power sub- system	220-240V ac, 50HZ	
18	Power extension cord	At least four outlets with surge protection	
<b>19</b>	<b>WARRANTY</b>	One year parts replacement warrant	

## B) SPECIFICATIONS FOR MEDIUM DUTY LASER PRINTER

ITEM	DESCRIPTION	MINIMUM REQUIREMENTS	BIDDER'S SPECIFICATIONS
<b>A</b>	<b>GENERAL SPECIFICATIONS</b>		
1	Make	BRANDED	
2	Model		
3	Type	Desktop	
4	Country of Origin		
5	Manufacturer's brochure and specification	Must be supplied	
<b>B</b>	<b>TECHNICAL SPECIFICATIONS</b>		
6	Resolution	1200x1200 dpi	
7	Printing speed	21 ppm	
8	Duplex function	Standard	
9	Memory	16 MB expandable to 72 MB	
10	Languages	Enhanced HP PCL, postscript	
11	Maximum Media size	A4 paper	
12	Media types	Plain paper, envelopes, transparencies, labels, postcards	
13	Media input capacity	250 sheet input cassette	
14	Connectivity	❖ IEEE – 1284 compliant bi-directional parallel port ❖ 2.0 compliant USB port	
15	Duty cycle	60,000 pages per month	
16	Operating system support	All MS windows/ Open Source	
17	C P U	Power PC 405/200 MHZ	
18	Power Supply	240V ac, 50HZ	
	<b>WARRANTY</b>	One year parts replacement warranty	

## C) SPECIFICATIONS FOR LIGHT DUTY UPS

ITEM	DESCRIPTION	MINIMUM REQUIREMENTS	BIDDER'S SPECIFICATIONS
<b>A</b>	<b>GENERAL SPECIFICATIONS</b>		
1	Make	<b>BRANDED</b>	
2	Model		
3	Country of Origin		
4	Manufacturer's brochure and specification	Must be supplied	
<b>B</b>	<b>TECHNICAL SPECIFICATIONS</b>		
5	Rating	<b>650VA</b>	
6	Input voltage swing	220 – 270V ac	
7	Output voltage	220-240V ac	
8	Output frequency	50-60HZ auto-sensing	
9	Protection	❖ Output overload ❖ Input/output short circuit	

ITEM	DESCRIPTION	MINIMUM REQUIREMENTS	BIDDER'S SPECIFICATIONS
10	Communication Interface	Serial port communication support	
11	Design	❖ Automatic voltage regulation ❖ Mains isolation ❖ User replaceable batteries ❖ Static-automatic bypass ❖ Maintenance bypass	
12	Battery Module	❖ <b>25minute backup time</b> ❖ <b>3year lifetime</b> ❖ Sealed lead acid type preferred ❖ Automatic periodic battery tests ❖ Short recharge time (maximum 5 hours for 100% run time) ❖ Protection against excessive discharge	

Other Items to be supplied:

- 1) Power Supply extension cable complete with 13A 3pin plug and 4x13A switched socket outlets panel which is complete with inbuilt overcurrent/overvoltage/surge protection

## **2.36 ITEMS TO BE STATED BY THE TENDERER**

Delivery period from date of award of contract..... weeks

Period required for installation from receipt of equipment .....weeks

What is the name and model number of the proposed IP-PABX for which you have tendered?

.....

In which countries is the PABX and it PCB's manufactured.....

.....

With what standards does the IP-PABX comply? .....

Is a full stock of spares available in Kenya? .....

For how many years is the continuity of spare parts guaranteed? (A minimum of 10 years is required)  
..... years

What is the busy hour traffic capacity of the IP-PABX assuming no delay in main exchange dial tone?  
.....

What is the maximum ambient temperature in which the PABX will function satisfactorily?  
.....

Is air conditioning required for the IP-PABX? .....

Is protection against high transient line voltage incorporated? .....

How many pairs are required per extension line? .....

Is the operator's console suitable for a blind operator? .....

What is the warranty period offered? .....  
**(Note: 12 months is the minimum)**

Is an MDF incorporated in the PABX? .....

Is the POE incorporated in the PABX? .....

Capacity of the standby battery in A.H.....

Output of charger in Amps .....

Provide a comprehensive list of other places and contacts where the proposed IP-PABX is installed and working (a separate sheet may be used) .....

.....

.....

Provide a list of branch offices and contacts for purposes of future maintenance when the proposed IP-PABX is installed and extended to the counties and sub- counties (a separate sheet may be used)

.....

.....

.....

## **PART 2 - TECHNICAL SPECIFICATIONS FOR THE CCTV AND ACCESS CONTROL SYSTEM**

### **2.01 EXTENT OF WORKS FOR SECURITY SURVEILLANCE SYSTEM**

The security surveillance system should consider the following.

*IP CCTV Camera.* The cameras specified should be able to cover the distance with clear pictures. The resolution of the cameras should be able to give motion pictures that are clear.

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

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

The IP Surveillance system should be able to support the following

- IP based recording system with motion detection.
- Digital zooming into recorded images/ life view
- Multi-level password protection and logging facilities
- Integrates with access control, burglar control, burglar alarms and Fire alarm system and other building management systems as may be specified by the engineer.
- Image compression for remote web live and playback viewing incase of IP.
- Multi display monitors
- Automatic daily archiving to hard drive or optical drive.
- Fully adjustable digital video motion detection with exclusion /inclusion multi regions per camera.
- Efficient video collection, storage and retrieval.

- Advanced and instant search capability
- Digitally signed recordings, with audit trails of all operator actions and system event.
- Sufficient Storage capacity of the Network Video Recorder.
- Infra red illuminators in poor lighting conditions
- Able to interface with other systems on the ground
- Support IP and PoE connectivity.

## **2.02 MINIMUM ALLOWABLE TECHNICAL SPECIFICATIONS FOR THE CCTV SYSTEM**

### **2.02.1 GENERAL SPECIFICATIONS FOR THE CAMERAS**

**The cameras are classified into two main types**

#### **a) Fixed cameras –**

These cameras have a fixed area of view depending on its angle of view and the focal length of the lens used.

They can be used in door and outdoor depending on the requirements. When used out door, the cameras are housed in a weather proof housing of IP66. Those used indoor come with different shapes of housings. The exview housings are used for cameras covering long distances like corridors and the dome housings are used for common areas like lobbies, security desks etc.

#### **b) Pan Tilt and Zoom Cameras**

These cameras are only used to support the static cameras. They are useful as they are able to pan 360 degrees, tilt over 90 degrees and zoom into an object for Min 16 times and above.

The cameras shall be indoor type and outdoor type with PoE/ 240V main supply with the appropriate power adaptors, 50Hz field frequency and operating according to the CCIR standard with minimum resolution of 2megapixels.

The camera shall be fixed on sliding rail track on the ceiling slab or walls as directed by the Electrical Engineer with an appropriate bracket.

It shall be possible to control the lens and the pan only head remotely via a remote control box at the control room. The Camera must be able to be controlled by a CCTV keyboard

They shall be linked to the Television Monitors and the Control Equipment through CAT 6A cables as appropriate and according to the project Engineers instructions.

The mounting height and position of cameras shall be such that the desired coverage shall be achieved as distinctly as possible.

## **2.03 MINIMUM REQUIREMENTS FOR THE CCTV CAMERAS**

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

#### **a) IP Bullet camera (CCTV camera Type 1)**

- 12Mega Pixel Outdoor IP Bullet Camera with Infrared
- Built in Infrared 50 meters minimum
- imaging sensor – 1/1.7” minimum
- Wide Dynamic Range – digital
- Day and night vision; Minimum illumination 0.008lux (colour), 0lux (B/W) IR on
- Focal Length – 2.8~12mm
- Field of view: 36.1<sup>0</sup>- 101<sup>0</sup> horizontal field of view

- IP network capable – IPv6
- PoE capability
- H.265+ video compression
- Simultaneous live view: 20 channels
- Accessible Edge Storage with internal 256GB MicroSD card slot and complete with a 128GB MicroSD card
- Day and night vision capability
- Tampering detection, Video tampering detection, Network Disconnect, IP address conflict, Illegal login, HDD full, HDD error, Line crossing detection, intrusion detection, region entrance and exit detection, unattended baggage, face detection, Counting, Bi-directional audio I/O communication
- Masking Capability,
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP67 rating
- ONVIF Compliant

#### **b) IP PTZ CCTV Camera (CCTV camera Type 2)**

- 2 Mega Pixel IP Dome Camera with Infrared
- Built in Infrared 200 meters minimum
- imaging sensor – 1/2.8” minimum
- Wide Dynamic Range – 120dB
- Minimum Adjustable digital zoom 16x, optical zoom 25x
- Day and night vision; Minimum illumination 0.0004lux (colour), 0lux (B/W) IR on
- Focal Length – 4.8~120mm
- Field of view: 3°-58° horizontal field of view
- IP network capable – IPv6
- PoE capability
- Endless 360degree pan rotation
- H.265+ video compression
- Simultaneous live view: 20 channels
- Accessible Edge Storage with internal 256GB MicroSD card slot and complete with a 128GB MicroSD card
- Day and night vision capability
- Tampering detection, Face detection, Audio Detection, Motion Detection, Region Enter/Exit, Line Crossing, intrusion, Network Disconnect, IP address conflict, Illegal login, HDD full, HDD error, Bi-directional audio I/O communication
- Masking Capability,
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP67 rating
- Heater
- Auto tracking
- ONVIF Compliant

#### **c) IP Dome CCTV Camera (CCTV camera Type 3)**

- IP 4MP Dome camera
- 1/2.5" CMOS imaging sensor with 120db WDR.
- Motorized Varifocal length of 2.7 to 13.5 mm lens
- IR Viewable Length 40m
- Field of view: 30°-110° horizontal field of view
- Minimum illumination 0.008lux (colour)
- Day and night vision capability (ICR)
- IP network capable – IPv6
- PoE capability
- H.265+ video compression
- Simultaneous live view: 6 channels



- Tampering detection, Face detection, Motion Detection, unattended baggage detection, Line Crossing, intrusion, Network Disconnect, IP address conflict, Illegal login, HDD full, HDD error, Bi-directional audio I/O communication
- Masking Capability,
- Accessible Edge Storage with internal 128GB MicroSD card slot and complete with a 128GB MicroSD card
- ONVIF compliant application programming interface
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- Weather proof IP66 rating

**d) IP Dome CCTV Camera (CCTV camera Type 4)**

- 12Mega Pixel Outdoor IP Dome Camera with Infrared
- Built in Infrared 30 meters minimum
- imaging sensor – 1/1.7” minimum
- Wide Dynamic Range – digital
- Day and night vision; Minimum illumination 0.008lux (colour), 0lux (B/W) IR on
- Focal Length – 2.8~12mm
- Field of view: 36.1<sup>0</sup>-101<sup>0</sup> horizontal field of view
- IP network capable – IPv6
- PoE capability
- H.265+ video compression
- Simultaneous live view: 20 channels
- Accessible Edge Storage with internal 256GB MicroSD card slot and complete with a 128GB MicroSD card
- Day and night vision capability
- Tampering detection, Video tampering detection, Audio detection, Network Disconnect, IP address conflict, Illegal login, HDD full, HDD error, Line crossing detection, intrusion detection, region entrance and exit detection, unattended baggage, face detection, Counting, Bi-directional audio I/O communication
- Masking Capability,
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- ONVIF Compliant

**e) IP Indoor Auto dome PTZ CCTV Camera (CCTV camera Type 5)**

- 2 Mega Pixel 4inch indoor IP Auto Dome Camera with Infrared
- Built in Infrared 50 meters minimum
- imaging sensor – 1/2.8” minimum
- Wide Dynamic Range – 120dB
- Focal Length – 4.8~120mm
- Minimum Adjustable digital zoom 16x, optical zoom 25x
- Day and night vision; Minimum illumination 0.001lux (colour), 0lux (B/W) IR on
- Field of view: 2.50-57.60 horizontal field of view
- IP network capable – IPv6
- PoE capability
- Endless 360degree pan rotation
- Tilt: -5<sup>0</sup> to 90<sup>0</sup>
- H.265+ video compression
- Simultaneous live view: 20 channels
- Accessible Edge Storage with internal 256GB MicroSD card slot and complete with a 128GB MicroSD card
- Day and night vision capability
- Tampering detection, Face detection, Audio Detection, Motion Detection, Region Enter/Exit, Line Crossing, intrusion, unattended baggage, Bi-directional audio I/O communication
- Masking Capability,
- Web viewer/browser support

- Auto tracking
- ONVIF Compliant

#### **f) IP Dome CCTV Camera (CCTV camera Type 6)**

- 4Mega Pixel Outdoor IP Dome Camera with Infrared
- Built in Infrared 30 meters minimum
- imaging sensor – 1/1.8” minimum
- Angle adjustment: Pan-0°-355°; tilt-0°-75°; rotate-0°-355°
- Wide Dynamic Range – 140dB
- Day and night vision; Minimum illumination 0.002lux (colour), 0lux (B/W) IR on
- Focal Length – 2.8~12mm
- Field of view: 38.9° - 109.2° horizontal field of view
- IP network capable – IPv6
- PoE capability
- H.265+ video compression
- Simultaneous live view: 20 channels
- Accessible Edge Storage with internal 256GB MicroSD card slot and complete with a 128GB MicroSD card
- Day and night vision capability
- Video tampering detection, motion detection, Audio detection, Network Disconnect, IP address conflict, Illegal login, HDD full, HDD error, Line crossing detection, intrusion detection, region entrance and exit detection, unattended baggage, face detection with upto 30 faces at the same time, Counting, queue management, Bi-directional audio I/O communication
- Masking Capability,
- Web viewer/browser support
- Vandal proof IK-10 rating housing
- ONVIF Compliant

#### **2.04 MOUNTING BRACKETS**

The Brackets shall:

Be suitable for wall or ceiling mounting of a single camera.

Be at least 5.5"length

Have an auto lock facility.

#### **2.05 CAMERA HOUSING**

The camera housing shall:

Be IP66 and IK-10 rated with integral cable management.

Be Weatherproof and constructed from aluminium with epoxy coating.

#### **2.06 COLOR VIDEO MONITORS**

The monitor should be capable of providing high levels of picture quality 10MHz bars visible at low brightness and reliability stable synchronization, black level clamping, low sensitivity and high stability. The monitors shall be high performance color video monitors for monitoring scenes from the above cameras and viewing playback scenes from the video cassette recorders. The monitors shall be located at places to be shown on site by the project manager.

The monitor shall give stable and interference free pictures of scenes being viewed. It shall also conform to the following specifications:

Type	: Full HD; LED; 50,000hours panel life
System	: NTSC/PAL
Screen size	: 40”
Resolution	: 1,920 x 1,080 optimized for CCTV applications
Display Colour	: 16.0 million
Brightness	: 350cd/m <sup>2</sup>
Contrast Ratio	: 5,000:1
Video input signal	: 1.0 V pk-pk
Power consumption	: Not more than 80W
Power input	: 240V 50HZ

Interface	: VGA, DVI, HDMI, RGB, Audio, Video
Connectivity	: Ethernet, RS-232Cremotecontrol
Viewing Angle	: 178°/ 178°

## **2.07 NETWORK VIDEO RECORDER**

**The network video recorder shall have the following minimum requirements:**

- 64 Channels
- Rack mounted
- Recording speeds of at least 500Mbps
- Fan: Redundant dual ball bearing fan; Speed adjustable; Hot-plug
- Multi screen Display
- 16 Hot swap HDDs (RAID 5,6,10)
- external storage support capability
- Video Output: 2No. 4K HDMI Outputs; VGA
- Redundant hot swap power supply
- In built intelligent video analysis
- Compression: H.265+
- ONVIF compatibility
- Protocol: IPv6, HTTPS, PPPoE
- Ethernet: 4No. RJ45 10M/100M/1000M self-adaptive Ethernet interface
- Storage capacity : 160TB
- External interface: 1No. RS-485, Keyboard; 2No. USB 2.0; 2No. USB 3.0;
- Smart Video Search Feature for streamlined Investigations
- Recording resolution of 12MP
- Applications: VCA detection alarm is supported; VCA search for face detection, behavior analysis, people counting and heat map; Supports starting record with one key; Realizes instant playback for assigned channel during multi-channel display mode; Smart search for the selected area in the video; and smart playback to improve the playback efficiency.
- Dual-OS design to ensure the reliability of system running
- User management
- Encryption

## **2.08 CCTV MANAGEMENT SOFTWARE**

**CCTV management software with the following minimum specifications:-**

- Supports managing user name, user level, telephone number, E-mail, and user role information.
- Supports managing the expiry date for users.
- Supports security binding, and linked IP segment users can login to the platform.
- Supports displaying the online status of users.
- Supports ONVIF protocol.
- Supports devices importing and exporting, time synchronization; remotely obtain on the platform.
- Supports camera information configuration: names, type, protocol type, stream type, keyboard control number; configuration copy, synchronize camera names, and enable/disable stream media by areas.
- Supports cameras recording schedule configuration and three storage methods: devices, and CVR.
- Supports recording via stream media server, configuration, and stream type configuration
- Supports scheduled recording, alarm recording and other recording types in different colors.
- Supports searching video files by time, cameras and recording types.
- Supports playback on Control Client with 1/4/6/7/9/16/24/25 split screen layout and full screen.
- Supports video wall linkage with decoding resource, and resolution ratio of decoding can be set as 1080P, 720P, D1, CIF.
- Supports video wall control: the screen supports 1/4/9/16 split window division, jointing, window opening and roaming. Window Division is also available after window opening and the configuration can be saved as a scene.
- Supports live view on video wall, playback on video wall, alarm linkage on video wall.
- Event Recording Scheme

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

## 2.09 **UNINTERRUPTIBLE POWER SUPPLY (UPS)**

This shall be an on-line Un-interruptible power supply with output rating able to provide power to the security surveillance system a minimum of 8 hours incase of power failure.

It shall be microprocessor- based so that both output voltage and frequency are closely regulated and continuously monitored and also provide system diagnostic and shut down protection functions. It shall feature a maintenance by-pass to enable normal routine maintenance operations to be performed without interruptions to the system.

It shall be fitted with both visual and audible alarms to indicate any change in equipment status such as:

input power problems  
ups faults  
ups overload  
battery discharging

### **Other parameters are:**

Input supply:	240/415VAC 50HZ
Power factor:	0.8 lag at full load
Current limit:	125% of the normal
Output voltage:	240/415VAC 50 HZ
Output voltage tolerance:	2%
Output frequency tolerance	: 0.05%

## 2.10 **CABLING**

- a) All cables must pass through conduits or trunking.
- b) All cables and connectors shall be labeled.
- c) No distortion due to kinks, sharp bends or excessive hauling tension shall be allowed.
- d) Cables shall be run in a manner eliminating any possibility of strain on the cable itself or on the terminations.
- e) Cables shall have no joints or splices.
- f) Cables shall be kept at a minimum distance of 150mm from items liable to become hot or cold.
- g) Bending radii shall be not less than eight times the overall cable diameter.
- h) The manufacturers hauling tension shall not be exceeded.

- i) All cable ties and fixings shall be tightened to support the cable loom without distortion of the cable sheath.
- j) The STP 4 pair shall be of cat 6A grade and exceed ANSI/TIA/EIA-568-Aj and ISO/IEC 11001 standards. Cat 6A structured cabling shall be used throughout the entire installation.

## 2.11 PATCH PANELS

- a) Shall conform to ANSI/TIA/EIA-568A and rack mounted.
- b) Shall be equipped with RJ45 contacts of Cat 6A sockets with capacity of 12, 24 or 48 ports.
- c) Shall be earthed.
- d) Except for patch cords used to connect NICs to the RJ45 sockets, all patch cords shall be labeled at each extremity with PVC support and intelligible marking. For other components the label shall be of stiff plastic PVC type.

## 2.11 CORE SWITCH

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

Technical Specifications	Requirement
LAN Interface Modules	16SFP+
<b>Chassis</b>	
Chassis Slots	4
Fixed Slots (for Control Modules)	1
Open Slots (for Port Modules)	3
Max. Switching Capacity	500 Gbps
Max. Packet Forwarding Rate	400Mbps
<b>Maximum Port Density</b>	
10/100/1000Base-TPorts	144
10/100/1000Base-TPorts with PoE	144
Gigabit SFP Slots	144
10-Gigabit SFP+Slots	48
Dimensions	≤8U
Operating Temperature	0° to50°C
Operating Humidity	10%to90%RH
<b>L2Features</b>	
MACAddressTable	32K per I/O module
Flow Control	-802.3xFlowControl -HOL Blocking Prevention
IGMP Snooping	-IGMPv1/v2/v3Snooping -Support2Kgroups -IGMPProxy2 -Host-based IGMP Snooping Fast Leave
802.3adLinkAggregation	-Compliantwith802.1AXand802.3ad -Max. 128 groups per device, 8 ports per group -Support cross-module trunk

Technical Specifications	Requirement
power supply	The core switch should have redundant power supply, redundant fan tray and redundant CPU/ supervisor engine installed

### 2.13 EDGE SWITCHES

Active control equipments at the LAN Edge should have the following features

- o) 20 x 10/100/1000BASE-T PoE ports
- p) 4 x 10/100/1000BASE-T/SFP Combo ports
- q) 4 x SFP+ ports
- r) High-bandwidth physical stacking of up to 12 units for a total of 576 Gigabit ports
- s) Supports 802.3af and 802.3at PoE with a high-capacity 370 W PoE power budget
- t) L2/L3 static routing support, including Static Route and RIP v1/v2/ng
- u) Comprehensive security features including IMPB, AAA, L2/L3/L4 access control, QoS, and Safeguard Engine
- v) IPv6-ready
- w) VLAN: VLAN Group, GVRP, 802.1Q tagged, Port-based, Trunking, Voice, Asymmetric
- x) QoS: 802.1p, Queue Handling, Bandwidth Control
- y) ACL: VLAN ID, MAC Address, TCP/UDP port Number, Ether Type, IPV6, Time Based
- z) Security: SSH v2, Traffic Segmentation, DoS prevention, DHCP server screening
- aa) AAA: 802.1X, Web-Based Access Control, MAC-Based Access Control
- bb) Active Edge switches should be quoted with a minimum of **One year of warranty** covering free replacement of parts and units.

### 2.14 NETWORK CABINET

- a) The cabinet shall be metallic with front clear glass and of good finish and conveniently accessible by technical personnel for maintenance. The main cabinet shall be at least 42U and other cabinets housing edge switch should be at least 12U/9U
- b) Power to the cabinet shall be switched off from within the cabinets. Proper power socket cables to be supplied with the cabinet.
- c) The cabinet for active devices shall conform to ANSI/TIA/EIA-568A specifications with forced cooling.
- e) Support small factor pluggable (SFP) and industry leading density up to 240 of IEEE 8033 for 1000 Base-SX ports per system.
- c) Cabinets shall have adequate room for additional components typically 3U free space.

### 2.15 LABELING

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

### 2.16 OPTICAL FIBER CABLE

The fiber cable must be 8 core single mode fiber cable with the following specifications:-

- a) Cable size: 8 cores.
- b) Termination: SC Duplex connectors.
- c) Graded Index: Nominal 62.5/125 micron

### **2.17 FIBER PATCH PANELS**

All Backbone Fiber links should be terminated on Fiber Patch Panels. Connector interfaces should support ST, Sc simplex, Sc duplex, FC, LC or MT-RJ.

### **2.18 BACK BONE**

Backbone cabling inclusive of switches and all necessary accessories shall be carried out in readiness for the termination of edge switches.

The Backbone cabling shall be flexible and allow for easy 'add ons' for future expansions. Hence enough capacity shall be allowed for future expansion. It shall be done using the star topology.

### **3.00 ACCESS CONTROL – SYSTEM**

#### **3.01 THE INTELLIGENT SYSTEM CONTROLLER**

The controller is the main item for control access system, when specifying, the engineer has to bear the following.

The controller shall have a built in power supply, with a battery back up facility and sufficient power to drive the number of doors with access control.

The control should be able to provide time zoning, extensive door monitoring, logging of all events and hardware alarms – output.

User's parameters shall be done locally in the stand alone via a portable and easy to use compact programme using the English Languages Software.

The controller should be able to use the proximity cards or the magnetically encoded keys as identifiers as specified by the engineer.

It shall have the following features

- Bi- processor Central Processing Unit
  - With lead battery back up with four ( 4 hrs) hours autonomy incase of network failure.
  - Autonomous clock/calendar chip with automatic management of regular/daylight saving time with autonomy of one hour.
  - Management of peer to peer connection with other servers and as a consequence a high decision making capability and full operative autonomy.
  - Up to 2500 transactions stored on a removable cartridge with a flash EPROM memory.
- The server as specified by the Engineer should be able to store the transactions for a minimum of two months. The speed of the server to be such that the programming and communication between the card readers and other interface units is fast.

#### **3.02 BIOMETRIC (FINGER) AND PROXIMITY CARD READER**

-shall have biometric state of the art finger print reader and keypad

-Be Bi-directional and meets requirements for HID Proximity cards (standard ISO/ABA 125 KHz, up to 4cm of distance).

-Have Alphanumeric Liquid Crystal Display (LCD), back lit, with two lines of 16 characters each, for the visualization of time data, guide messages for the user, and service messages.

-Should have 2 multicolor LED: Green for the access granted, Red for invalid transaction, Yellow for Echelon Service function.

-Variable Tones for valid/invalid transactions.

-Have a USB Port, RS-485 communication interface, contactless read/write smart card technology

-LAN Works cabling Interface should be done using unshielded twisted pair cable in free topology. (Transceiver FTT10A, 78Kbps)

-Meets IP31 level of protection

-atleast 500 fingerprint user capacity

-atleast 500 valid cards capacity

-It should be able rated to operate within  $0^{\circ}\text{C} \div +50^{\circ}\text{C}$  temperature range

-It should be rated to operate up to a relative humidity 95% without condensation or as otherwise specified by the engineer for special cases.

-Must meet all laid down international Electromagnetic Compatibility standards

#### **3.03 PROXIMITY CARD**

The cards shall be of a biometric type and that can accommodate a customer logo, photographs and text should they be required and they shall have a high coercively magnetic strip.

#### **3.04 MAGNETIC DOOR CONTACTS**

They shall be of the magnetic reed switch and with appropriate magnet able to handle at least a minimum of 200KN and also of the normally open type



### **3.05 2- DOOR ACCESS CONTROLLER**

The controller shall be capable of controlling 1No.(one) or 2 No.(two) doors in a stand – alone mode. The controller shall have a built in power supply, with a battery back up facility and sufficient power to drive two locks.

The control should be able to provide time zoning, extensive door monitoring, logging of all events and hardware alarms – output.

Users parameters shall be done locally in the stand alone via a portable and easy to use compact programme using the English Languages Software.

The controller should be able to use the magstripe cards or the magnetically encoded keys as identifiers.

The card readers shall have a Pin-pad.

The power for the reader and for the electric lock shall be supplied via the controller.

### **3.06 MAGESTRIPS CARD**

The cards shall be of a type that can accommodate a customer logo, photographs and text should they be required and they shall have a high coercivity magnetic strip.

### **3.07 DOOR CONTACTS**

They shall be of the magnetic reed switch and the appropriate magnet and also of the normally open type.

### **3.08 HAND HELD METAL DETECTOR**

Should meet the following minimum requirements

- Contact free inspection
- Extremely high detection performance
- Audible and vibrating alert
- Automatic zero compensation
- LED for visual metal detection
- Sensitivity of between 11cm to 40cm detection distance in air
- Meet DIN EN ISO9002 quality standard, VDE 0848 TEIL4 and A3 security standards

### **3.09 RACK MOUNTED UNINTERRUPTIBLE POWER SUPPLY (UPS)**

This shall be Rack mounted on-line Un-interruptible power supply with output rating able to provide power to the security surveillance system and controlled access system for a minimum of 8 hours incase of power failure.

It shall be microprocessor- based so that both output voltage and frequency are closely regulated and continuously monitored and also provide system diagnostic and shut down protection functions. It shall feature a maintenance by-pass to enable normal routine maintenance operations to be performed without interruptions to the system.

It shall be fitted with both visual and audible alarms to indicate any change in equipment status such as:

input power problems

ups faults

ups overload

battery discharging

Other parameters are:

Input supply: 240VAC50HZ

Power factor: 0.7 lag at full load

Current limit: 125% of the normal

Output voltage: 240V AC 50 HZ

Output voltage tolerance: 2%

Output frequency tolerance : 0.05%

### **3.10 X-RAY BAGGAGE SCANNER**

Should meet the following minimum requirements|:

- A tunnel opening of 620mm wide by 418 mm high
- Conveyor speed at 50Hz mains frequency of 0.24m/s
- Conveyor should be able to carry up-to 160 Kg of evenly distributed load.
- High resolution and able to detect 39AWG(0.09mm)
- 17" color monitor
- High image resolution
- High speed digital signal transmission using 24 bit real time image processing
- Advance material classification system
- Online image analysis
- Electronic zoom facility
- Image presentation in B/W and color
- Digital video memory of 1280\*1024 at 24 bits
- X-ray leakage should meet applicable international standards relevant to X-ray emitting devices
- Constructed of heavy duty rustproof material for extremely durable and tamper proof operation.

### **3.11 WALK THROUGH METAL DETECTOR**

The walk through metal detector should have the following minimum features:

- Multi-zone panel version
- Passage way internal size 760x2030x580mm(WxHxD)
- Detection Zones: Atleast 33No.Zones
- Power Supply: 240V, 50Hz
- Adjustable sensitivity with range settings
- Programmable operation
- Programming access protected by mechanical lock and passwords
- High immunity to both electrical and mechanical interference
- Easy maintenance
- Control unit incorporated in the detector
- High intensity display using green and red signals
- High intensity audible alarm signal with programmable volume/tone
- Signal to be proportional to the mass of the object detected
- Facility for networking via built-in keypad and RDU or RS232/ RS485 serial connection
- Multi-zone display bar for height of person localization
- Should be harmless to: pacemakers, life support systems, pregnant women, magnetic storage media.
- Photo transit counter
- Emergency batteries for 6.5 hours independent operation capability
- Constructed of heavy duty materials for extremely durable and tamper proof operation.
- Conform to FAA, (3-GUN-Test), NILECJ-0601-00 standards for all security levels, EC regulations, all international standards relating to electrical safety.

### **3.12 Access control Server Controller**

- a) Bi-processor CPU68EN302, including a Motorola 68000 (32 Bit architecture) and Ethernet communication processor.
- b) 1 MByte FLASH to download the application firmware.
- c) MByte FLASH EPROM on a removable cartridge for the download of the permanent database and for the transit and events buffer. Optional memory with 8 Mbytes Flash Memory Available.
- d) 1MByte RAM for the activity.
- e) Management of up to 12 Temakeys terminals

- f) Management of upto 64 I/O
- g) Upto 10,000 cards and 2,500 transactions stored on a removable cartridge with flash EPROM memory.
- h) Management of peer to peer connection with the other tema server and as a consequence high decision making capability and full operative autonomy.
- i) Autonomous clock/calendar chip with automatic management of regular /daylight saving time with autonomy of 1.000 hrs in case of power failure.
- j) Lead battery back up with full functionality for 4 hours in case of network failure and signaling o the battery status.

### 3.13 Biometric Clocking Machine

- shall have biometric state of the art finger print reader and keypad
- Be Bi-directional and meets requirements for HID Proximity cards (standard ISO/ABA 125 KHz, up to 4cm of distance).
- Have Alphanumeric Liquid Crystal Display (LCD), back lit, with two lines of 16 characters each, for the visualization of time data, guide messages for the user, and service messages.
- Should have 2 multicolor LED: Green for the access granted, Red for invalid transaction, Yellow for Echelon Service function.
- Variable Tones for valid/invalid transactions.
- Have a USB Port, RS-485 communication interface, contactless read/write smart card technology
- Lon Works cabling Interface should be done using unshielded twisted pair cable in free topology. (Transceiver FTT10A, 78Kbps)
- Meets IP31 level of protection
- atleast 1,000 fingerprint user capacity
- atleast 1,000 valid cards capacity
- It should be able rated to operate within  $0^{\circ}\text{C} \div +50^{\circ}\text{C}$  temperature range
- It should be rated to operate up to a relative humidity 95% without condensation or as otherwise specified by the engineer for special cases.
- Must meet all laid down international Electromagnetic Compatibility standards

## **SECTION VII: STATEMENT OF COMPLIANCE**

- a) I confirm that my bid is in compliance with all clauses of the General Conditions, General Specifications and Particular Specifications in this Tender.

Signed ..... *for and on behalf of the tenderer*

In the capacity of .....

Date. ....

Official Rubber Stamp .....

## **SECTION VIII: TECHNICAL SCHEDULE**

### **1. General Notes to the Tenderer**

- 1.1 The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.
- 1.2 The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer's literature shall be accepted. Failure to comply with this may have his tender disqualified.
- 1.3 Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer.

### **TECHNICAL SCHEDULE**

The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT** comprehensive manufacturer's technical brochures and performance details for all items listed in this schedule (fill forms attached).

#### **A. Structured Cabling and IP-PABX**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>TYPE/MAKE/MODEL</b>	<b>COUNTRY OF ORIGIN</b>
1.0	Core switch		
2.0	Edge switch		
3.0	CAT 6A cables		
4.0	Patch panels		
5.0	Patch Cords		
6.0	Fiber optic cable		
7.0	Cable managers		
8.0	UPSs		
9.0	Data Cabinets		
10.0	IP PABX		
11.0	Telephone Instruments		
12.0	Faceplate		
13.0	Cable Managers		

**B. CCTV and Access Control**

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>TYPE/MAKE/MODEL</b>	<b>COUNTRY OF ORIGIN</b>
<b>1.</b>	<b>Cameras</b> a) TYPE 1 b) TYPE 2 c) TYPE 3 d) TYPE 4 e) TYPE 5 f) TYPE 6		
<b>2.</b>	<b>Servers</b> a) Storage Server		
<b>3.</b>	<b>Video Management Software (VMS)</b>		
<b>4.</b>	<b>Network Video Recorder</b>		
<b>5.</b>	<b>LED monitors/display</b>		
<b>6.</b>	<b>Network Switches</b> a) Core Switch b) Edge Switch		
<b>7.</b>	<b>Patch panels/patch cords</b>		
<b>8.</b>	<b>UPS</b>		
<b>9.</b>	<b>CAT 6A cables</b>		
<b>10.</b>	<b>Fiber Cable</b>		
<b>13.</b>	<b>Data Cabinet</b>		
<b>14.</b>	<b>Access Control</b> a) Door Reader b) Magnetic door lock		

## SECTION IX - BILLS OF QUANTITIES

### (a) Preambles

1. The method of measurement of completed work for payment shall be in accordance with *THE STANDARD METHOD OF MEASUREMENT FOR BUILDING WORKS FOR EAST AFRICA 2008 EDITION*
2. The Site is situated in *KAGOCI, MATHIRA, NYERI COUNTY*\_\_\_\_\_It is approximately *130*\_\_\_\_\_Kilometers from Nairobi. Access to the site shall be through *KARATINA TO KAGOCI ROAD*.

Which is an existing public road. Any damage caused to the surfaces of this road shall be made good at the Sub-Contractor's expense. The Contractor shall visit the site and acquaint itself with its nature and position, the nature of the ground, substrata and other local conditions, positions of existing power, water and other services, access roads or any other limitations that might affect his cost or progress. No claim for extras shall be considered on account of lack of knowledge in this respect.

3. The Sub-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.
4. The Sub-Contractor shall carry out the various sections of the Works in such an order as the Architect May direct. The Procuring Entity reserves the right to occupy the Works by sections on completion provided that such occupation is considered to be both practical and reasonable and will not interfere with the Works. The Contractor shall allow any costs associated with such occupation.
5. The Sub-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 in clement weather for this area shall be entertained.
6. The Sub-Contractor shall, upon receiving instructions to proceed with the Works, draw up a Programme and Progress Chart setting out the order in which the Works are to be carried out, with the appropriate dates there of. This Chart shall be agreed with the Architect and no deviation from the order set out in it will be permitted without the written consent of the Engineer. The Contractor will be responsible for arranging the above programme with all his sub-Contractors and Specialties. The Contractor shall allow in his rates for carrying out this exercise, and for updating it as required.
7. The Sub-Contractor shall submit to the Architect on the first day of each week or such longer period as the Architect from time to time direct, a Progress Report and any information for the proceeding period, showing the progress during the period and the up-to-date cumulative progress on all important items of each section or portion of the Works.
8. The Sub-Contractor shall arrange for photographs of the Site to be taken by a professional photographer approved by the Engineer. The Photographs shall provide a record of the Site and adjacent are as prior to the commencement of the Works and shall cover such portion of the works in progress and completion as the Architect shall direct. All prints shall be full plate size, unmounted, and marked on the reverse side with the date of exposure, identification reference and brief description. The copyright of all photographs shall be vested in the Procuring Entity. The negatives and four prints from each negative shall be delivered to the Architect within two weeks of exposure.
9. 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.
10. Prior to commencement of any work the Sub-Contractor is to ascertain from the relevant Authorities the exact position, depth and level of all existing electric cables, waterpipes or other services in the area and he shall make whatever provisions may be required by the Authorities concerned for the support and protection of such services. Any damage or disturbance caused to any services shall be reported immediately to the Architect and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense. Where appropriate the Contractor shall open up the ground in advance of the main work by hand digging if necessary,

to locate precisely the position and details of the services which are likely to affect his operations.

11. The Sub-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.
12. The Sub-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.
13. The Sub-Contractor is to allow for complying with all instructions and regulations of the Police Authorities.
14. The Sub-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.
15. The Sub-Contractor shall give the Architect reasonable notice of the intention to set out or take levels for any part of the Works so that arrangements may be made for checking the work. The accuracy of setting out and leveling shall be within the tolerances specified in the Specifications or on the Drawings. The checking of setting out or leveling by the Architect shall not relieve the Contractor of his duties or responsibilities under the Contract.
16. Sub-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.
17. The Sub-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.
18. The Sub-Contractor s attention is drawn to the standards levy order which was amended on 15<sup>th</sup> October 1998. Legal notice No.154 of 1998. The Contractor is required to pay a monthly level of 0.2% of his factory price of construction works with effect from January 1999. Tenderer shall allow for this in the build-up of his rates.
19. The Sub-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.
20. Cover up all and protect from damage, including damage from in clement weather, all finished work and unfixed materials, including that of Sub-Contractors, etc., to the satisfaction of the Architect until the completion of the Contract.
21. The Sub-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.
22. The Sub-Contractor 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 Architect for the approval or rejection, and any further samples in the case of rejection, until such samples are approved by the Engineer. Such samples, when approved, shall be the minimum standard for the work to which they apply. The procedure for submitting samples of materials for testing or approval and the method of marking for identification shall be as laid down by the Engineer. The Sub-Contractor shall allow in his Tender for such samples and tests, including those in connection with his Sub-Contractors work.

23. The Sub-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 1<sup>st</sup> July 2000. A 3% withholding tax will be applicable to all interim. The contractor shall allow for any costs arising resulting there from in the build-up of rates.
24. 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 6<sup>th</sup> June 2014, regulation 25, - Allow 0.5% of the tender sum/contract sum for construction levy.
25. 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
26. The contractor shall allow and pay for all insurance to cover risks and indemnities required in the Conditions of Sub-Contract.
27. It will be deemed that the tenderer will have visited the site, and to have taken into consideration any special difficulties and requirements not referred to herein but associated with the conditions of existing facilities, ground levels etc, as the case maybe, and to have made allowance for such in this tender
28. The tenderer shall be required to supply equipment/items which comply with the technical specifications set out in the bid document
29. The tenderer shall, where applicable, provide leaflets and catalogues giving technical and physical details of the equipment/items being offered by them as an integral part of his bid.
30. Unless otherwise specified in the particular specification, Tenderers shall assume that all fittings required will be import duty paid.
31. The Sub-Contractor shall allow for and provide at their own cost as-built drawings to Engineer's approval



(b) **Measured work items**

**BILLS OF QUANTITIES.****PRELIMINARIES**

ITEM	DESCRIPTION	UNIT	QTY	RATE	
1.1	Performance bond		Sum		
1.2	Insurances		Sum		
1.3	Samples		Sum		
1.4	Record Drawings(As Installed)		Sum		
1.5	Testing and Inspection		Sum		
1.6	Initial Maintenance		Sum		
<b>TOTAL CARRIED FORWARD TO PRICE SUMMARY PAGE</b>					

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<b>ALL PRICES TO BE IN KSHS</b>				
	<b><u>QUOTE FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF THE FOLLOWING ITEMS</u></b>				
<b>1.0</b>	<b><u>GROUND FLOOR</u></b>				
<b>(A)</b>	<b><u>HORIZONTAL CABLING</u></b>				
1.1	Siemon Category 6A angled faceplate, SINGLE port white colour complete with fixing screws or approved equivalent.	No.	24		
1.2	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords or approved equivalent. Colour to be selected by client.	No.	9		
1.3	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords. One side RJ 45 and the other RJ45 or approved equivalent.	No.	24		
1.4	Siemon Category 6A 4pair, 24 AWG, UTP, 10 ohm cable, must exceed ANSI/TIA/EIA-568-B1 requirement or approved equivalent.	Lm	1,920		
1.5	Siemon Category 6A, 4pair stranded UTP 1meter factory terminated patch cords or Approved equivalent.	No.	24		
1.6	Siemon 24 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	1		
1.7	Siemon 48 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	-		
1.8	Self adhesive Labels for cable labelling(PACKETS OF 200 LABELS EACH)	Item	1		
<b>(B)</b>	<b><u>ACTIVE COMPONENTS AND CABINETS</u></b>				
1.9	42U metal cabinet with a perforated metal door complete 4No fans, power socket 6No, grounding kits and castors and as described in the particular specifications.	No.	1		
1.10	24 port switch with PoE as described in the particular specifications complete with the 10G SFP uplink modules, necessary licences and all other accessories.	No.	1		
1.11	Supply, install and configure wall mounted wireless Access point as described in the particular specification	No.	4		
1.12	Siemon 1U(19".0) horizontal cable managers or approved equivalent.	No.	1		
	<b>TOTAL FOR GROUND FLOOR CARRIED FORWARD TO PRICE COLLECTION PAGE 97</b>				

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<b>ALL PRICES TO BE IN KSHS</b>				
	<b><u>QUOTE FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF THE FOLLOWING ITEMS</u></b>				
<b>2.0</b>	<b><u>FIRST FLOOR</u></b>				
<b>(A)</b>	<b><u>HORIZONTAL CABLING</u></b>				
2.1	Siemon Category 6A angled faceplate, SINGLE port white colour complete with fixing screws or approved equivalent.	No.	15		-
2.2	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords or approved equivalent. Colour to be selected by client.	No.	2		-
2.3	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords. One side RJ 45 and the other RJ45 or approved equivalent.	No.	15		-
2.4	Siemon Category 6A 4pair, 24 AWG, UTP, 10 ohm cable, must exceed ANSI/TIA/EIA-568-B1 requirement or approved equivalent.	Lm	1,200		-
2.5	Siemon Category 6A, 4pair stranded UTP 1meter factory terminated patch cords or Approved equivalent.	No.	15		-
	Siemon 24 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	1		-
2.7	Siemon 48 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	-		-
2.8	Self adhesive Labels for cable labelling(PACKETS OF 200 LABELS EACH)	Item	1		-
<b>(B)</b>	<b><u>ACTIVE COMPONENTS AND CABINETS</u></b>				
2.9	12U metal cabinet with a perforated metal door complete with fans, power socket 6No, grounding kits and castors and as described in the particular specifications.	No.	1		-
2.10	24 port switch with PoE as described in the particular specifications complete with the 10G SFP uplink modules, necessary licences and all other accessories.	No.	1		-
2.11	Supply, install and configure wall mounted wireless Access point as described in the particular specification	No.	4		-
2.12	Siemon 1U(19".0) horizontal cable managers or approved equivalent.	No.	1		-
	<b>TOTAL FOR 1ST FLOOR CARRIED FORWARD TO PRICE COLLECTION PAGE</b>				

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<b>ALL PRICES TO BE IN KSHS</b>				
	<b><u>QUOTE FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF THE FOLLOWING ITEMS</u></b>				
<b>3.0</b>	<b><u>SECOND FLOOR</u></b>				
<b>(A)</b>	<b><u>HORIZONTAL CABLING</u></b>				
3.1	Siemon Category 6A angled faceplate, SINGLE port white colour complete with fixing screws or approved equivalent.	No.	20		
3.2	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords or approved equivalent. Colour to be selected by client.	No.	7		
3.3	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords. One side RJ 45 and the other RJ45 or approved equivalent.	No.	20		
3.4	Siemon Category 6A 4pair, 24 AWG, UTP, 10 ohm cable, must exceed ANSI/TIA/EIA-568-B1 requirement or approved equivalent.	Lm	1,600		
3.5	Siemon Category 6A, 4pair stranded UTP 1meter factory terminated patch cords or Approved equivalent.	No.	20		
3.6	Siemon 24 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	1		
3.7	Siemon 48 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	-		
3.8	Self adhesive Labels for cable labelling(PACKETS OF 200 LABELS EACH)	Item	1		
<b>(B)</b>	<b><u>ACTIVE COMPONENTS AND CABINETS</u></b>				
3.9	12U metal cabinet with a perforated metal door complete with fans, power socket 6No, grounding kits and castors and as described in the particular specifications.	No.	1		
3.10	24 port switch with PoE as described in the particular specifications complete with the 10G SFP uplink modules, necessary licences and all other accessories.	No.	1		
3.11	Supply, install and configure wall mounted wireless Access point as described in the particular specification	No.	6		
3.12	Siemon 1U(19".0) horizontal cable managers or approved equivalent.	No.	1		
	<b>TOTAL FOR 1ST FLOOR CARRIED FORWARD TO PRICE COLLECTION PAGE</b>				

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<b>ALL PRICES TO BE IN KSHS</b>				
	<b><u>QUOTE FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF THE FOLLOWING ITEMS</u></b>				
<b>4.0</b>	<b><u>THIRD FLOOR</u></b>				
<b>(A)</b>	<b><u>HORIZONTAL CABLING</u></b>				
4.1	Siemon Category 6A angled faceplate, SINGLE port white colour complete with fixing screws or approved equivalent.	No.	12		
4.2	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords or approved equivalent. Colour to be selected by client.	No.	5		
4.3	Siemon Category 6A, 4pair stranded UTP 3 metre factory terminated patch cords. One side RJ 45 and the other RJ45 or approved equivalent.	No.	12		
4.4	Siemon Category 6A 4pair, 24 AWG, UTP, 10 ohm cable, must exceed ANSI/TIA/EIA-568-B1 requirement or approved equivalent.	Lm	960		
4.5	Siemon Category 6A, 4pair stranded UTP 1meter factory terminated patch cords or Approved equivalent.	No.	12		
4.6	Siemon 24 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	1		
4.7	Siemon 48 port category 6A UTP (19".0) patch panel to ANSI/TIA/EIA-568A, colour black or approved equivalent.	No.	-		
4.8	Self adhesive Labels for cable labelling(PACKETS OF 200 LABELS EACH)	Item	1		
<b>(B)</b>	<b><u>ACTIVE COMPONENTS AND CABINETS</u></b>				
4.9	12U metal cabinet with a perforated metal door complete with fans, power socket 6No, grounding kits and castors and as described in the particular specifications.	No.	1		
4.10	24 port switch with PoE as described in the particular specifications complete with the 10G SFP uplink modules, necessary licences and all other accessories.	No.	1		
4.11	Supply, install and configure wall mounted wireless Access point as described in the particular specification	No.	4		
4.12	Siemon 1U(19".0) horizontal cable managers or approved equivalent.	No.	1		
	<b>TOTAL FOR 3RD FLOOR CARRIED FORWARD TO PRICE COLLECTION PAGE</b>				

**KARATINA UNIVERSITY LIBRARY: STRUCTURED CABLING AND CCTV SUBCONTRACT**

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSHS)	TOTAL (KSHS)
	<b><u>QUOTE FOR THE SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF THE FOLLOWING ITEMS</u></b>				
<b>5.0</b>	<b><u>FIBER OPTIC INTERLINKS AND BACKBONE CORE SWITCH</u></b>				
5.1	Supply and install an outdoor 8 core single mode fiber cable to be installed in 100mm diameter HGPVC duct buried 450mm below ground complete with trenching, tilling and backfilling. Cable to link the library to the existing administration block	Lm	1,000		
5.5	Supply and install indoor 8 core single mode fiber cable between floors in the main bulding and between floor cabinets	Lm	320		
5.6	Supply and install fiber trays for each of the cabinets	No	5		
5.7	Core switch complete with the 10G SFP uplink modules, licences and all other accessories and as described in the particular specifications.	Item	1		
5.8	Supply and install a rack mounted 10KVA Uninterruptible power supply unit.	No	1		
5.9	Supply and install a 5KVA Uninterruptible power supply unit.	No	3		
5.10	Main fiber back bone distribution frame/panel for both the incoming fiber cable and for reticulation. The panel is to be waterproof, complete with all accessories.	Item	1		
5.11	Supply, install, test and commission an IP PABX equipped as described in the technical Specifications	No.	1		
5.12	Supply, install, test and commission a battery set for the IP-P.A.B.X. above complete with inverter and enough capacity to serve all auxiliary equipment linked to the IP-PA.B.X. for a period of minimum 8 hours .	No.	1		
5.13	Supply, install, test and commission an AC Voltage stabilizer for the IP-P.A.B.X. and all auxiliary equipment.	No.	1		
5.14	Provide and independent telecommunication earth to the IP-P.A.B.X	No.	1		
5.15	Supply, Install, Test and commision an MDF suitable for the ultimate size of the IP-PABX Machine above	No.	1		
5.16	Supply, Install, Test and commision a Modem for ISDN PRI for the PABX	No.	1		
5.17	Standard IP telephone instruments complete with telephone cord and termination blocks as described in the technical Specifications	No.	16		
5.18	Executive IP telephone instruments complete with telephone cord and termination block as described in the technical Specifications	No.	7		
5.19	Expansion module for the Secretarial/Operator Sets as described in the technical Specifications	No.	3		
5.20	Labelling and documentation	lot	1		
5.21	Allow for structured cabling termination at all computer terminals, attendance in power connections, testing and commissioning of the network to TSD-ISN standards.	lot	1		
5.22	Grounding and bounding kit complete with 50mm diameter copper bounding bar and 6mm thick green and yellow wire. The Earthing the system is to be to the approval of the Engineer.	Item	1		
5.23	Provide for configuration, testing, setting to work and integration of the new installation to the existing system installation	lot	1		
5.24	Provide for fiber cable testing, preparing and presenting warranty and documentation, cabling layout diagrams, indelible point labels and preparing and submitting individual test results (for each point and for all point to be submitted as a bound report). Attach printed results and soft copy	lot	1		
5.25	Any other items necessary to complete the structured cabling satisfactorily. (List and give quantities of the items)				
	a)..... b)..... c)..... d).....				
	<b>TOTAL FOR FIBER LINKS, BACK BONE CORE SWITCH CARRIED FORWARD TO PRICE COLLECTION PAGE</b>				

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**KARATINA UNIVERSITY LIBRARY: STRUCTURED CABLING AND CCTV SUBCONTRACT**

**CCTV INSTALLATIONS**

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	<b>Supply, install &amp; program, test and commission the following</b>				
	<b>IP CCTV SURVEILLANCE SYSTEM</b>				
1	CCTV Camera Type 1 complete with mounting brackets and all other accessories and as Specified in the technical specifications	No	3		
2	CCTV Camera Type 2 complete with mounting brackets and all other accessories and as Specified in the technical specifications	No	4		
3	CCTV Camera Type 3 complete with mounting brackets and all other accessories and as Specified in the technical specifications	No	13		
4	CCTV Camera Type 4 complete with mounting brackets and all other accessories and as Specified in the technical specifications	No	7		
5	CCTV Camera Type 5 complete with mounting brackets and all other accessories and as Specified in the technical specifications	No	8		
6	CCTV Camera Type 6 complete with mounting brackets and all other accessories and as Specified in the technical specifications	No	1		
7	128GB Surveillance SSDD Suitable for Cameras ABOVE	No.	36		
8	PTZ Control Joystick (3-axis twist zoom) with 7" TFT touch screen and as described in the particular specifications		1		
9	24 port switch with PoE as described in the particular specifications complete with the 10G SFP uplink modules, necessary licences and all other accessories.	No.	2		
10	CORE Network Switch as described in the technical Specifications	No.	0		
11	3kVA Rack Mount Inverter INCLUDING Batteries for 8hours operation	No.	1		
12	1kVA Rack Mount Double conversion UPS TRUE online INCLUDING Batteries	No.	1		
13	Multi Mode Fiber Optic 4 Core Cable	LM	50		
14	1 M fiber patch cords:	No.	2		
15	12 Port Fiber Optic Patch Panel	No.	1		
<b>Total C/F to next page</b>					

**KARATINA UNIVERSITY LIBRARY: STRUCTURED CABLING AND CCTV SUBCONTRACT**

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	<b>Total B/F from previous page</b>				
15	SC-SC fibre patch cord	No.	0		
16	FREE STAND CABINET 42U Complete with fans, trays and all other accessories and as Specified in the technical specifications	No.	1		
17	12U Data Cabinet Complete with fans, trays, mounting brackets and all other accessories and as Specified in the technical specifications	No.	0		
18	48- Port CAT6A UTP patch- panel C/w all the necessary accessories.	No.	0		
19	24- Port CAT6A UTP patch- panel C/w all the necessary accessories.	No.	2		
20	CAT6A UTP Cable manager (Organizer) C/w all the necessary accessories.	No.	4		
21	Cat 6A, 4 pair UTP cables.	Lm			
22	CAT 6A UTP Copper 1 M patch cords:	No.			
23	Network video recorder (NVR) with 3year warranty complete with CCTVsurveillance recording and management software and all other accessories and as Specified in the technical specifications.	No.	1		
24	8TB Surveillance SATA HDD Suitable for NVR ABOVE	No.	10		
25	Redudant Server storage with 128 tera bytes storage, hot swappable with 10G network connection.	No.	0		
26	4TB 3.5' Hard Disk Drives for Server Above	No.	0		
27	Monitoring client station workstation as described in the particular specifications	No.	1		
28	4K Video Wall Controller for item 29	Item	1		
	<b>Total C/F to next page</b>				

**KARATINA UNIVERSITY LIBRARY: STRUCTURED CABLING AND CCTV SUBCONTRACT**

ITEM	DESCRIPTION	QTY	UNIT	RATE	AMOUNT (Kshs)
	<b>Total B/F from previous page</b>				
29	40" LED Monitor Display complete with mounting brackets and all other accessories and as Specified in the technical specifications	No.	7		
30	Rectangular skirting trunking Type B of dimensions 150mm×50mm 1 compartment along all walls as indicated in drawing number drg. Trunking to be powder coated and white in colour for the riser to the floors from the server room	Lm	0		
31	Rectangular skirting trunking Type B of dimensions 50mm×50mm 1 compartment along all walls as indicated in drawing number drg. Trunking to be powder coated and white in colour for the riser to the floors from the server room	Lm	0		
32	LOCAL Training (User & Operator) for No. 5 person(s).	Sum	1		
33	Any other item necessary to complete installation in this section (Please itemize) a) b) c) d)	Lot	Item		
	<b>Total for CCTV installation C/F to Summary Page</b>				

## ACCESS CONTROL INSTALLATIONS

ITEM	DESCRIPTION	QTY	UNIT	RATE	
34	Door input controller interface unit with twenty input and two output as described in particular specifications	6	No.		
35	Two door controller as specified in particular specifications	6	No.		
36	A 300Kg- Force magnetic door lock	6	No.		
37	Door Reader with biometric (Finger) and proximity card reader and complete with keypad and USB port as specified in particular specifications	9	No.		
38	Emergency Break glass	6	No.		
39	Override Key Switch	6	No.		
40	Sturdy Exit Button Switch	3	No.		
41	Category 6A, 4Pair, STP Cable and as Siemon 9A6LA-A5/USA or Approved Equivalent	390	M		
42	Provide power for access controller module from the existing UPS power source	1	item		
43	Proximity card with RFID the individual / client's details	10	No.		
44	EBI software including Tema Module	1	No.		
45	Software module for Access control integrated with Building Management system	0	No.		
46	Access control server controller as specified in particular specifications	1	No.		
47	Wire the entire access control system using 12 core 2.5mm <sup>2</sup> fire resistant cable.	1	lot		
48	Allow complete with the system software, configuration, full graphic customization and programming of the installed system.	1	Lot		
<b>Total for Access Control installation C/F to Summary Page</b>					

## SUMMARY PAGE

Item	Description	AMOUNT (KSHS)
1	Total for Preliminaries	<b>1,000,000.00</b>
2	Total for Structured Cabling and IP-PABX Installations	
3	Total for CCTV Installations	
4	Total for Access Control Installations	
5	Provisional sum as contingency	
6	Allow for any discounts	
	<b>Grand Total carried to Form of Tender in KShs. Including VAT</b>	

Tenderer's Name and Stamp

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Signature ..... Date.....

PIN No ..... VAT Certificate No. ....

Witness..... Address.....

Signature of Witness..... Date.....